

USER'S GUIDE

CANVAS 5

Mac OS and Windows

CANVAS 5



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INTRODUCTION

Welcome to Canvas, a unique, integrated graphics environment. Canvas lets you work with drawings, images, type, and imported graphics in one program. Canvas provides specialized document options and templates so you can create illustrations, presentations, and publications, without having to switch to other applications.

Whether you are a newcomer to desktop graphics, or an experienced designer, you'll find many tools and features in Canvas that can help you be more productive.

- A complete toolbox for illustration, layout, editing, proofing, and final output lets you take your projects from start to finish in Canvas.
- A flexible interface with floating palettes for most functions helps you work faster, while templates with custom settings, illustrations, and text give you a head start on your projects.
- Canvas files are compatible across Mac OS and Windows platforms, and Canvas supports all standard file formats, so you can easily draw on multiple sources for your projects.

About the documentation

Please take a few minutes to read this chapter for important information about the documentation and getting help.

In addition to the *User's Guide*, Canvas documentation includes the on-line Help system. You should refer to the Release Notes in the on-line Help system for the latest information, including changes to the documentation and updates to the program.

✓ Tip

Throughout the book, you'll find tips for working efficiently and exploring creative possibilities. You should also watch for items labeled "Important" for information to help you avoid problems.

Conventions used in the documentation

The Canvas documentation uses certain terms and syntax when describing menu commands, mouse actions, keyboard keys, and procedures for specific operating systems.

Specific editions of Canvas work with specific operating systems. The documentation points out functional differences when necessary.

Mac OS The Apple Computer operating system for Macintosh and compatible computers. In the documentation, *Mac OS* refers to System 7 and later versions, including 7.1, 7.5, 7.5.3, and so on. When a certain procedure is for Mac OS only, we write "(Mac)" following the instructions.

Windows The Microsoft operating system for IBM-PC compatible systems. In the documentation, *Windows* refers to 32-bit Windows, including Windows 95 and Windows NT 3.5.1 and later versions. When a certain procedure is for Windows only, we write "(Windows)" following the instructions.

Keyboard keys and shortcuts

Standard names and abbreviations are used for keyboard keys on each platform; your particular keyboard might use different labels.

Key name	Description
Alt	The Alternate key, usually labeled "Alt" on Windows keyboards.
Command	The key labeled "Command" or marked with a propeller or Open Apple symbol on Mac OS keyboards.
Ctrl	The key labeled "Control" or "Ctrl" on both Mac OS and Windows keyboards.
Option	The key labeled "Option" on Mac OS keyboards.
Shift	The Shift key, used to type capital letters.
Enter	The key labeled "Enter" on Mac OS keyboards. This key has a different function than the "Return" key.
Return	The key labeled "Return" on Mac OS and "Return" or "Enter" on Windows keyboards.

Menu commands

When the documentation tells you to use a menu command, the instructions are written this way:

Choose Paste in the Edit menu.

This instruction tells you to: choose the paste command by opening the Edit menu and selecting (highlighting) the “Paste” command. You can also use a keyboard shortcut or speed key, if one is shown in the menu.

In some cases, a menu command opens a submenu of additional commands. When the documentation tells you to choose a submenu command, the instruction is written this way:

Choose Arrange ► Bring To Front in the Object menu.

This instruction tells you to: open the Object menu, highlight the “Arrange” command so that the submenu opens, and then choose the “Bring To Front” command in the submenu.

Using modifier keys with the mouse

For some actions, you press a key at the same time you click or drag the mouse. For example, you can press the Shift key as you click an object to select it. This action is described as “Shift-click.” If you press the Command key, for example, at the same time you drag the mouse, the action is described as “Command-drag.”

When referring to Canvas for Windows, some instructions tell you to “right-button click” an object. This means that you click the object using the right-hand button on the mouse.

Using the on-line Help system

The Canvas Help system lets you view documentation while you work. It’s designed to provide the same, up-to-date information and operate the same on both Mac OS and Windows platforms.

To view Help within Canvas (Mac OS)

Press the Help key on an extended keyboard or choose “Contents,” “Shortcuts,” or “Find Help On…” in the Help menu (also known as the Balloon Help menu) under the question mark (🔍) icon.

Note: The Canvas Help system is available if you install Canvas using the “Easy Install” option, or if you perform a custom installation that includes the on-line Help system files.

◆ **To view the Canvas release notes:** Choose Contents in the Help menu to open the Contents page of the Canvas Help system. Then click “Release Notes” to view the latest information on Canvas.

When a dialog box is open and you press the Help key, the Help system displays the Help topic for that dialog box. Otherwise the Help window opens. You can view a list of topics and search for topics in the Help window.

To view Help within Canvas (Windows)

Press the F1 key to display Help or choose “Contents,” “Shortcuts,” or “Find Help On...” in the Help menu. When a dialog box is open and you press the F1 key, the Help system displays the Help topic for that dialog box. At other times, a Help window opens. You can view a list of topics and search for topics in the Help window.

Commands in the Help menu

The following commands in the Canvas Help menu give you quick access to the Help topics you want.

Contents Opens the Table of Contents for the Help system.

Find Help On Opens a Help window that lets you search for topics by entering a word or phrase.

Shortcuts Opens the Help topic that describes keyboard and mouse alternatives to Canvas commands.

Deneba Home Page Mac: If you have a web browser open, Canvas switches to the browser and loads the Deneba home page. Otherwise, Canvas searches for an installed browser (Cyberdog, Navigator, Internet Explorer, or Mosaic, in that order), launches it, and loads the Deneba home page. Windows: Canvas switches to or launches the default browser (as designated in the system Registry), then loads the Deneba home page.

To view Help without Canvas

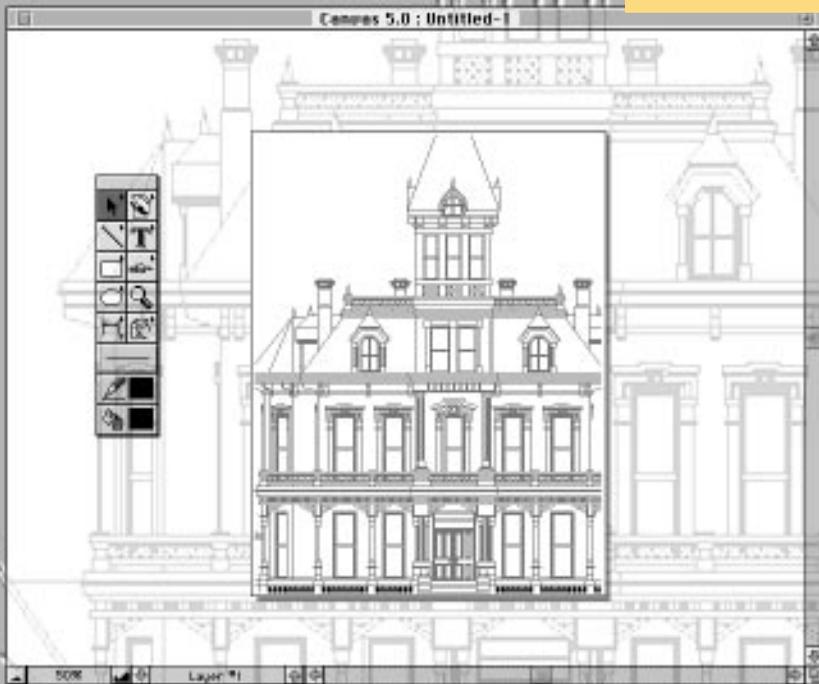
Double-click the file named Canvas Help (Mac) or Canvas.hlp (Windows). This launches the Help application and opens Canvas Help.

Mac OS Help system The QuickHelp application displays the Canvas Help topics. If you install Canvas using the “Easy Install” option, the Canvas installer also installs the QuickHelp application.

Windows Help system The Windows Help application displays the Canvas Help topics. The Windows Help application is part of Windows 95 and Windows NT operating systems.

DOCUMENTS & SETUP

I



RUNNING CANVAS

This chapter explains how to start and end a Canvas work session. It also provides an overview of the Canvas interface and describes basic procedures, including how to

- select tools from the Canvas toolbox
- open and arrange palettes
- use information displayed in the status bar
- undo, redo, and repeat actions

Starting and exiting Canvas



Canvas 5 program icon

To start Canvas, use one of the following methods:

- Double-click the Canvas 5 program icon.
- Choose the Canvas shortcut in the Start menu (Windows).
- Double-click a Canvas document to start Canvas and open the document.
- Double-click a Canvas template file to start Canvas and create a new document based on the template.

When you start Canvas, it displays a start-up screen and a status indicator as it loads. Then Canvas opens a blank document, or the document you used to start the program.

◆ **To view the start-up screen during a Canvas session:** Choose About Canvas in the Apple menu (Mac) or the Help menu (Windows). You can view the start-up screen again to check your serial number, version number, and other information.

◆ **When you want to stop using Canvas:** Choose Quit (Mac) or Exit (Windows) in the File menu. If you try to quit without saving a document that has changed, Canvas asks if you want to save it first.

Loading external tools at start up

Each time you start Canvas, you can use the ToolPicker to select which external tools you want to load. The tools that load at start up are available for the current work session. If you want to select different tools, you can restart Canvas and use the ToolPicker again.

◆ **To use the ToolPicker:** Press the Spacebar as soon as the Canvas start-up sequence begins. Continue holding down the Spacebar until the ToolPicker dialog box appears.

You can use the ToolPicker to select tools for one work session or select the tools you want to load every time you start Canvas. You can also create groups of external tools for different projects; see “Loading external tools” on page 93.

Checking optional software at start up

Canvas displays a message if it encounters a problem, such as missing system software components, as it starts. If a message appears, click OK to continue loading Canvas.

Canvas depends on some system software components for importing and exporting certain types of files, managing colors, and working with some graphics formats, such as QuickDraw 3D. The Canvas installer places some software, called “extensions” (Mac) or “Dynamic Link Libraries” (Windows), on your system, if needed. If Canvas can’t find the required component later, it’s possible the file was moved or disabled.

If you encounter a problem when starting Canvas, refer to the “Read Me” file and to the on-line Help system; these include the most up-to-date information on required software.

Overview of the Canvas interface

Canvas looks nearly identical on Mac OS and Windows systems. Depending on the operating system, a few items (including the menu bar and title bar) do look slightly different.

Some operations differ slightly on Mac OS and Windows systems, though the differences won’t surprise users who are familiar with each platform.

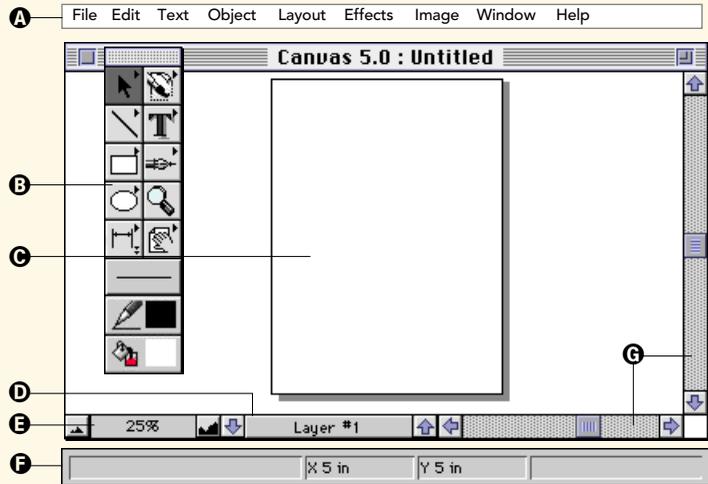
For example, Mac OS users should be aware that, to select a command, they need to press the menu name and drag into the menu without releasing the mouse button. Windows users should know that they can click the menu name and the command name, and don’t need to hold down the mouse button to choose a command.

A similar procedure carries over to the Canvas toolbox. On Mac OS systems, you should press (rather than click) an icon in the toolbox to open a toolbar or palette. On Windows systems, you can click or press an icon to open a toolbar or pop-out palette.

The Canvas interface

This illustration identifies the main parts of the Canvas interface.

- A** Menu bar
- B** Toolbox
- C** Illustration / Layout area
- D** Layer bar (appears only in illustration documents)
- E** Zoom bar
- F** Status bar
- G** Scroll bars



Specialized interface items

Canvas has three types of documents, illustrations, presentations, and publications; each has special properties and capabilities. Some Canvas interface items change when you switch from one type of Canvas document to another.

Layout area In illustration documents, the layout area represents the final page size. In publication documents, the layout area represents one page or two facing pages of the publication. In presentation documents, the layout area represents a slide shown on screen.

Page and Slide buttons When you work in a publication or presentation document, you'll see icons of pages or slides at the bottom of the document. The icons are buttons you can click to move through the document's pages or slides.

Slide buttons



Master slide

Page buttons



Master pages

Layer bar In illustration documents, the Layer bar at the bottom of the window lets you select and move among multiple layers. The Layer bar doesn't appear in publication documents, which don't con-

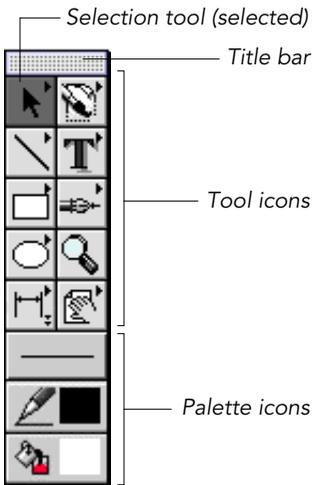
tain layers, or presentation documents. In presentation documents, you can use the Slide Info palette to work with the layers of a slide.

Using the toolbox

The toolbox is a floating palette you can place anywhere on screen. When Canvas starts, the toolbox is on the left. To move the toolbox, drag its title bar. Selecting tools from the toolbox

The toolbox displays 10 tools at a time, and it contains more than 40 tools for drawing, painting, creating objects, editing, and viewing. The tools that aren't displayed are on toolbars that pop out from the toolbox.

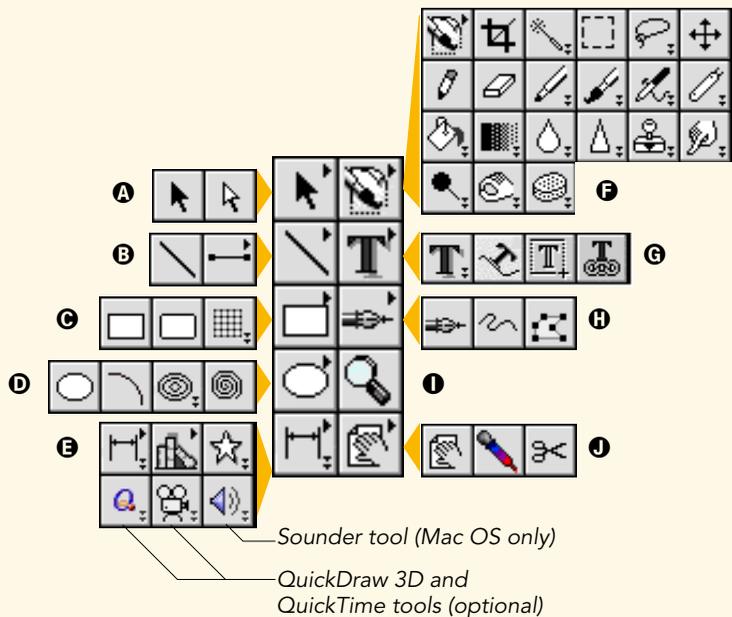
- ◆ **To select a tool displayed in the toolbox:** Click the tool. The selected tool becomes shaded, like a recessed button.
- ◆ **To select a tool from a toolbar:** Press the displayed tool at the toolbar location and drag to the tool you want to select on the toolbar. The selected tool appears in the toolbox.
- ◆ **To bring the toolbox to the front or display the toolbox (if closed):** Choose Palettes>Toolbox in the Window menu.

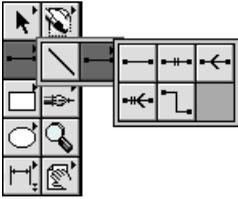


Tools in the toolbox

Most Canvas tools appear on toolbars that pop out from the toolbox. The current tool from each toolbar is visible in the toolbox.

- A** Selection tools
- B** Line tools
- C** Rectangle tools
- D** Oval tools
- E** Object tools
- F** Paint tools
- G** Text tools
- H** Path tools
- I** Magnifying glass tool
- J** Effects tools





This toolbar holds six types of Smart Lines tools.

The dimensioning and Smart Lines tools have their own toolbars. One dimensioning tool is displayed in the Object tools toolbar; you press this tool icon to open the toolbar containing all the Dimensioning tools. One Smart Lines tool is displayed in the Line toolbar; you press this tool to open the toolbar containing all the Smart Lines tools.

During a work session, Canvas displays the tool you selected last at each spot in the toolbox. For example, if the eraser was the last paint tool selected, Canvas displays the eraser at the upper-right corner of the toolbox, at the Paint toolbar location.

Each time you start Canvas, the program returns the toolbox to its default arrangement of tools.

Using palettes

The three icons at the bottom of the toolbox open palettes for applying inks and strokes. The palettes contain attributes such as colors, dashes, and patterns, which are grouped on tabs within the palettes.



Strokes palette

Pen Ink palette

Fill Ink palette

To open a palette, press the icon. To select attributes in the palette, drag to the item you want to select. To switch tabs, drag to the tab you want to use. If some attributes aren't visible in the palette, drag to the scroll bar on the right to display more.

You can also drag a palette away from the toolbox to keep it open while you work. When a palette is separated from the toolbox, you can use the palette's configuration manager to create custom colors, patterns, textures, and other attributes.

When palettes are floating (detached from the toolbox), you can handle them the same as other windows. To move a palette, drag its title bar. To roll up a palette, double-click its title bar (Mac) or click the box at the right end of the title bar (Windows).

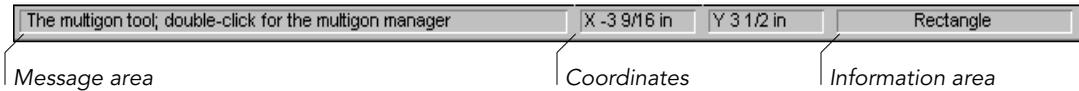
You can use menu commands to arrange palettes and clear them off the screen all at once.

- ◆ **To roll up all palettes:** Choose Palettes►Clean Up Palettes in the Window menu. All open palettes roll up and move to the upper-right corner of the screen.

- ◆ **To close all palettes:** Choose Palettes►Put Away Palettes in the Window menu. Canvas closes all the open palettes.

Using the status bar

The status bar is at the bottom of the screen (Mac OS) or the bottom of the Canvas program window (Windows). The status bar provides information about commands, tools, objects, and program operations.



Message area

The message area displays tool names, tips, and status messages. When you move the pointer over a tool icon or other item, the message area shows the tool's name and function. You can use this feature to take a tour of the Canvas tools and interface.

When Canvas performs certain actions, such as saving a document, Canvas displays a progress bar in the message area.

Coordinates data

When you move the pointer, draw, resize, or rotate objects, the status bar displays measurement and position information in the coordinates area. You can change the unit of measurement for this data using the Rulers command in the Layout menu.

If you set up a drawing scale, the data displayed in the coordinates area conform to the drawing scale. For example, if you set the drawing scale to 1 centimeter = 1 meter, and you draw an object that measures 5 centimeters by 5 centimeters on screen, the coordinates area displays: *W 5 m H 5 m*.

Depending on whether you are drawing or resizing objects or moving the pointer or objects, the coordinate area displays either dimension data or the pointer position.

Dimensions As you drag the pointer to draw or resize objects, in most cases the status bar displays the width (W) and height (H) of the object's bounding box. As described in the following table, Canvas displays different data for resizing or drawing special objects, such as lines and rounded rectangles.

Pointer position When you move the pointer, the status bar shows the position of the pointer. The horizontal (X) coordinate is the distance horizontally from the ruler's zero point; the vertical (Y) coordinate is the distance vertically from the ruler's zero point. When you

move objects, Canvas displays the change in position from the original X and Y coordinates.

The following table summarizes the data displayed in the status bar.

When you do this	The status bar displays this
Move the pointer in the document	The pointer's horizontal and vertical distance from the ruler's zero point
Drag an object in the document	The horizontal and vertical distance from the starting point
Rotate an object	The angle of the top of the object's bounding box
Draw or resize a line	The length and angle of the line
Create paint images and most draw objects	The height and width of the object's bounding box
Resize an object (except a line) or group	The height and width of the object's bounding box
Drag an arc's circular handle	The position of the arc's endpoint relative to the current coordinate system and the degrees traveled by the arc relative to its starting point
Drag a rounded rectangle's circular handle	The corner's radius
Draw with the Curve or Polygon tool	The pointer's horizontal and vertical distance from the ruler's zero point
Drag an anchor point of an object in edit mode	The pointer's horizontal and vertical distance from the ruler's zero point

Information area

When you select an object, the information area displays the object type. When you select more than one object, this area displays the number of selected objects. If you select objects that are grouped, the information area displays "Group of n objects," where n is the number of objects.

When a single object is selected, press the pointer on the information area to open a pop-up menu showing the height, width, area, and perimeter of the object. To paste the data next to the object, choose a data item in the pop-up menu.

With a single object selected, press the information area to open a pop-up menu of basic dimension data.



When you select items in the information area's Data pop-up menu, Canvas pastes the data next to the selected object.



Perimeter = 5.50 in
Area = 1.75 sq. in
Height = 1.00 in
Width = 1.75 in

Undoing, redoing, and repeating actions

You can easily correct mistakes, restore your work to an earlier state, and repeat commands using the Undo, Redo, and Again commands.

◆ **To cancel the last change that you made:** Choose Undo in the Edit menu. You can choose Undo multiple times to cancel prior changes in reverse order.

You can tell Canvas how many changes you want to be able to cancel with the Undo command. Initially, the number of Undo levels is set to 10. Because Canvas uses memory to keep track of changes you make in a document, you should use the lowest possible number of Undo levels if you are trying to conserve memory. See “General Canvas preferences” on page 85 for information on setting the number of Undo levels.

Not all actions can be canceled with the Undo command. Actions that can not be canceled include scrolling; closing or reverting to an earlier version of a document; selecting and deselecting objects; deleting settings in palettes; and saving documents.

◆ **To restore actions you canceled using Undo:** Choose Redo in the Edit menu. You can choose Redo multiple times to reinstate canceled actions in reverse order.

◆ **To repeat a command or other action:** Choose Again in the Edit menu. When an action can be repeated, the Repeat command includes the name of the action. For example, after you rotate an object, the Again command appears as “Rotate Again.”

Not all actions can be repeated. The Again command isn't available if the previous action can't be repeated.

DOCUMENT BASICS

Canvas documents are the containers for your work. A Canvas document can accommodate vector drawings, text, and raster images for all types of illustrations, publications, and presentations.

This chapter describes the basics of working with Canvas documents, including how to open, save, view, and print them.

Opening Canvas documents

You use the Open command to open Canvas 5 documents stored on disk. For information on opening files created by other programs and earlier versions of Canvas, see the chapter “File and data exchange” on page 57.

To open a Canvas document

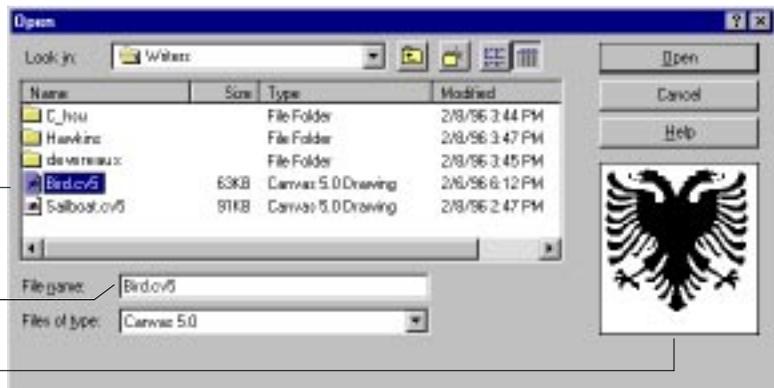
- 1 Choose Open in the File menu. Canvas displays a standard dialog box for you to select a document file. By default, the dialog box lists the names of Canvas 5 documents in the current directory.
- 2 In the file list, select the document you want to open and click Open. Canvas displays a preview if the selected document contains a preview. For Mac OS, Canvas previews require that QuickTime extensions be installed; see “QuickTime file previews (Mac only)” on page 60.

Open dialog box (Windows 95)

Select a file

Or, type a file name

Preview image (if available)



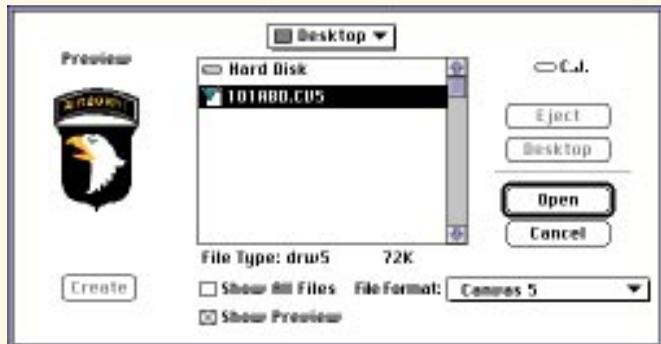
Open dialog box (Mac)

You can select files in the scroll list and see a preview of the selected file (previews are displayed only if QuickTime is installed).

You can also use the Show All Files option to see all files in a folder in the scroll list, even if Canvas can't open the file. This is different from the "All" setting in the File Format pop-up menu, which lets you see all files that Canvas can open.

If you highlight a QuickTime movie or Sound file in the scroll list, the preview area lets you play a movie or sound preview.

In addition, the button below the preview area lets you man-



age preview images.

- When the button says Create, you can make a preview for a file that doesn't have one. To create previews, you must have the appropriate Claris XTND Translator installed on your system; see "XTND file fil-

ters" on page 60.

- When the button says Update, this means the file and its preview are not consistent. You can click the Update button to refresh the preview so it matches the file.

1 C:\Documents\Floor1.cv5
2 C:\March\Orgchart.cv5
3 D:\Bob\Plotplan.cv5
4 C:\Canvas\Map.cv5

Documents opened recently are listed in the file menu.

◆ **To open a document you worked with recently:** Choose the document name from the list of recently opened documents in the File menu.

If you need additional help working with files, folders, and directories, refer to your Mac OS or Windows documentation.

You can open more than one document at a time in Canvas. When you open a document, Canvas loads the document into your system's memory. You need to have enough memory available to hold the document's contents. Documents that contain many complex objects, or large high-resolution images, require more memory than simple documents containing a few vector objects.

When you work with a document, changes you make to the document are not saved until you use the Save or Save As command.

◆ **To start Canvas and open a document simultaneously:** Double-click a Canvas document icon in a folder or directory on your system. The program starts and the document opens.

Opening non-Canvas files

Canvas includes filters that let you open many types of graphics and text files. In the Open dialog box, the Format (Mac) or “Files of type” (Windows) pop-up menu lists the supported file types. You can use the Open and Place commands to import these files. For more information, see “Using non-Canvas file formats” on page 58.

Substituting fonts when opening documents

If a document you open uses fonts that aren’t available on your system, Canvas displays a dialog box before opening the document. You can use the dialog box to review which fonts are required by the document and to select substitute fonts, or you can let Canvas select substitutes.

- 1 Select a font listed under Original Font, or Shift-click to select multiple fonts. This is a font specified in the document that now isn’t available.
- 2 Choose a substitute font in the pop-up menu. The name of the font appears in the list under Substitute Font. Canvas displays the font name in its corresponding type face so you can preview the font substitution.
- 3 Turn on Permanent Change to replace the missing fonts with the fonts you choose in this dialog box.
- 4 After you select substitutes for the missing fonts, click OK to open the document. To cancel the changes, click Clear Changes to let Canvas choose a substitute and open the document.

Select a font for which you want to specify a substitute

Turn on to permanently replace the missing font



Choose substitute fonts here

Opening documents that require specific tools

When you open a Canvas document that depends on one or more external tools to display and print correctly, Canvas alerts you if the necessary external tools aren't available. To load the required tools, quit Canvas, restart Canvas, and press the Spacebar to open the ToolPicker dialog box. Select the tools you want, or click All Tools.

Placing documents

You can use the Place command to incorporate a document stored on disk into an open Canvas document. For example, you can place a document containing your company logo within a document in which you are preparing a sales brochure.

The Place command lets you visually set the location and dimensions of the incorporated document. If the document that you place has more than one layer, you can choose which layers to place.

The Place command isn't available if no documents are open.

To place a document in an open Canvas document

- 1 Choose the Place command in the File menu.
- 2 In the directory dialog box, select the document that you want to place and click Place. (If the file contains multiple layers that Canvas can import, the Place Options dialog box opens; see below.)
- 3 Position the Place cursor in the open document where you want the top-left corner of the placed document to be.
- 4 To place the document at full size, click the place icon. To set the dimensions of the placed document, drag to create a bounding box for it.



The place cursor

Place Options dialog box

Placing a file with multiple layers opens this dialog box.

Place on current layer. Select to flatten the layers and place them on the current layer.

Place on new layer(s). Select to place each layer on a new layer in the current Canvas document.

Layers. Click to choose specific layers to place. In the dialog box that opens, Shift-click two layers to select a range, or Command-click (Mac) or Ctrl-click (Windows) to select specific layers. Click OK to close the Layers dialog box.

Click OK to close the Place Options dialog box and place the file. If Show Place Cursor is



on, position the Place cursor and click or drag to complete the operation.

Using Canvas clip art

The Canvas clip art collection is stored in Canvas documents on CD-ROM. You can use the Open command to open a clip art document for editing, or use the Place command or Gallery tool to insert a clip art graphic into an open document. For details, see “Adding clip art to Canvas documents” on page 120, “Opening Canvas documents” on page 17, and “Placing documents” on page 20.

Because it is a locked storage medium, you can't save documents on a CD-ROM. If you open a document from the CD-ROM and want to save an edited version, you can store it elsewhere using the Save As command. You can also copy files from CD-ROM to a hard disk so you can work with them without having the CD-ROM loaded.

Saving Canvas documents

The Save and Save As commands store a document on disk.

- The Save command updates a document file on disk and overwrites the previously-stored version.
- The Save As command lets you create a new file on disk from an open document, save documents as templates, and use other graphics and text file formats.

When you use these commands, the default format for storing documents is the native Canvas 5 format.

To save a new Canvas document

- 1 Choose Save As in the File menu. A directory dialog box opens.
 - 2 Select a location to store the document and type a file name.
 - 3 Click Save to store the document on disk.
- ◆ **To save changes to a document as you work:** Choose Save in the File menu to update the document file on disk.
 - ◆ **To save a document with a different name or in a new location:** Choose Save As in the File menu, type a new name or select a new location in the directory dialog box and click Save.

✓ Important

To avoid losing your work in the event of a power failure or system failure, use the Save command frequently as you work to store changes on disk.

Saving selections and layers

If you want to save particular objects or layers as a new document, you can use the Save As command and options in the Save directory dialog box, shown below.

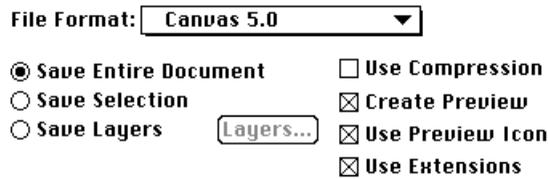
Options for saving Canvas documents

In the Save dialog box, you can tell Canvas to save an entire document or only some objects or layers.

Save Entire Document. The default setting tells Canvas to save a complete document.

Save Selection. Choose this option after you select the objects in the document that you want to save as a new document. If you don't select anything, this option is not available.

Save Layers. Select this option to save one or more layers in a new document. Then,



click Layers to specify which layers to save. This option isn't available if the document has only one layer.

Use Compression. Check this box to reduce the size of files saved on disk.

Create Preview (Mac) or Save Preview (Windows). Turn on this option to save a low-resolution preview of the document. In applications that sup-

port previews, you can see a thumbnail image of the document before opening the file.

Use Preview Icon. Canvas creates a finder icon (Mac OS only) with a preview of the document if you select this option.

Use Extensions (Mac). Adds a three-character filename extension. Use this if you use Mac files on Windows systems.

Reverting to the saved version of a document

The Revert command lets you discard changes made to a document since it was last saved. This is the same as closing the document without saving changes and then opening the original from disk.

Be certain that you want to discard all changes to a document before choosing the Revert command, because you cannot use the Undo command to restore your work after using the Revert command.

Keep in mind that you can use the Save As command to save a document with a new name. If you are not certain that you want to discard changes to a document, use Save As to store a new version on disk, then open the original document and compare the two.

◆ **To revert to a document's saved version:** Choose Revert in the File menu. Before performing the command, Canvas asks you to confirm that you want to discard all changes.

Closing documents



Close box

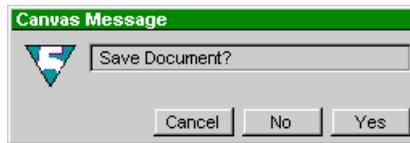


Close button

When you close a document, Canvas removes the document window from the screen. When you close a document, Canvas doesn't save the document, although Canvas will warn you if you try to close a document that has changed.

◆ **To close a Canvas document:** Choose Close in the File menu. You can also click the Close box (Mac), or the Close button (Windows) in the document's title bar to close the document.

If you try to close a document that hasn't been saved, Canvas asks if you want to save it. To save, click Yes. To close it without saving, click No. To keep working, click Cancel.



Working with document windows

Each document you open appears in its own window. You can work with Canvas document windows the same as other windows. You can resize a window, expand it to fill the screen, and minimize or roll it up. Canvas provides commands to organize and select document windows when more than one is open.

Selecting among open documents

When you open several documents at once, only one is active. The Window menu displays the names of open Canvas documents. The name of the active document has a check mark.

◆ **To make a document the active window:** Choose the document's name in the list at the bottom of the Window menu. You can also click a document's window to make the document active.

When you open more than one document, information in the status bar, such as the pointer's location, applies to the active document. The same is true of floating palettes; palette settings apply to the active document and they change when you switch documents.

Minimizing and maximizing windows

Window controls differ under Mac OS and Windows, and both operating systems offer more than one way to resize windows. For more information, refer to your system documentation.



WindowShade control panel set to two clicks (Mac only).



A minimized window icon (Windows) with Restore, Maximize, and Close buttons.



Zoom box



Maximize button

To minimize and restore a window

Mac To minimize a window, double-click the window's title bar; the window rolls up so only its title bar is visible. To restore the window, double-click the title bar again.

Note: This method depends on the setting in the WindowShade Control Panel in System 7.5. If the setting in the control panel is different than two clicks, the procedure differs. If the control panel isn't installed, you might not be able to roll up windows.

Windows Click the Minimize button  in the window's title bar. The window shrinks to an icon at the bottom of the Canvas program window. To restore the window, click the Restore button.

To maximize a window

Mac Click the Zoom box in the title bar at the upper-right corner of the window.

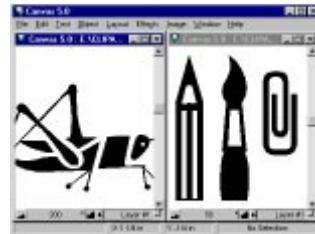
Windows Click the Maximize button in the window's title bar.

Arranging windows

When you open more than one document window, you can stack or distribute them on screen so they are easier to work with.



Stack



Tile Across



Tile Down

When Canvas arranges document windows, it resizes them if necessary so they fit within the main program window or screen area.

- ◆ **To stack all windows so their title bars are visible:** Choose Stack in the Window menu.
- ◆ **To arrange windows in rows:** Choose Tile Down in the Window menu.
- ◆ **To arrange windows in columns:** Choose Tile Across in the Window menu.

- ◆ **To arrange windows in a grid:** Choose Tile in the Window menu.
- ◆ **To arrange icons of minimized windows (Windows):** Choose Arrange Icons in the Window menu.

Viewing documents

This section describes how you can adjust your view of a document. Viewing options in Canvas let you

- control when Canvas redraws objects
- scroll to any area with the Hand tool or scroll bars
- increase or decrease the view magnification
- restore any view magnification and location
- display wireframe and process-color views

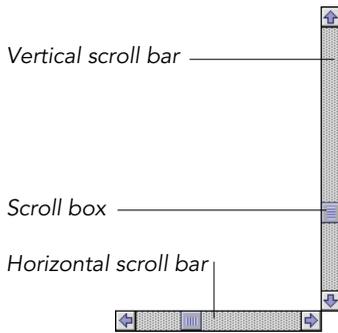
Controlling when Canvas refreshes the display

Canvas refreshes the display, which redraws all visible objects, when you scroll or change magnification. When you work with complex images, you can interrupt the redraw to save time, then refresh the display when you're ready.

- ◆ **To interrupt display redraw:** Press Command+Period (Mac) or Esc (Windows) during normal redraw.
- ◆ **To refresh the display:** Choose Display►Refresh in the Layout menu. You can refresh the display after interrupting the normal redraw or when artifacts disrupt the display.

Scrolling documents

You can use scroll bars or the Hand tool to move to areas of a document that aren't displayed in the document window.



Using scroll bars

Document scroll bars represent the full document area. The position of the scroll box within a scroll bar indicates the current view area.

To scroll using scroll bars, do one of the following:

- Click one of the arrows to move in the arrow direction.
- Drag the scroll box toward the part of the document you want to see. For example, drag up to see more of the top.
- Click the scroll bar to scroll one screen length toward the side of the scroll box that you clicked. For example, click to the right of the scroll box to move one screen to the right.

Using the Hand tool



Using the Hand tool to scroll a document is like sliding a piece of paper on a desktop.

To scroll with the Hand tool

- 1 Select the Hand tool from the toolbox. The pointer becomes a hand.
- 2 Drag to make the document follow the pointer. For example, to move a document up so you can see the bottom, drag toward the top of the screen.

Changing the view magnification

Canvas lets you change your view of a document by changing the view magnification. You can use the Magnifying Glass, Zoom bar, Zoom palette, and Zoom commands to enlarge and reduce the view. Changing magnification changes the appearance on screen, but doesn't change the actual size of anything in the document.

Select a zoom method based on what you want to do:

- To step to the next preset magnification level, use a Zoom command or a Zoom button on the Zoom bar.
- To select an area to magnify, use the Magnifying Glass.
- To set a specific magnification level, use the Zoom palette.

You can use magnification levels from 3 to 3,200 percent; normal magnification is 100 percent.

◆ **To use menu commands to zoom in or out:** Choose Views►Zoom In or Zoom Out in the Layout menu. Zoom In

Tip

To quickly and temporarily switch to the Hand tool while using another tool, press the Spacebar and drag with the hand pointer.

increases magnification to the next higher preset level; Zoom Out decreases magnification to the next lower preset level.

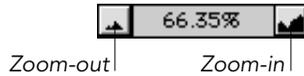
Using the Zoom bar and Zoom palette

You can use the Zoom bar, at the bottom left of the document window, to adjust the view magnification. The zoom bar

- displays the current magnification
- changes magnification in preset increments
- opens the Zoom palette

◆ **To zoom to the next preset magnification level:** Click the Zoom-in or Zoom-out button on the Zoom bar. The Zoom-in button increases magnification and narrows the view. The Zoom-out button decreases magnification and widens the view.

◆ **To select any magnification percentage:** Press the center of the Zoom bar and drag the slider in the Zoom palette. The box at the lower left shows the magnification level percentage.

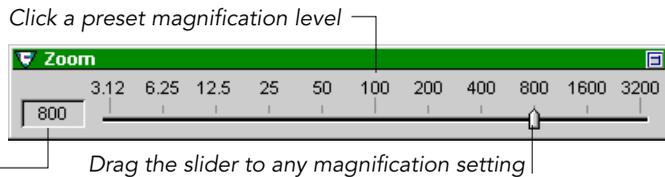


✓ Tip

To quickly magnify an object, select the object and click the Zoom-in button.

To keep the Zoom palette open while you work, drag it away from the Zoom bar.

Current magnification percentage



✓ Tip

To quickly change the view magnification, Option+Tab-click (to zoom in) or Option+Tab-Shift-click (to zoom out) (Mac). Or, press Option+Command+Plus (Mac) or Ctrl+Alt+Plus (Win) to zoom in, or Option+Command+Minus (Mac) or Ctrl+Alt+Minus (Win) to zoom out.

If you drag the Zoom palette away from the Zoom bar, it stays open and you can click the preset magnification levels or click anywhere on the slider bar. For example, click the slider bar between 50 and 100 to set the magnification level to approximately 75 percent.

Magnifying specific areas

You can use the Magnifying Glass to zoom in and out from an area that you select in the document.

- 1 Select the Magnifying Glass in the toolbox. The pointer becomes a magnifying glass with a plus sign.
- 2 Click the center of the area you want to magnify. Canvas zooms to the next higher preset magnification level and centers the view at the point you clicked.

3 To reduce rather than magnify, Shift-click the area you want to center on screen at reduced magnification.

◆ **To magnify an area to fill the screen:** With the Magnifying Glass tool, drag a box around the area you want to magnify.

Using preset and custom views

A view in Canvas stores a magnification level and location within a document so you can return to it later. You can use preset views and create your own custom views. Preset and custom views appear in the Views submenu in the Layout menu. Canvas puts a check mark next to the name of the current view.

◆ **To select a view:** Choose Views►*View Name* in the Layout menu, where *View Name* is a view listed in the Views submenu.

Preset views

You can select two preset views: Home View and Fit to Window.

Home view Displays the upper-left corner of the document at normal (100 percent) magnification.

Fit to Window Reduces or increases magnification to the maximum magnification level at which the document fills the window.

Custom views

You create custom views based on the current magnification level and position of the document in the Canvas window. After you create a custom view, you can select it the same as a preset view.

◆ **To create a custom view:** With the document's magnification and position set, choose Views►New View in the Layout menu. Type a name for the view in the dialog box and click OK.

To remove a custom view

1 Choose Views►Delete View in the Layout menu. If only one custom view exists, Canvas deletes it.

2 If more than one custom view appears in the Views submenu, the Delete Views dialog box opens. Select a view and click OK. Canvas removes the selected view from the Views submenu.

Changing display modes

In Canvas, the normal display mode shows illustrations and text with the inks, strokes, and other attributes as they are in the document.

New View... Delete View
Zoom In Zoom Out Fit to Window
✓ Home View Page Center

Canvas lists custom views under Home View in the Views submenu.

Canvas also provides three special-purpose display modes: Wireframe (described below), Gamut Warning, and CMYK Preview. Gamut Warning and CMYK Preview are useful for determining whether placed or imported RGB graphics will print correctly when using process color separations.

The Gamut Warning display mode analyzes the colors in the current document and highlights colors that are outside the CMYK gamut. You can select the gamut warning color using the Calibration►Gamut Warning command in the Edit menu.

The CMYK Preview mode approximates the appearance of RGB colors if you print them using CMYK process color separation. For example, some bright RGB colors might appear more muted in CMYK; Canvas simulates this appearance.

Wireframe display mode

Wireframe mode is useful because it accelerates scrolling and redraw and lets you view objects without stroke and ink attributes.

◆ **To use Wireframe mode:** Choose Display►Wireframe in the Layout menu. Canvas puts a check mark next to the command when this mode is active. To return to normal display mode, choose Display►Wireframe again.

In Wireframe mode, Canvas displays attributes as the following:

This attribute	Is displayed as
Stroke (object outlines)	1-point, solid black pen
Fill and pen ink	not displayed
Colors	not displayed

Desktop printing

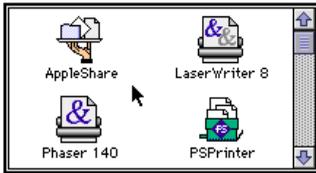
Canvas works with all standard desktop printing devices, including PostScript and non-PostScript printers. You can print Canvas documents using black-and-white or color devices.

This section focuses on the basics of printing to desktop printers. It describes how to select a printer and set printing options.

For information on additional printing options and special printing situations, refer to the Canvas on-line Help system.

Selecting a printer and printer options

The first time you print from Canvas, you might need to select a printer and configure printing options. This section describes how to do this for Mac OS and Windows.



Printer drivers in the Chooser

Page setup for Mac OS

- 1 Select Chooser in the Apple menu. In the dialog box, select the printer driver that you want to use. PostScript drivers, such as LaserWriter 8 and PSpriinter, work only with PostScript printers.
- 2 Select an available printer. If you are connected to a network, you might need to select a zone first and then an available printer.

For information on setting up printing options and background printing, refer to your Mac OS and printer documentation.

- 3 In Canvas, choose Page Setup in the File menu. A dialog box appears with page setup options (shown on next page). The specific options in the dialog box might be different, depending on your printer driver.

Printer setup for Windows

- 1 Choose Printer Setup in the File menu. A dialog box appears (shown on next page); the specific options depend on your printer and printer driver.
- 2 Choose a printer and port in the pop-up menu, which lists printers installed for your system. If the printer you need is not on the list, use the Printers Control Panel to add it to the list.
- 3 If necessary, select an appropriate PPD (PostScript Printer Description) file. A PPD file contains setup information and options for PostScript printers.
- 4 For more options, click Setup. The available options depend on the printer driver you are using. Refer to your printer's documentation or click the Help button in the dialog box for more information.
- 5 Check the other settings and click OK.

Page Setup (Mac OS) and Printer Setup (Windows)

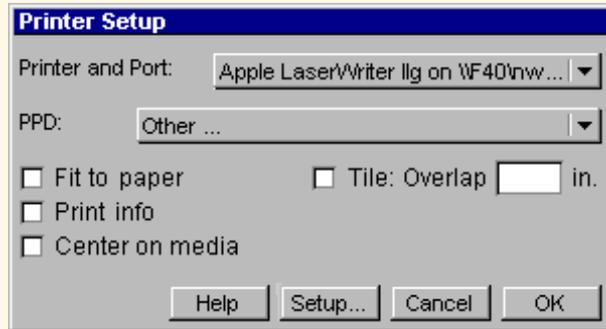
Before you print a document, check the settings in these dialog boxes. The available options at the tops of the dialog boxes differ for PostScript and non-PostScript printers and for specific printer drivers.

The **Fit to paper**, **Print info**, **Center on media**, and **Tile** check boxes are Canvas printing features that also appear in the Print dialog box; the settings in both locations always match each other. You can configure these settings here to see the impact on page breaks on-screen without having to print the document first. See “Arranging and scaling printed output” on page 35 for more information.

For more printer and page setup options, you can click the Options button (Mac) or Setup button (Windows). In the dialog that appears, the available options depend on the printer and printer driver.



Mac OS Page Setup dialog box



Windows Printer Setup dialog box

PostScript (LaserWriter) setup options

The following are options that you can set for PostScript printers in the Page Setup dialog box. Some of these options differ, depending on the printer driver you have selected. Using these options affects the printed output only; the original electronic document doesn't change.

Flip Horizontal Produces a mirror image of the on-screen document, so the document appears reversed from left to right on the printed page.

Flip Vertical Produces a mirror image of the on-screen document, so the document appears reversed from top to bottom on the printed page.

Invert Image Prints the opposites of colors in the document, so the output looks like a photo negative. For example, black objects will print as white, and colors will print as their complements.

Substitute Fonts Uses fonts installed in the printer instead of the fonts installed on the computer, when the same fonts (or fonts with the same name) are available on both.

Precision Bitmap Alignment Improves bitmapped graphics by reducing the image by 96 percent.

Unlimited Downloadable Fonts Reserves more memory in the printer for downloading fonts during printing.

Larger Print Area This option lets some printers print closer to the edge of the paper. You might want to experiment to determine if this setting has any effect on your printer.

Printing documents on desktop printers

Before printing a document, you can set up options such as the number of copies, which pages to print, printing to a file, and printing in color. You can also see a preview of the printed document.

To print an entire document

- 1 Choose Print in the File menu.
- 2 In the Print dialog box, select All for “Pages to print.”
- 3 In the Copies text box, type the number of copies to print.
- 4 Make sure all settings are correct and click Print (Mac) or OK (Windows). Canvas sends the document to the printer.

To print to a PostScript file

You can use a PostScript printer driver to print a document to a PostScript file. You might want to create a PostScript file so that you can print by sending the PostScript file to a printer, without using Canvas. Some prepress utilities also operate on PostScript printer files.

Keep in mind that you can't open or edit a PostScript printer file the same as you can a Canvas document. Also, you might need a utility program to send the file to a printer; check your system or printer documentation for information on downloading printer files.

- 1** Choose Print in the File menu.
- 2** In the Print dialog box, choose File in the Destination area (Mac) or check "Print to file" (Windows).
- 3** Review other options and make changes if necessary.
- 4** Choose a format for the file in the Images pop-up menu.
 - ASCII files are plain text files, which are the most compatible but also the largest types of printer files.
 - Binary files are smaller than ASCII files, but might not be compatible with all printers and networks.
 - "Level 2 ASCII" files are compatible with PostScript Level 2 devices and are somewhat smaller than regular ASCII PostScript files.
- 5** Click Save (Mac) or OK (Windows).
- 6** In the directory dialog box, select a location to store the file, type a file name, and click Save (Mac) or OK (Windows). Canvas generates and stores the PostScript file in the specified location.

Print dialog box settings

The following are options you can set in the Print dialog box.

A Choose All to print all pages, or type the first and last page numbers you want to print in the From and To boxes.

B Enter the number of copies.

C Choose what to print. The options depend on document type. For details, see “Printing selected parts of documents,” next.

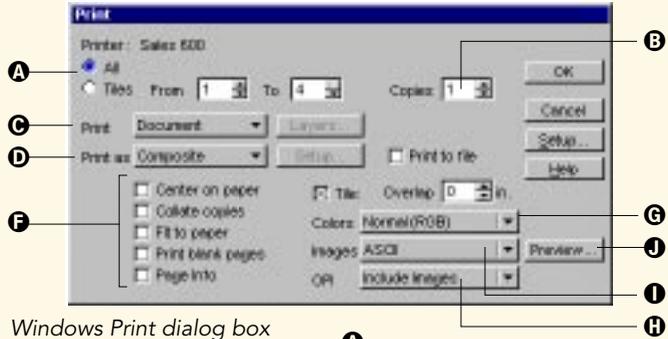
D Choose Composite for desktop printing of color or black and white documents.

E For presentations only; choose slides (full size), thumbnails (small size), or handouts (multiple slides per page, scaled to fit).

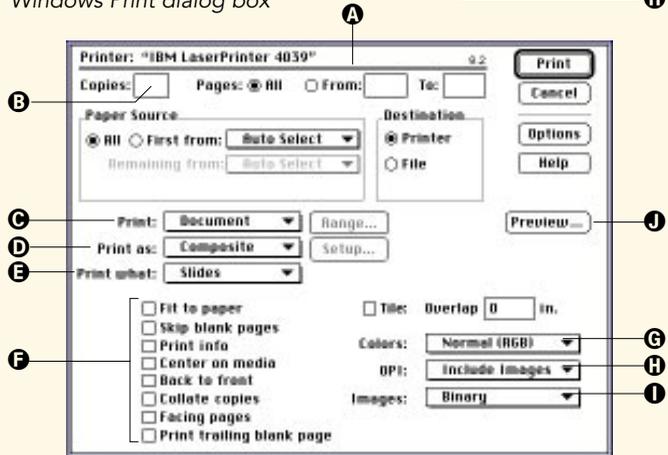
F Select printing options; see the following pages for details on these options.

G Select color options; see “Options for color printing,” page 36, for details.

H Select Include Images if you aren’t using an OPI image server.



Windows Print dialog box



Mac OS Print dialog box

I Select the image data format.

J Click to see a full-page on-screen preview before sending

the document to your printer. The preview shows the effect of the current Print settings.

Printing selected parts of documents

In the Print dialog box, you can choose what part of the document you want to print. Choose these options in the Print pop-up menu.

Document Prints the entire document.

Selection Prints only the selected items in the document.

Layers Available for illustration and presentation documents only, choose Layers to print specific layers. Click the Layers button to select which layers to print.

Page Range or Slide Range These options print any pages or slides. Click the Range button to specify which ones to print.

Current, Even, or Odd These options print the corresponding pages and slides.

Arranging and scaling printed output

At the time you print a document, you can tell Canvas how you want the document to appear on the paper. For example, you can scale a large document and center it on standard-size paper for proofing purposes. You can also tell Canvas whether to print colors, blank pages, and printer's marks, and to sort pages in normal or reverse order.

The following options are check boxes in the Print dialog box. If a check appears in the box, the option is active. Some options apply to specific document types only; these are noted in the descriptions below.

Fit to paper Scales a document to fit in the page's printable area. Canvas scales the document so that no objects fall into the margin (about 0.4 inch on each side) in which most printers can't print.

Skip blank pages When you print a large document as tiles on paper that is smaller than the document size, several pages might not contain any objects. Turn on this option to skip the blank pages.

Print info Prints crop marks, registration marks, file name, and other document details. Canvas prints the marks and information beyond the area occupied by objects in the document.

Center on media Moves objects to the center of the printed media. This option is useful when you have selected objects that you want to print in the center of the page, even though they might not be centered in the document.

Back to front Prints from last page to first, keeping pages in the correct order if the printer stacks pages face-up in the output tray (publication and presentation documents only).

Collate copies Prints all pages of the document in order for the number of copies requested, rather than printing all copies of page 1, then all copies of page 2, and so on (publication and presentation documents only).

✓ Tip

A Canvas illustration document contains only one “page,” although the document can be larger than the paper in your printer. To print the entire document, turn on the Tile option in the Print dialog box. Canvas will divide (“tile”) the document into a series of pages matching the paper size of your printer.

Facing pages If the document is formatted for spreads, Canvas prints facing pages on one page (publication documents only).

Print trailing blank page Prints a final blank page after every document (publication documents only).

Tile Tells Canvas to print large illustrations and documents in multi-page tiles. Because printers can’t print to the edges of the paper, you can type an overlap amount in the text box so you can assemble the pages. The Tile option must be turned on to print all of an illustration that is larger than a printer page.

If your illustration document is larger than the paper in your printer, turn on the Tile option in the Page Setup or Printer Setup dialog box. If this option is off and you display page breaks (with the Display ► Show Page Breaks command in the Layout menu), Canvas will display only one page on screen.

Options for color printing

By selecting a setting from the Colors pop-up menu in the print dialog box, you can tell Canvas how to print colors in the document. You should select a setting that matches the printer’s capabilities; if you mismatch this setting to your printer (for example, choose CMYK when you have an RGB printer), the colors might not be accurately represented in the printed output.

Normal (RGB) Sends colors to your printer using RGB color specifications. On a non-color printer, colors print as shades of gray, the same as if you select the “Colors as Grays” setting.

Black and White Prints colors as black or white. You might want to use this setting for desktop separation of solid spot colors.

Colors as Grays Prints colors in the document as shades of gray on all printers, including color printers. When printing to black-and-white printers, this is the same as if you select the “Normal” setting.

Calibrated (LAB) Matches printed colors to their appearance on-screen. However, some colors displayed on a computer monitor can’t be reproduced on paper with printing inks. For example, colors that look bright and saturated on screen, such as hot pink, cyan, and brilliant orange, might appear more muted in printed materials.

CMYK Sends colors to your printer using CMYK color specifications. On a non-color printer, colors print as shades of gray, the same as if you select the “Colors as Grays” setting.

DOCUMENT SETUP

When you create new Canvas documents, you select from three document types. You can then use document setup options to specify layout size, margins, orientation, and measurement units.

This chapter explains how to create new documents and how to set up columns, rulers, drawing scales, guides, and alignment grids.

Creating new documents

When you want to create a new document, you use the New command and tell Canvas to create an illustration, publication, or presentation document.

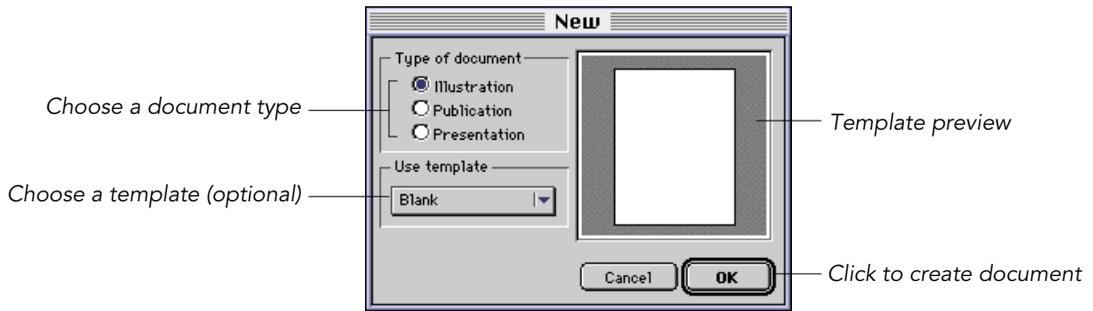
When you start Canvas, it creates a new document. The very first time, Canvas creates a blank illustration document. From then on, Canvas starts with the document type you selected when you last used the New command. If you also selected a template, Canvas uses the same template for the new document it creates at startup.

If you start Canvas by double-clicking a document icon, Canvas opens the document without creating a new document.

You can create new documents any time, even with other documents open. The number of documents you can have open at the same time depends on the amount of memory available on your system.

To create a new document

- 1 Choose New in the File menu.
- 2 In the New dialog box, select an option under “Type of Document.” For information, see “Choosing a document type,” next.
- 3 To use a template for the document, select the template in the Use Template pop-up menu. For information, see “Using document templates” on page 39.
- 4 Click OK. Canvas creates a new document with the name “Untitled” (Mac) or “New” (Windows) and a document number. If you selected a template, the document name is based on the name of the template.



Choosing a document type

When you create a new document, you can tell Canvas to make an illustration, publication, or presentation document. Each type of document offers unique features.

Illustration documents

Illustration documents are general-purpose documents for all types of illustrations and graphics. You can specify a custom document size and use multiple layers in illustration documents. This document type is similar to earlier versions of Canvas documents.



When the active document is an illustration, you can use the Layer bar at the bottom of the window to easily select and switch layers.

Publication documents

Publication documents are designed for multiple-page publications. You can set up one-sided or two-sided pages with page numbers, and use master pages to hold items that you want to appear throughout the publication.



When the active document is a publication, you can use page icons at the bottom of the window to move easily among the document's pages.

Presentation documents

Presentation documents are designed for on-screen “slide show” presentations. You can use multiple layers and a master slide to hold background elements. You can use more than a dozen transition effects, including wipe and dissolve, during slide show playback.



When the active document is a presentation, you can use slide icons at the bottom of the window to easily move among the slides.

Using document templates

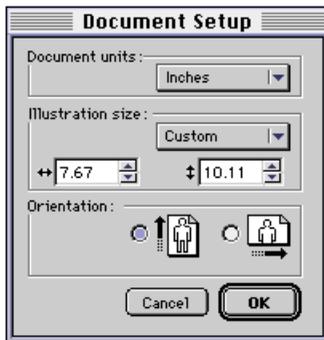
Templates are special Canvas documents that you can use as the basis for new documents. When you select a template in the New dialog box, Canvas creates a new document containing the graphics and text in the template and uses the template's settings for layers, slides, pages, rulers, grids, guides, views, and default object attributes.

How is a template different than a regular Canvas document? When you choose a template in the New dialog box, Canvas creates a new document based on the template, but doesn't actually open the template file. When you make changes to the new document and save it to disk, the changes don't affect the template.

Canvas treats a template in a similar way when you open one by double-clicking its icon or using the Open command. In either case, rather than open the actual template document, Canvas makes a new document based on the template's document type and contents.

Templates, like regular Canvas documents, come in three types: illustration, presentation, and publication. In the new dialog box, the templates listed in the "Use Template" pop-up menu match the document type selected in the "Type of Document" area.

Setting up documents



Document Setup dialog box for illustration and presentation documents

After you create a document, you can use the Document Setup dialog box to set the document's size, orientation, and other options.

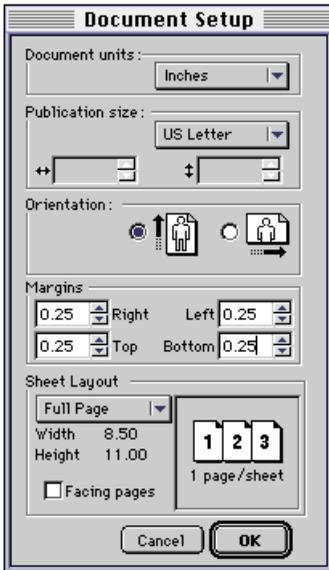
The Document Setup dialog box presents options based on the type of the current document. For example, in a presentation document, you can set the layout area to represent a particular screen size. In a publication document, you can set up page margins.

To set up an illustration or presentation

- 1 Choose Document Setup in the Layout menu. The Document Setup dialog box presents options for illustrations or presentations, depending on the current document type.
- 2 To change the measurement units used for the document, choose an option in the Document Units pop-up menu.

Tip

For illustrations or presentations larger than the current paper size, you can use the Display►Show/Hide Page Breaks command in the Layout menu to see or hide page divisions. A line around the layout area indicates page boundaries.



Document Setup dialog box for publication documents

Tip

To see or hide the printable area, you can use the Display►Show/Hide Printable Area command in the Layout menu. Canvas indicates the printable area by a line around the border of the page.

3 In the Illustration size (in an illustration document) or Screen size (in a presentation document) pop-up menu, choose the dimensions of the document or screen. To specify a custom size (or if you chose Printer Pages in the Document units pop-up menu), choose Custom and type the dimensions in the text boxes.

4 To change the orientation of the layout area, click the portrait or landscape option under Orientation.

5 Check to make sure all settings are correct and click OK.

To set up a publication

1 Choose Document Setup in the Layout menu. The Document Setup dialog box presents options for publications.

2 To change the measurement units used for the document, choose an option in the Document units pop-up menu.

3 Choose the size of the publication page in the Publication size pop-up menu.

- To specify a special size, choose Custom and enter horizontal and vertical measurements in the text boxes.
- You can divide the specified page area into multiple sections if you choose a multi-page layout option in Step 6.

4 To change the orientation of the layout area, choose portrait or landscape in the Orientation area.

5 To set margin size for two-sided publications, enter the Inside, Outside, Top, and Bottom margins in the boxes in the Margins area. For single-side publications, enter the Right, Left, Top, and Bottom margins. The margin is measured from the edge of the paper. On-screen, the margins appear as a dashed line around the border of the layout area. The printable area of the document appears as a solid line around the edge of the layout area. You should make sure the margins are not outside the printable area.

6 To specify multiple pages per sheet, choose an option other than Full Page in the Sheet Layout pop-up menu.

7 To create double-sided pages, turn on Facing Pages. When this option is on, the document has a left and a right master page that you can apply to its odd- and even-numbered pages.

8 Click OK to configure the publication.

Setting up rulers and the drawing scale

You can set up rulers for a document using various units of measure and display the rulers at the top and left of the document window. Rulers help you track the pointer's movement and let you create alignment guides in the layout area.

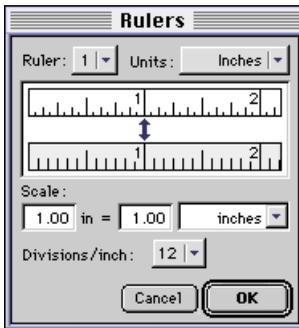
When you set up rulers, you also set the document's drawing scale. Canvas bases the rulers and all object measurements on the drawing scale.

For example, if you set the drawing scale to 1 inch = 1 foot, and draw a line 1 inch long on screen, Canvas displays the line's length as 1 foot. Canvas uses scale measurements in the Object Specs palette, the information area of the Status bar, and in dimension objects.

You can use inches, pixels, centimeters, and picas as a document's base unit of measurement. For the drawing scale, you can relate the base unit to inches, feet, miles, picas, pixels, metric units, and your own custom units.

To set up rulers and drawing scales

- 1 Choose Rulers in the Layout menu.
- 2 In the Rulers dialog box, choose a ruler number in the Ruler pop-up menu. You can use the default rulers or customize them.
- 3 To change the measurement units, choose the units in the Units pop-up menu. Canvas sets up the ruler's major divisions based on the units you choose.
- 4 Set the drawing scale using the two text boxes and the pop-up menu in the Scale area. The first value is the base unit measurement, the second value is its scaled equivalent. In the third box, enter the units for the scaled measurement. You can type a custom unit here; Canvas will use the first two letters ("au" for *astronomical units*, for example) in dialog boxes and dimensions.
- 5 The following table shows examples of settings for various drawing scales.



For this scale	Enter these values
1 inch = 6 inches	1 6 inches
5 inches = 1 mile	5 1 miles
10 cm = 1 meter	10 1 meters

- 6 Choose a setting for the ruler's minor divisions in the pop-up menu under the Scale boxes.
- 7 To establish the ruler's major divisions, drag the double arrow between the two rulers. Drag to the unit of the top ruler that you want to be the major division. The major division also determines the major division of the alignment grid.
- 8 After you configure all ruler settings, click OK.

To display and hide rulers

When you want rulers to appear on screen, choose Display►Show Rulers in the Layout menu. To hide the rulers, choose Display►Hide Rulers in the Layout menu. The rulers must be displayed if you want to create alignment guides in the layout area.

To change the rulers' zero points

The default zero point for each ruler is at the top-left corner of the illustration area. To change the zero point, drag from the intersection of the rulers. As you drag the zero point, intersecting lines follow the pointer. To return the rulers to the default zero point, click the box where the rulers intersect.

Setting up snap-to alignment

You can tell Canvas to make the pointer and any objects you drag “snap” into alignment with the grid, guides, or column guides in the layout area.

◆ **To snap to alignment guides and column guides:** Choose Snap To►Guides in the Layout menu. When the snap-to feature is active, objects you move seem to “stick” to the document's guides.

◆ **To snap to the alignment grid:** Choose Snap To►Grid in the Layout menu.

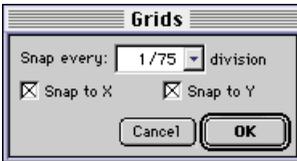
The procedures for setting up alignment guides, column guides, and the alignment grid are described in the following sections.

Using the alignment grid

You can display a grid of vertical and horizontal lines to aid in positioning objects in a document. You can also turn on the snap-to-grid feature to make Canvas snap objects into alignment with the grid when you drag near a grid line.

When snap-to-grid is active, the pointer movements snap to the grid according to the settings in the Grids dialog box.

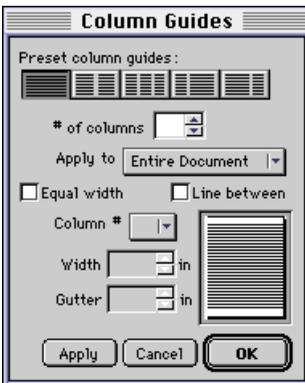
- ◆ **To display grid lines on screen:** Choose Display►Show Grids in the Layout menu. To turn off grids, choose Display►Hide Grids.
- ◆ **To turn on snap-to-grid:** Choose Snap To►Grid in the Layout menu. Choose the command again to turn off snap-to-grid.
- ◆ **To temporarily override the grid constraint:** Press Tab as you create, resize, or move objects.



To set up the alignment grid

- 1 Choose Grids in the Layout menu. The Grids dialog box appears.
- 2 Enter a snap interval in the “Snap every: division” text box. The interval can be a fraction of the main ruler divisions. For example, when rulers are set to one-inch increments, 1/2 creates grid lines every one-half inch.
- 3 Turn on “Snap To X” and “Snap To Y” to make objects snap to one or both sets of grid lines.

Using column guides



Column guides are lines that you can use to align columns of text in publication documents. You can tell Canvas to place guides evenly between the page margins for multiple columns. You can also customize the guides to set up columns of various widths on your pages. The Column Guides command is available only when the current document is a publication document.

Column guides can make it easier to position columns of text. When column guides are displayed, you can click the Text tool in a column and Canvas creates a text object within the guides.

To use preset column guides

- 1 Choose Column Guides in the Layout menu to open the Column Guides dialog box.
- 2 To use preset column guides, click one of the buttons at the top of the dialog box. The button symbols use greeked text to demonstrate the number of columns and the relative width of each column.
- 3 Click OK to implement the specified column guides.

To customize column guides

- 1 Choose Column Guides in the Layout menu to open the Column Guides dialog box.
 - 2 Enter the number of columns in the “# of columns” box.
 - 3 To tell Canvas to calculate the width and gutter spacing for columns of equal size, turn on the Equal width option.
 - 4 To set the width and gutter spacing for each column, turn off Equal Width and choose the column number in the Column # pop-up menu. Canvas numbers columns from left to right.
 - 5 Enter the column width in the Width box. Enter the width of the gutter (blank space to the right of the column) in the Gutter box.
 - 6 To place vertical rules in each gutter, turn on Line Between.
 - 7 To see the effect of the settings, click Apply. To make the settings permanent, click OK.
- ◆ **To show and hide column guides:** Choose Display►Show Guides or Display►Hide Guides in the Layout menu.
 - ◆ **To adjust a column guide:** Drag the column guide left or right in the document to reposition it and change the size of the gutter.

Using alignment guides

Alignment guides are horizontal and vertical lines you can place in a document to help align objects. These lines do not print. You can hide a document’s alignment guides without removing the guides. You can also simultaneously move a guide and objects that touch it.

To set up alignment guides

- 1 To display the document rulers, if they are hidden, choose Display►Show Rulers in the Layout menu.
 - 2 Point to either ruler and drag a guide into the document area.
 - 3 To remove a guide, drag the guide back to its ruler.
- ◆ **To show and hide guides:** Choose Display►Show Guides or Display►Hide Guides in the Layout menu.
 - ◆ **To move objects touching a guide:** Press Option (Mac) or Ctrl (Windows) as you drag a guide.

LAYERS, PAGES, AND SLIDES

Layers, pages, and slides are components of the three types of document you can create in Canvas:

- In illustration documents, you can use layers to arrange objects and organize separate levels of illustrations.
- In presentation documents, you can use slides and transition effects to create presentations.
- In publication documents, you can use master and body pages for single-sided and double-sided publications.

This chapter explains how to use layers, pages, and slides, including how to add, delete, arrange, lock, hide, display, and navigate among them. It also describes how to apply color overrides and lock items to prevent unwanted changes.

Features of layers, pages, and slides

This section describes how layers, pages, and slides apply to the three types of Canvas documents and the controls you can use when working with them. Later sections in this chapter provide details about configuring layers, pages, and slides, setting options, and designing slide shows.

Illustration layers

When you create an illustration document, the document has one layer. You can add as many layers as you want, limited only by available memory.

Layers are like transparent overlays that divide the stack of objects in a document. Layers are clear — a layer itself blocks nothing behind it. Objects, however, are not transparent. On a single layer, an object blocks whatever is behind it in the stacking order. With multiple layers, an object blocks other objects on any layer that is farther back in the stack of layers.

Layers can help you work more efficiently because you can perform operations on layers. You can hide, print, and save layers individually. You can use layers to hold different colors to produce simple

spot-color separations, or to keep text objects separate so you can hide artwork when you edit the text.

When you work in an illustration document, the following commands and options are available:

- Commands for displaying and switching layers appear in the Layers submenu in the Layout menu.
- The Layer Info palette lets you arrange layers and change layer settings.
- The Layer bar at the bottom of the document window lets you switch layers and open the Layer Info palette.

Presentation slides and layers

When you create a presentation document, the document has one master slide and one main slide. You can add as many additional main slides as you like, limited only by available memory.

You arrange slides and set up optional transition effects to create a slide show presentation. Slide shows can be self-running or operator-controlled. You can use the master slide to hold common elements that you want to appear in the background on most slides.

Each main slide can have multiple layers. During slide show playback, all visible layers can appear as one slide. Or, if you select the Progressive Build option in the Slide Show dialog box, each layer's contents can be added to the base image in sequence.

When you work in a presentation document, the following commands and options are available:

- Commands for displaying and switching slides and layers appear in the Slides submenu in the Layout menu.
- The Slide Info palette lets you arrange slides and layers and change their settings.
- You can use the slide icons and arrow buttons below the document window to navigate among the master and main slides. The icon representing the current slide is highlighted.

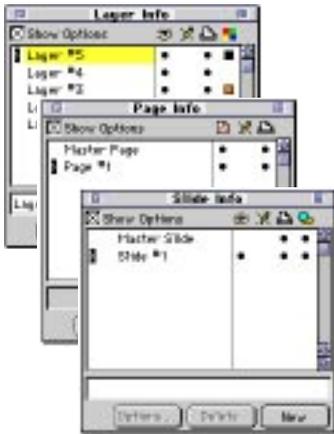
Publication pages

When you create a publication document, the document contains at least one body page and one master page, or two master pages (left and right) if you select Facing Pages in the Document Setup dialog box. Publication documents do not contain layers.

When you work in a publication document, the following commands and options are available:

- Commands for inserting, removing, and navigating among pages appear in the Pages submenu in the Layout menu.
- The Page Info palette lets you arrange pages and change their settings.
- You can use the page icons and the arrows at the bottom of the document window to navigate among the master and main pages. The icon representing the current page number is highlighted.

Setting up layers, pages, and slides



Layer Info, Page Info, and Slide Info palettes

You can use floating palettes to set up and work with layers, pages, and slides. The available palette depends on the type of document you are using. The Layer Info palette is available in illustration documents, the Slide Info palette is available in presentation documents, and the Page Info palette is available in publication documents.

The Layer Info, Slide Info, and Page Info palettes list a document's layers, pages, or slides. You can also add, delete, arrange, rename, and change options for these components in the appropriate palette.

To open the Layer Info, Page Info, and Slide Info palettes

Choose the appropriate command in the Layout menu to open the Layer Info, Page Info, or Slide Info palette:

- In illustration documents, choose Layers ► Layer Info to open the palette.
- In publication documents, choose Pages ► Page Info to open the palette.
- In presentation documents, choose Slides ► Slide Info to open the palette.

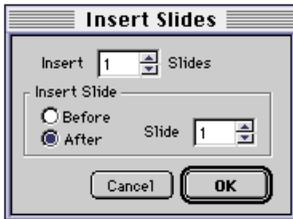
In illustration documents, you can open the Layer Info palette from the Layer bar. Press the bar at the bottom of the document window and drag the palette away from the bar.

◆ **To change the order of layers, pages, or slides:** Drag an item to a new position in the list in the info palette. Canvas does not rename items when you change their order in the list.

◆ **To rename layers, pages, or slides:** Highlight its name in the info palette list. The name appears in the text box at the bottom of the palette. Type a new name in the text box.

To create new layers, pages, or slides

To create a new layer, page, or slide, click New in the info palette. A new item appears in the list. Canvas names the new item with the next number in the sequence, for example, “Page #2.”



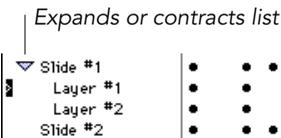
You can also create new pages or slides by using a menu command. Depending on the document type, choose Pages>Insert Page or Slides>Insert Slides in the Layout menu. In the dialog box, type the number of items you want to insert. Also, specify where you want Canvas to insert the new items, and then click OK. Canvas adds blank pages or slides to the sequence.

To add layers to a slide

When you click New in the Slide Info dialog box, Canvas adds a new slide to the presentation document. To add additional layers to a slide, use the Slide Options dialog box.

1 Select a slide name in the Slide Info palette and click Options, or double-click a slide name.

2 In the Layers box of the Slide Options dialog box, type the number of layers for the slide. A slide must have at least one layer. Click OK.



The names of slide layers appear indented under the name of the slide in the Slide Info palette. A triangle symbol next to a slide name indicates that the slide has multiple layers. Click the triangle to expand and contract the list when you want to show or hide layer names.

To remove layers, pages, or slides

To remove an item, highlight the name of the item in the info palette and click Delete.



You can also remove pages or slides using a menu command. Depending on the current document type, choose Pages>Delete Pages or Slides>Delete Slides in the Layout menu. In the dialog box that appears, specify the range of items to delete. The range can't include all slides or pages, because the document must contain at least one slide or page. Click OK to remove the items and their contents from the document.

Layer, page, and slide options

You can set options for layers, pages, and slides using the Layer Info, Page Info, and Slide Info palettes. For all document types, you can specify whether a component is printable or locked. Other options apply to specific document types.

The following table, “How options apply to layers, pages, and slides,” describes the available options, and which options can be applied to layers, pages, and slides. Most of these options can be activated or deactivated in the Layer Info, Page Info, and Slide Info palettes. Options can be configured in the Layer Options, Page Options, or Slide Options dialog box. Click the Options button in the info palette to open the dialog box.

How options apply to layers, pages, and slides

Option	Description	Use with
Visible	Must be on for a layer to appear on screen and in output	Layers
Grayed	Temporarily dims a layer on screen and makes it non-printing	Layers ¹
Locked	Prevents changes to any objects or properties. You can still select, copy, and see information about objects on a locked layer	Layers, Pages, Slides
Password	Prevents changing the lock option unless password is entered	Layers, Pages, Slides
Printable	Printable components are included in output when you print an entire document or a range of layers, pages, or slides	Layers, Pages, Slides
Color override	Temporarily applies a color you specify to all objects on a layer; original color information does not change	Layers ¹
Show master page	Applied to a body page, makes all items on the document's master page appear on the body page	Pages
Master slide visible	Applied to a main slide, makes all items on the document's master slide appear on the main slide	Slides
Transition to next slide	Applies effects, including dissolves, fades, wipes, and others, when changing from one slide to the next during a slide show	Slides

Note: ¹ You can use Grayed and Color Override options with illustration document layers, but not with layers in presentation documents.

Setting options in the Info palettes

By default, the Layer Info, Page Info, and Slide Info palettes show option settings for the items in the table “How options apply to layers, pages, and slides,” above. If you want to hide the option columns to view long layer, page, and slide names, uncheck the Show Options box.

Bullet symbols (•) indicate active options for each item in the list.

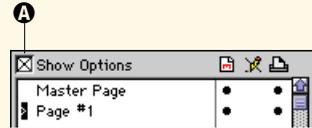
To turn an option on or off, click in the appropriate column to add or remove the bullet.

A Click here to show or hide option columns.

B Visible or Master slide visible. For a layer in the Layer Info or Slide Info palettes, turn on this option to make the layer visible. For a slide, turn on this option to make the master slide visible in the main slide.

C Locked. Turn on this option to protect an item from unwanted changes. A pencil icon indicates that the item is locked. A padlock icon indicates the item is also password-protected in the Options dialog box.

D Printable. Click this column to print the item.



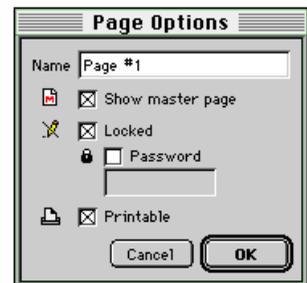
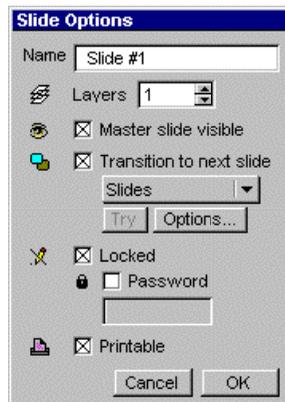
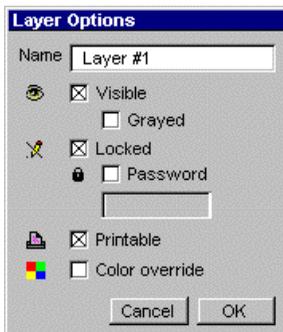
E Color override. Click this column to temporarily apply a color to all objects on a layer.

F Show master page. Click this column to make all items on the master page appear on the body page.

G Transition to next slide. Click here to add or remove a slide transition.

Using the option dialog boxes

To change an option for a layer, page, or slide, select the item in the list and click the Options button on the info palette to open a dialog box. You must use the options dialog box to configure the grayed, password, color override, and transition options.



You can use this method to set options for more than one item at once. To select multiple items, Command-click (Mac) or Ctrl-click (Windows) each item and then click the Options button on the info palette.

Details about the master page, master slide, color override, and slide transition options are in the next sections. For information about making layers visible or hidden, see “Showing and hiding layers” on page 53.

Using master pages and slides

Master pages and master slides can hold common elements that you want to appear on most pages or slides in your document. You can use one or two master pages in a publication document, depending on whether the document is single- or double-sided. In a presentation document, you can use one master slide.

Master pages

A publication document can have one or two master pages. To use two (left and right) master pages, you must first activate the Facing Pages option in the Document Setup dialog box. Objects on a master page appear on the corresponding body pages that use the master page.

In the Page Info palette, the left option column shows the master page setting. A bullet symbol in the column indicates that the associated master page contents will appear on the body page.

Master slides

In presentation documents, objects on the master slide appear on slides that use the master slide.

You can click the “Master slide visible” column in the Slide Info palette to turn this option on. You can also use the Slide Options dialog box to set the master slide option.

◆ **To apply the master slide to a main slide in the Slide Options dialog box:** Select the slide name in the Slide Info palette and click Options. In the Slide Options dialog box, turn on “Master slide visible.” To remove master slide objects from a slide, turn off this option.

Applying color overrides to layers

You can apply a color override to a layer in an illustration document to temporarily assign a color you specify to all objects on that layer.

When you remove a color override, all objects on the layer revert to their original colors.

Note: You cannot use color override for layers in a presentation document.

- 1 Open the Layer Info palette by choosing Layers►Layer Info in the Layout menu.
- 2 Select one or more layer names in the Layer Info palette and click Options.
- 3 In the Layer Options dialog box, turn on Color Override. A color button appears.
- 4 Press the color button and choose a color in the color tab.
- 5 Click OK in the Layer Options dialog box.

To remove a color override

Once you have specified a color override for a layer, you can remove the override and reapply it without having to reselect the color.

- 1 Open the Layer Info palette by choosing Layers►Layer Info in the Layout menu.
- 2 In the color override column (far right), click the bullet symbol on the row of the layer for which you want to remove the color override.

Specifying transitions for slides

Use the Slide Info palette and Slide Options dialog box to apply transition effects for on-screen slide shows.

When Show Options is on in the Slide Info palette, the transition option setting for each slide appears in the right column. A bullet in this column indicates that Canvas will use a transition when changing from the current slide to the next one. You can click the column to turn the transition effect off or on.

After you set up the slides and transitions in a presentation document, you can play the slide show using the Slide Show command in the Layout menu; see “Presenting slide shows” on page 55.

To select slide transitions

You can select from more than a dozen transition effects for slide shows.

- 1 Choose Slides►Slide Info in the Layout menu to open the Slide Info palette, if necessary.
- 2 Click the name of a slide in the slide list and click the Options button. You can also double-click the name of the slide. The Slide Options dialog box opens.
- 3 Check the “Transition to next slide” option and select a transition in the Transition pop-up menu.
- 4 You can click the Try button to preview the effect of the transition setting.
- 5 If the transition offers additional options, you can click the Options button in the Slide Options dialog box.

Showing and hiding layers

You can make any layer in an illustration or presentation document visible or hidden. A visible layer appears on screen and in output. Layers that aren’t visible don’t appear on screen and Canvas skips them when you print the document.

To make selected layers visible or hidden

- 1 Depending on the type of document, choose Layers►Layer Info or Slides►Slide Info in the Layout menu to open the appropriate info palette, if necessary.
- 2 With Show Options on, click in the column under the eye symbol to change the visible setting for a layer in the scrolling list. A bullet symbol in the column indicates that the item is visible. In presentation documents, make sure you click in the column next to a layer name; if you click in the column next to a slide, it changes the master slide setting, not the layer visibility.

When you select a hidden layer in the info palette, Canvas makes the layer visible again.

In illustration documents, when you use the Layer bar to choose a hidden layer, Canvas makes it visible.

Using the options dialog box to show or hide layers

You can change the visible setting for multiple layers using the Layer Options dialog box. However, you can’t turn off the visible setting for the current item in the Layer Options dialog box.

Important

You can’t turn off “visible” for the current layer (if you click in the “visible” column in the palette, nothing happens). To change the setting for the current layer, click another item to select it, then change the setting for the item you want.

- 1 Select multiple layers in the Layer Info or Slide Info palette by pressing Command (Mac) or Ctrl (Windows) and clicking layer names. You can select the current layer, but it won't be hidden if you turn the visible setting off.
- 2 Click Options, and then turn off the Visible option in the Layer Options dialog box. Click OK.

To show or hide all layers in an illustration document

You can use commands to make all layers visible, or to make all layers (except the current one) not visible.

- ◆ **To show or hide all layers:** Choose Layers►Show Other Layers in the Layout menu to display layers. Choose Layers►Hide Other Layers in the Layout menu to hide all layers except the current one.

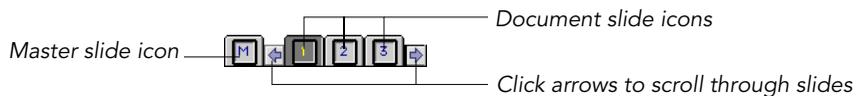
Navigating among layers, pages, and slides

In presentation and publication documents, a highlighted icon at the bottom of the document window indicates the current slide or page (or facing pages). In illustration documents, the name of the current layer appears in the Layer bar.

To change from one layer, page, or slide to another, you can use Layout menu commands, icons in the document window, and the Layer Info, Page Info, and Slide Info palettes

To navigate using the page and slide icons

To select the page or slide you want to go to, click the page or slide icon at the bottom of the document window. If the icon for the page or slide you want isn't visible, click the arrow at the left or right of the icons to move through the pages or slides. To go to the document's master page or slide, click the "M" icon.



To navigate using the info palettes

You can switch to other layers, pages, or slides using the Layer Info, Page Info, or Slide Info palettes. With the palette open, click the name of the item you want to go to.

To use the navigation commands

Navigation commands let you move to the next and previous layers and slides, or go to a specific layer, page, or slide. When you use a command to go to a hidden layer or slide, it becomes visible.

You can navigate by choosing the appropriate command, based on document type, in the Layout menu:

- ◆ **To change illustration layers:** Choose Layers►Next Layer, or Layers►Previous Layer to change layers. To go to a specific layer, choose Layers►*Name of layer*.
- ◆ **To go to a specific page:** Choose Pages►Go To Page. Type the page number in the dialog box and click OK.
- ◆ **To change presentation slides:** Choose Slides►Next Slide, or Slides►Previous Slide.
- ◆ **To go to a specific slide:** Choose Slides►Go To Slide, type a number in the dialog box, and click OK.
- ◆ **To change presentation layers:** Choose Slides►Next Layer, or Slides►Previous Layer.

To navigate using the Layer bar

In illustration documents, you can use the Layer bar at the right of the Zoom bar. The current layer name appears in the bar.

To switch to the next visible layer or slide, click the up-arrow at the right of the bar. To switch to the previous visible layer or slide, click the down-arrow at the left of the bar. You can also press Option (Mac) or Ctrl (Windows) as you click the up- and down-arrows to move to the next layer (whether it's visible or not) and simultaneously hide the layer you just left.

In addition, you can open the Layer Info palette from the bar. Press the bar and drag the palette away from the bar.

Presenting slide shows

You can display a presentation document as an on-screen slide show. Canvas can show slides using a time interval that you specify, or you can control the pace by changing slides manually.

You set up a presentation by first creating a presentation document using the New command in the File menu, then adding additional slides (and layers, if desired) using the Slide Info palette, as described in this chapter. You can also use the Slide Info palette to specify tran-

sitions between slides. For more information, see “Specifying transitions for slides” on page 52.

You can use the presentation document’s master slide for background objects and text. Use the Slide Info palette to apply the master slide to slides and to set the printable, locked, and password options for slides; see “Layer, page, and slide options” on page 49.



To configure a slide show

- 1 In a presentation document, choose Slide Show in the Layout menu. The Slide Show palette opens.
- 2 To play the slide show at the largest size possible on the current display device, turn on Fit To Screen.
- 3 To make the slide show start over after displaying the last slide, turn on the Loop option. Otherwise the slide show stops after the last slide.
- 4 To show a pointer on-screen during playback, turn Show Pointer on and select a pointer in the adjacent pop-up menu.
- 5 If you want Canvas to sequentially add the contents of visible layers to main slides, turn on Progressive Build. If Progressive Build is off, all visible layers appear at the same time on the main slide.
- 6 If a slide includes QuickTime movies, turn on “Auto-play QuickTime movies” to play the movie when the slide appears.
- 7 To make a slide show self-running, turn on “Advance Every x seconds,” and type the number of seconds to display each slide.

To play a slide show

- 1 Choose Slide Show in the Layout menu.
- 2 To start a slide show, click Play. If “Advance Every x Seconds” is on, Canvas displays the slides, using the specified timing. If the Loop option is also on, the slide show will repeat.

If the slide show is not self-running, click to advance one slide. Ctrl-click to go back one slide.

- 3 To stop the slide show, press Esc (Mac) or right-click (Windows).

FILE AND DATA EXCHANGE

Canvas supports all standard formats for exchanging files and data with other programs. This chapter explains how to use non-Canvas file formats, and how to share data using Publish and Subscribe (in Mac OS), and Object Linking and Embedding (in Windows).

Methods for sharing information

You have several options for sending graphics created in Canvas to other programs, and for using illustrations and text from other programs in Canvas. To exchange information, you can

- use a file format both applications support to exchange files
- copy and paste selected objects using the Clipboard
- create dynamic links to share objects between documents

Exchanging files

The Open, Place, and Save As commands let you work with many standard and proprietary file formats. With a common file format, you can bring a file generated in another program into a Canvas document, or transfer a Canvas document into another program.

Deneba Software often updates the file formats that Canvas supports, so you can work with the latest versions of the most widely-used formats. For the latest information, be sure to refer to the Canvas on-line Help system. To view the contents page for the Help system, choose Contents in the Help menu. On the Contents page, click the Release Notes topic for information about file format changes. You can also search for keywords, such as the name of a file format, to find the latest information in the Help system.

When you want to exchange files with another program, you should also refer to Read Me files and release notes from that program.

For general information on file formats and procedures for opening and saving files, see “Using non-Canvas file formats” on page 58.

Sharing information

Often, rather than just move a graphic, you want to share it among several documents, or create a link between the original and copies placed in other Canvas documents. For these types of data exchange, you can use Publish and Subscribe (in Mac OS) and Object Linking and Embedding (in Windows).

Publish and Subscribe lets you share information among Canvas documents and between Canvas and other applications. For details, see “Sharing information through Publish and Subscribe” on page 81.

Object Linking and Embedding (OLE) lets you create documents containing objects from various sources. You can link objects to the programs that created them and to the source objects themselves. For details, see “Using Object Linking and Embedding” on page 78.

Using non-Canvas file formats

Because the native Canvas 5 format saves all the objects, properties, and effects that Canvas documents can contain, you should save all your documents in Canvas 5 format. Still, you might want to export a document in a different format, or import graphics into a Canvas document from a non-Canvas file.

When you use a non-Canvas file, you can avoid problems, such as lost information and printing errors, if you know the capabilities and limitations of the file format. For example, some formats support only one type of data (vector, raster, or text), while others support multiple types.

Exporting to raster file formats

You can export a Canvas document to several raster image formats, including Windows Bitmap (BMP), Graphics Interchange Format (GIF), and Tag Image File Format (TIFF).

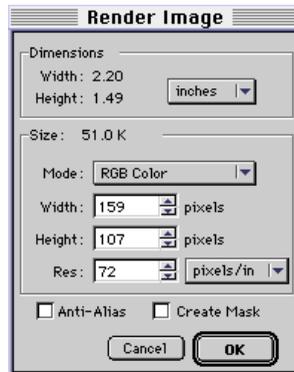
When saving a document in a raster file format, Canvas renders the Canvas document into one raster image in the file. The effect is the same as selecting all the objects in the documents and using the Area►Render command in the Image menu; Canvas uses the same process and lets you use the same dialog box options.

Rendering images when saving files

When you save a Canvas document in a file format that stores images (not vector objects or text), Canvas renders the document—converts the contents to a raster image—before saving the file.

To set rendering options

The Render Image dialog box lets you set options for converting a document to a raster image. This dialog box appears after you click Save in the Save As dialog box.



1 In the Render Image dialog box, choose an image mode from the Mode pop-up menu. Not all file formats support all types of image modes. If you select an image mode that isn't supported by the chosen file format, Canvas displays a message to tell you what image mode will be used.

2 To set the image dimensions, enter Width and Height values (in pixels). Changing the image dimensions also affects the resolution setting—enlarging the image results in larger pixels and lower resolution.

Note: The Size shown in the Render Image dialog box is an estimate of the amount of data in the image, based on the color depth and resolution. The actual file size can vary, depending on compression and other factors.

3 Type the resolution in the “Res” text box. Choose pixels per inch (pixels/in) or pixels per centimeter (pixels/cm) from the adjacent pop-up menu.

- 4 To soften the edges of objects in the image, turn on Anti-Alias.
- 5 To make the objects a masked channel selection, turn on Create Mask; see “Using a channel mask to make areas transparent” on page 365 for more information. This option is not available for all file formats.
- 6 After you configure the settings, click OK. Canvas converts the document contents to a raster image and saves the image file.

Loading external tool file filters

Canvas uses file filters to translate files to or from its native format. Many file filters are external tool modules. The file formats they provide appear in the format menus in the Open and Save As dialog boxes. If a supported format does not appear, check that Canvas has loaded the necessary external tool. For more information, see “Loading external tools” on page 93.

XTND file filters

In Mac OS, Canvas takes advantage of the Claris XTND System to provide additional file filters.

When it is installed, the XTND extension lets programs use standard XTND Translators. Canvas supports XTND Translators for word processing and Startup Screen file formats. In Canvas, the file formats provided by XTND Translators appear at the bottom of the file format pop-up menu (separated by a line) in the Open and Save As dialog boxes.

QuickTime file previews (Mac only)

Some files include a QuickTime preview image that compatible image browsers and page-layout programs can display. If you have QuickTime installed on your system, Canvas can store and display preview images with its native files and several other file formats. See the individual file format listings in this chapter and the on-line Help system for more information on preview images.



Claris XTND System



XTND Translator

Opening, placing, and saving non-Canvas files

You can use the Open, Place, and Save As commands to work with non-Canvas files. You choose the format you want to use in the format pop-up menus in the Open and Save dialog boxes.

Opening non-Canvas files When you use the Open command, Canvas imports the file into a new illustration document.

Placing non-Canvas files When you use the Place command, Canvas imports the file into the current document.

Saving non-Canvas files When you save a Canvas document in a non-Canvas format, Canvas creates a new file on disk, but does not close the Canvas document or change the name of the document in the title bar. If you then try to close the Canvas document (without saving it in Canvas 5 format), a message warns you and asks you to confirm that you want to close the document without saving it.

When saving in certain non-Canvas formats, Canvas displays a dialog box with options. For details on these options, refer to on-line Help.

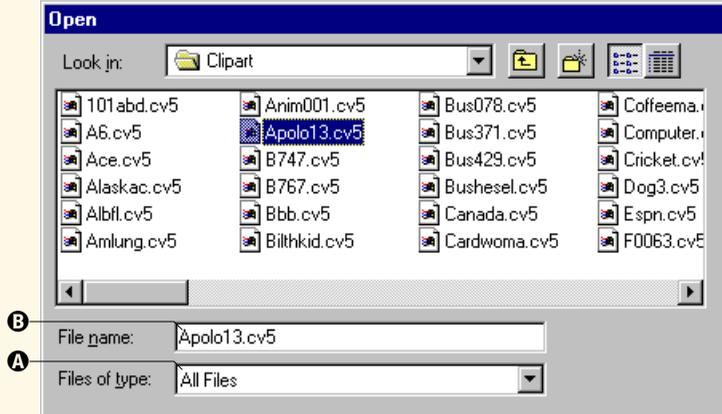
To open or place a file

- 1 Choose Open or Place in the File menu.
 - Open creates a new Canvas document containing the file you select.
 - Place inserts the file in the current Canvas document. Place is available only if a Canvas document is open.
- 2 Choose a file type in the File Format (Mac) or Files of type (Windows) pop-up menu. The file list shows files that match the selected format. Select “All Files” (Windows) or turn on “Show All Files” (Mac) to show every file in the folder (even if Canvas can’t open it). In Mac OS, you can also choose All in the File Format pop-up menu to show all files that Canvas can open.
- 3 In the file list, locate and select a file and click Open or Place. You can also double-click a file name. For some file formats, Canvas opens a dialog box and offers options for opening the file. If necessary, configure the options, then click Open or Place.
 - If you open the file, Canvas creates a new document.
 - If you are placing the file, a Place pointer appears. Click where you want to place the top-left corner of the file.

Selecting file formats

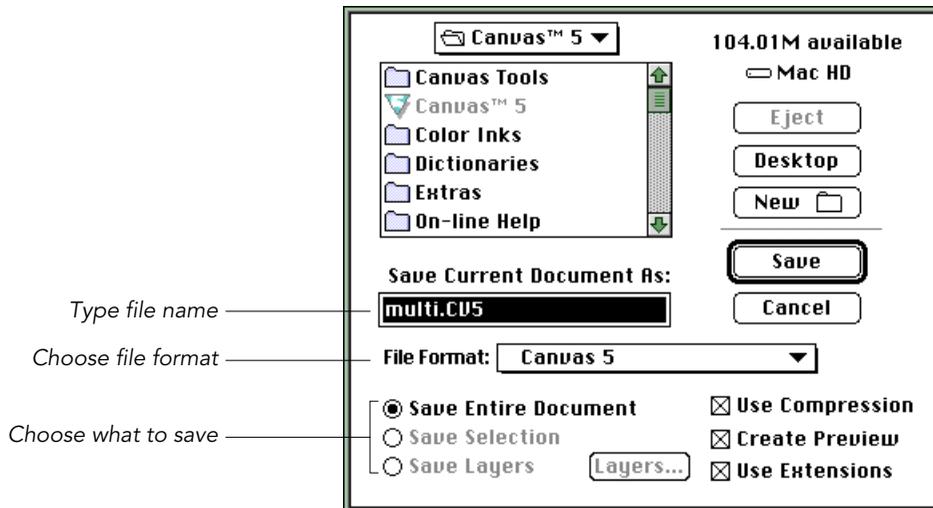
In the Open dialog box, the file list shows all files in the current folder that match the selected file format.

- A** Choose a file type in the pop-up menu.
- B** Type a file name or select a file in the file list.



To save a document in a non-Canvas file format

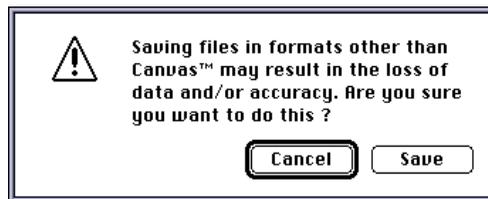
You can use the Save As command to export an entire document or selected objects to a non-Canvas format. Keep in mind that some Canvas objects might not be supported by other formats.



Tip

Always save your work as a Canvas 5 document. Some objects and attributes won't translate to other formats, so you might not be able to edit an exported file.

- 1 Depending on what you want to save, do one of the following:
 - To save specific objects, select the objects.
 - To save specific layers of a multi-layer document, make sure all the layers you want to save are visible.
- 2 Choose Save As in the File menu.
- 3 In the Save As dialog box, select a format in the “File Format” (Mac) or “Save as type” (Windows) pop-up menu. If the format you want to select is not available, check that the format is compatible with the selected objects in the document.
- 4 Select an available option at the bottom of the dialog box to choose what to save.
- 5 Turn on Create Preview (Mac) or Save Preview (Windows) to make a preview available to applications that support them. Turn on Use Compression to compress the saved file. Turn on Use Extension (Mac only) to include the three-character, Windows extension in the file name.
- 6 Type a name for the file, select a location, and click Save.
- 7 When you select a non-Canvas format, a warning asks you to confirm that you want to save the file in a non-Canvas format. Click Save to continue.



File conversion warning

If the file format has options for saving, a dialog box appears; configure the available options and click OK. For example, when you save a Canvas document in a file format that support raster data only, the Render Image dialog box opens. See “Rendering images when saving files” on page 59 for information on these rendering options.

Acquiring and exporting images

You can use the Acquire and Export commands in the Image menu to work with non-Canvas raster image file formats. These commands are especially useful because you can add new file formats by installing Photoshop-compatible plug-in modules.

Exporting images

When you use the Export command, you create a file on disk from a selected object in a Canvas document. The Export command works like the Save As command, except that you must select a paint object before you choose the Export command. The Export command appears in the Image menu only if you have export plug-in modules installed.

- 1 Select the paint object you want to export. Be sure the paint object is not in edit mode. (A selected image has square handles, while an image in edit mode has crop marks at the corners.)
- 2 Choose Export►*Image format* in the Image menu, where *Image Format* is one of the raster image formats in the Export submenu.
- 3 In the Save dialog box, type a file name, select a location for the export file, and Click Save.

Acquiring images

When you use the Acquire command, you insert an image from a file on disk into the active Canvas document. You can also acquire images from scanning devices using acquire plug-in modules.

- 1 In the Canvas document in which you want to insert the image, choose an Acquire submenu command:
 - To acquire an image from a file, choose Acquire►*Image format* in the Image menu, where *Image format* is an image format in the Acquire submenu.
 - To use a TWAIN scanning device, choose Acquire►TWAIN Acquire in the Image menu.
- 2 In the Open dialog box, type the name of the file you want to acquire, or select its name in the file list and click Open. Canvas inserts the image into the document.

Note: If you are using an acquire module to acquire images from a scanner, the scanning dialog box appears. Refer to the acquire module's documentation for information on options and settings.

Summary of file formats

Ext: Canvas extension. **Color bits:** Number of bits of color information: 1=2 colors, 4=16 colors, 8=256 colors, 16=65,536 colors, 24=16.7 million colors. **O:** Open and Place. **S:** Save.

Name	Ext	Description	Color bits	O	S
Adobe Illustrator	AI	Editable PostScript format supports vector objects, raster images, and formatted text	24	✓	
Adobe Portable Document Format	PDF	Portable Document Format files can be exchanged across platforms and viewed with Acrobat Reader software	Varies	✓	✓
Amiga IFF	IFF	Raster image format	24	✓	✓
CALS	CAL	Black and white image format with Fax Group IV compression	1	✓	✓
Canvas 3.5	CVS	Native format of Canvas 3.5 on Mac OS and Windows platforms	24	✓	✓
Computer Graphics Metafile	CGM	ANSI format for RGB color illustrations supports vector and raster graphics, layers, and formatted text	24	✓	✓
Drawing Exchange File Format	DCX	Supports multiple PCX images in one file	24	✓	✓
Drawing Interchange Format	DXF	Metafile format that supports plain text, 2-D and 3-D geometric data	8	✓	✓
Encapsulated PostScript	EPS	Editable PostScript format for printing graphics in other applications; can include preview in TIFF, PICT, or WMF format	24	✓	✓
Enhanced Metafile	EMF	Windows (32-bit) format supports vector objects, images and text	24	✓	✓
GEM Image	IMG	Raster image format from GEM operating system	4 (color) 8 (gray)	✓	
Graphics Interchange Format	GIF	Widely used format with compression for grayscale and 256-color images for Internet and online use; version 89a supports transparency	8	✓	✓
Halo CUT	CUT	Used by some MS-DOS-based paint programs	8	✓	
Hewlett-Packard Graphics Language	PLT	Vector format for plotter printing files	8		✓
Initial Graphics Exchange Specification	IGS	2-D and 3-D vector graphics format used in CAD and rendering applications	8	✓	✓

Name	Ext	Description	Color bits	O	S
Icon	ICO	Windows format for bitmap icon images	8	✓	✓
IOCA	ICA	Supports CCITT G3, CCITT G4 and MMR formats	1	✓	
Joint Photographic Experts Group	JPG	Raster image format with variable compression; allows significant file size reduction at the expense of some image data	24	✓	✓
Kodak Photo CD	PCD	Raster image stores photos at several resolutions in RGB and YCC color systems	24	✓	
MacDraw Pro	n/a	Mac OS format for vector and text	24	✓	
MacPaint	MAC	Mac OS-only raster image format supports black and white images to 720x 576 pixels	1	✓	
Micrografx Draw	DRW	Proprietary format supports vector objects and text	8	✓	
QuickTime Movie	MOV	Sound and animation file format	24	✓	✓
PICT and PICT 2	PCT	Mac OS QuickDraw graphics format, supports vector objects, 72 PPI images, and text. Original PICT supported 1-bit color and files up to 32 Kb.	24 (PICT 2) 1 (PICT)	✓	✓
PCX - PC Paintbrush	PCX	Raster image format	24	✓	✓
Photoshop	PSD	Proprietary format for raster images; Canvas flattens layers when opening files	24	✓	✓
Rich Text Format	RTF	Text-only format in which type formatting and layout information can be encoded	n/a	✓	
Sound	SND	Mac OS audio file format used for system sounds	n/a	✓	✓
Tag Image File Format	TIF	Raster image format supports high resolution RGB and CMYK color images; proprietary tags from some programs can cause problems or be ignored when opening files	24	✓	✓
Text File	TXT	Plain text format that uses ASCII encoding, does not support type formatting	n/a	✓	
Targa	TGA	Raster image format used in video and image-processing applications	24	✓	✓
Windows Bitmap	BMP	Common raster image format for Windows; supports compression	24	✓	✓
Windows Metafile	WMF	Common metafile format for Windows applications; offers compression for 4- and 8-bit images	8	✓	✓
WordPerfect Graphics	WPG	Proprietary format for clip art; Canvas supports raster images in WPG files	8	✓	✓

Additional information on file formats

This section provides background information on some of the standard graphics and text file formats supported by Canvas. For more information, see the Canvas On-line Help system and Release Notes.

Translating data between formats

If a file contains data for proprietary or unsupported features, the program opening the file must convert the data to something it understands, or simply omit the unfamiliar information. If you use a non-Canvas file format to bring data into Canvas, many, but not all, objects, text, and images can be converted into Canvas equivalents. The same is true if you save a Canvas document in another format.

Adobe Illustrator

The native format of Adobe Illustrator, these files store vector objects and text as PostScript commands in a proprietary format. Objects and text remain editable when you import them into Canvas.

Canvas 3.5

The native format of the previous version of Canvas, these files are generally compatible with Canvas 5; most vector, text, and paint objects should successfully import. However, when saving Canvas 5 files in Canvas 3.5 format, some of the new features and objects might not convert, or they might lose their special editing properties.

Computer Graphics Metafile

Computer Graphics Metafile (CGM) format is a standard for exchanging 2-D graphics and text. Variations and extensions to the “standard” format can create incompatibilities with the Canvas file filter. When you save a Canvas document in CGM format, Canvas makes the following image color mode conversions:

Canvas image mode	CGM image mode
CMYK, Duotone, Grayscale, and LAB color	RGB cell arrays
Black & White	CGM versions 1 and 2: RGB cell arrays CGM version 3: Black & White
Multichannel	First channel becomes an RGB cell array, other channels ignored

Canvas alerts you the first time each of the above conversions occurs.

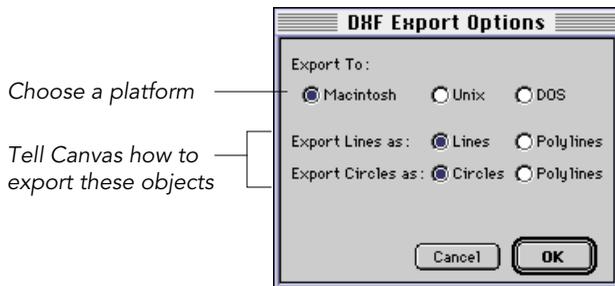
Drawing Interchange Format

Drawing Interchange Format (DXF) is a format developed by Autodesk, Inc., for exchanging data with AutoCAD and other drawing applications. DXF format provides platform-independent storage of 2- and 3-D technical drawings, and it supports multiple layers. Canvas supports DXF files containing ASCII data, but doesn't support binary data files.

When you save a document in DXF format, Canvas converts the following Canvas objects and attributes to DXF objects and attributes:

Canvas objects / attributes	DXF objects / attributes
Paint object	Not converted
Pen and fill patterns	Solid pens and fills
Arcs	Polylines
Calligraphic pen strokes	Fixed-width pen strokes
Continuous dashes	Dashes start in each segment
Layer names with spaces or non-uppercase characters	Spaces removed and characters become uppercase
Grayed layers	Objects appear in original colors

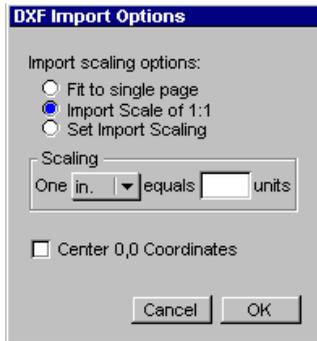
In addition, Canvas lets you set the following export options in this dialog box:



When opening a DXF file, Canvas makes the following conversions from DXF objects to Canvas objects:

DXF objects	Canvas objects
3-D lines	2-D lines
3-D Face	2-D polygon
Traces, Solids, and Quadratic polylines	Polygons
B-spline Polylines	Bézier curve paths
Shapes and Blocks	Groups
ATTDEF and ATTRIB	Text objects

In addition, you can set the following scaling and coordinate options when you import a DXF file:



Micrografx DRW format

DRW is the native file format of Micrografx Draw 3.1 and is also supported by Micrografx Designer 3.1 and Charisma 2.1. This format supports both vector and text. Text translates to polylines in Canvas. Extruded objects opened in Canvas become separate rectangle, circle, oval, polygon, or multigon objects. Once opened in Canvas, you must ungroup DRW objects to edit them.

Enhanced Metafile

Enhanced Metafile is the improved metafile format for 32-bit Windows applications. It replaced the Windows Metafile (WMF) format

of Windows 3.x. Like other metafile formats, EMF stores vector objects, images, and formatted text.

Encapsulated PostScript

Encapsulated PostScript (EPS) is a file format based on PostScript. However, EPS files don't include document information, such as page size or orientation, so EPS files themselves must be placed in a document and printed by a graphics layout program like Canvas.

When you import EPS files into Canvas, a dialog box gives you the option of placing the EPS file as an encapsulated object or converting the elements of the EPS file to individual, editable Canvas objects.

Desktop Color Separations An option you can choose when saving files as EPS, Desktop Color Separations (DCS) is a specification for CMYK color separations contained in a set of EPS files. The five-file set includes one composite file that can be used as a preview.

EPS preview options Canvas (and other programs that support preview images) can display a preview of an EPS graphic. The preview lets you position and size the graphic in a document. In Canvas for Windows, previews are stored in Enhanced Metafile format (EMF), and you can choose black and white, grayscale, or color previews. In Canvas for Mac OS, previews are stored in PICT or TIFF format.

About PostScript formats

PostScript is a programming language that encodes document pages as commands and data. PostScript is the language used by many inexpensive desktop printers and by high-end commercial imagesetters. PostScript supports vector objects, type, and raster images.

When printing a document to a PostScript printer, an application program sends information to a printer driver. The printer driver creates a PostScript program that describes the document and sends it to the printer. The printer (or a PostScript raster-image processor) interprets the PostScript program to reproduce the document on the page.

In Canvas, you can position, scale, rotate, mask,

and apply colors to EPS graphics. If the file contains a preview, you can see the effects of these commands on the EPS graphic. However, because the preview is a low-resolution version of the original, you should use the print preview feature and print a proof to check the alignment and appearance of an EPS graphic.

EPS and PostScript printer files include font specifications, but not the fonts themselves. Therefore, the correct fonts must be available when you print the EPS graphic. Otherwise, text won't print correctly. You can convert text to paths before saving a document in EPS format, but this isn't practical for more than a few lines of text.

- ◆ **To include a preview in an EPS file:** Select a preview option in the EPS Export dialog box. Select an option supported by the program in which you will use the EPS file.

Halo CUT

The Halo CUT format was originally created by Media Cybernetics, and is used by a number of MS-DOS-based painting applications. These files store raster image data at eight bits per pixel.

ICON

This is a Windows bitmap file format used to create application and file icons. You can open and save these files in Canvas for Windows; you can open these files in Canvas for Mac.

IOCA

Created by IBM, this format stores one-bit image data and supports CCITT G3, CCITTG4, and IBM's MMR specifications.

Hewlett-Packard Graphics Language

The Hewlett-Packard Graphics Language format is designed for documents that will be printed on Hewlett-Packard and compatible plotters.

Initial Graphics Exchange Standard

Initial Graphics Exchange Standard (IGES) format was created by AutoDesk for the interchange of 2-D and 3-D drawings.

Joint Photographic Experts Group

The JPEG file format stores compressed raster image files. JPEG is an acronym for the Joint Photographic Experts Group, which created the file specification. JPEG uses “lossy” compression, which means that file size reduction results in some loss of image quality, and a decompressed JPEG file is not identical to the original.

When you save a file in JPEG format, you can choose the amount of compression you want to apply to the image. The more you compress the file, the more the image quality suffers.

MacDraw Pro (Mac)

Canvas can import files created with MacDraw Pro, and retain the individual layers of the illustration. However, Canvas cannot import the layer names, so it renames them Layer #1, Layer #2, and so on.

MacPaint

MacPaint format is the native format of Claris Corp.'s MacPaint program. One of the first raster image formats, MacPaint supports only fixed-size, black-and-white images.

PC Paintbrush

PC Paintbrush is a format developed by ZSoft for storing raster images. PCX files use run-length encoding (RLE) compression.

Photo CD

Photo CD is a format developed by Kodak for storing photographs on CD-ROM. The format stores each photo in an "Image Pac," with 5 versions of the photo at different resolutions. Color data are encoded in the YCC color model at 24 bits per pixel. You can convert Photo CD images to RGB Color, CMYK Color, or LAB Color mode for editing. To open a Photo CD image, you must use the Acquire command in the Image menu.

Photoshop

Photoshop is the native format of the Adobe Photoshop program. Photoshop files store only raster images. Native Photoshop files can also include layers, which Canvas "flattens" (combines into one) when opening.

Photoshop uses image modes similar to those supported by Canvas: Bitmap, Grayscale, Indexed, CMYK Color, LAB Color, and RGB Color. In addition, Photoshop and Canvas file formats can contain compatible image alpha channel data, letting you import and export images and channels without losing this information.

Although Canvas does not support Photoshop clipping paths, you can save the clipping path as a channel mask in Photoshop, then import the image into Canvas. Once the file is in Canvas, you can use the Channel Mask feature to create a similar effect to clipping paths; see "Using a channel mask to make areas transparent" on page 365.

When exporting Canvas documents to Photoshop, keep in mind that Photoshop does not support vector objects or text, so Canvas vector and text objects must be rasterized first.

PICT

PICT is the Mac OS native file format. PICT 2, the current version, supports vector graphics, color images, and formatted text. PICT is roughly equivalent in Mac OS to the Metafile format in Windows.

PICT is nearly universal in the Mac OS world and has gained support on other platforms. In the same way that almost every Mac application can copy text and objects to the Clipboard to exchange data, nearly every Mac program can also read and write PICT files.

PICT has some limitations. Some application-specific variations, called PICT comments, can cause translation problems. PICT supports only 72 dpi integer coordinates, so it's not well suited for high-resolution graphics. PICT raster images can use transfer modes (including Or, And, Xor) for transparency effects, but these effects can't be printed on PostScript printers.

PICT files can use Apple Computer's QuickTime software to compress images using JPEG compression. You must have QuickTime installed to display a PICT file that uses JPEG compression.

QuickDraw 3D

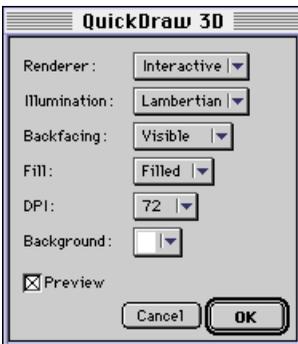
You can place QuickDraw 3D graphics in a Canvas document and use the QuickDraw 3D tool to rotate, light, and change colors. The tool is located in the Object Tools toolbar in the toolbox.



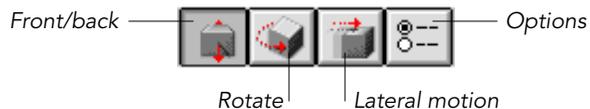
QuickDraw 3D tool

To use QuickDraw 3D graphics

- 1 Select the QuickDraw 3D tool in the Object Tools toolbar.
- 2 Click where you want to place the object in the document. A directory dialog box opens.
- 3 Locate the QuickDraw 3D file that you want to place in the document and click Open. Canvas places the graphic in the document.
- 4 To change lighting and display options, double-click the QuickDraw 3D graphic with the Selection tool; four buttons appear at the bottom of the object.



QuickDraw 3D options dialog box



- 5 To move the 3D graphic, click a button and drag inside the bounding box of the graphic.
- 6 To use the options dialog box, click the Options button, or double-click the QuickDraw tool. Configure the settings you want in the dialog box and click OK.

You can also save QuickDraw 3D objects and Canvas extruded objects as QuickDraw 3D Metafiles. To do this, you must first select one object. Then choose Save As in the File menu, select the Save Selection option, and choose QuickDraw 3D Metafile in the File Format pop-up menu.

QuickTime

Apple Computer's QuickTime technology lets you record, edit, and play digital movies and sound files. QuickTime software is an extension included with Mac OS System 7.5 and is available as an option for Windows. QuickTime is required to work with some file, graphic, and sound formats, including QuickTime movies, sound (SND) files, and graphics that use JPEG compression provided by QuickTime.

Using the QuickTime tool in the Object Tools toolbar, you can create movie files from presentation documents, record and place sounds, and place and play QuickTime movies in your Canvas documents.

You can also double-click the QuickTime tool to open a dialog box with playback options.

Loop Turn on to make a QuickTime movie repeat when you play it. To loop the movie from beginning to end, choose Normal in the pop-up menu; choose Back and Forth to make the movie play forward and backward alternately.

Play Selection Only Turn on to play one selected QuickTime object at a time.

Show Controller Turn on to display the QuickTime movie playback controls with the object.

When you save a presentation document as a QuickTime movie, the Export Options dialog box opens. You can set the number of seconds to show each slide and the color depth. In the Maximize pop-up menu, you can choose an option:

Animation Quality makes slide transitions as smooth as possible at the expense of image resolution.

Image Quality uses high image resolution but might slow animation.

Compression keeps the file size to a minimum, at the cost of lower animation and image quality.

On Mac OS, you can also turn on "Playable on non-Apple computers" so the movie is compatible with QuickTime for Windows.



QuickTime tool



When you save a Canvas document that contains a QuickTime movie object, Canvas updates the links to any movies that are in the Canvas document. If Canvas can't find an original movie file, an alert box asks you to locate the file. Use the directory dialog box to select the movie file and click Open. If you can't locate the file, click Cancel to continue saving and Canvas saves only the movie's "poster" preview.

Rich Text Format

Rich Text Format stores text with formatting information such as font, type size, character style, indents, special characters and style tags. An RTF file contains only ASCII characters and can be created in any text editor. RTF files are used as source files for compiling Windows Help files and for transferring documents between word-processing applications when a native file format isn't available.

Sounder (Mac OS only)



You can place sound objects in Canvas documents by using the Sounder tool in the Object Tools toolbar in the toolbox. The sound plays when you double-click the sound object. These objects do not print.

To add an existing sound file to a document

- 1 Double-click the Sounder tool.
- 2 In the Sounder dialog box, choose Read From File and click OK to close the dialog box.
- 3 With the Sounder tool selected, click where you want to place the sound object in the document. A directory dialog box appears.
- 4 Locate the sound file in the dialog box and click Open to place the sound object in the document.



To add a new sound to a document

- 1** Double-click the Sounder tool.
- 2** In the Sounder dialog box, choose Record New Sound and choose a sound quality level.
- 3** Click OK to close the dialog box.
- 4** With the Sounder tool selected, click where you want to place the sound object in the document. A sound recording control dialog box appears.
- 5** Use the recording controls to begin, stop, and play the recording. When you finish, click Save and name the sound file in the dialog box that appears.

Tag Image File Format

Tag Image File Format is a high-resolution raster image format. Canvas supports both RGB and CMYK TIFFs. Although TIFF is a “standard” format, many TIFF variations exist. Different resolutions, color systems, previews, and compression schemes make the format flexible but can cause compatibility problems.

TIFF files are often used for high-resolution images in desktop publishing. Because large, high-resolution images can require huge amounts of memory, if you have problems opening TIFF files, check that your system has enough available memory. You might also need to check free disk space if the system uses a virtual memory disk file.

You might also have problems opening TIFF files created by a program that uses unusual format tags. If possible, save files using the default settings before trying to open them in Canvas.

Text

Text is a standard format for files containing only ASCII (American Standard Code for Information Interchange) encoded characters.

Text format is available on nearly every computer platform; it’s the “plain vanilla” format, the lowest common denominator for words and numbers. Text files don’t include proprietary or application-specific character or formatting codes. Some punctuation marks, symbols, and all accented letters are non-ASCII characters that display incorrectly when used in text files. Still, ASCII text can be used to transfer text among a variety of applications, including text editors, word processors, and databases.

When you open a text file, Canvas creates one text object containing the file's contents, and assigns the default font and text formatting attributes to it. If the file contains more text than can fit in the Canvas workspace, Canvas truncates the text object and displays an overflow indicator. You can then flow the truncated text into other columns.

Windows Bitmap

Windows Bitmap Format was designed by Microsoft for storing raster images and is widely supported by Windows applications.

Windows Bitmap files use a 256-color palette (with 20 colors reserved by the operating system) or store 24-bit color information. Saving a Canvas document in Windows Bitmap format changes individual objects in the document to a single raster image.

Windows Metafile

Windows Metafile is the common file format of Windows 3.x, but has been replaced in 32-bit Windows applications by the Enhanced Metafile format (EMF). WMF files support vector objects, images and text, but don't support layers or high-resolution raster images. Also, if you save Canvas documents in this format, Bézier paths are converted to polylines. This means that if you save a Canvas document in this format, and then reopen the document in Canvas, curves are a series of lines. However, this should not affect the smoothness of curves.

Using Object Linking and Embedding

In Windows, Object Linking and Embedding (OLE) lets you easily exchange graphics among programs. Because Canvas provides full OLE support, objects you exchange retain their full functionality and are editable with all the tools of the original application.

Windows programs provide various levels of OLE support. In OLE parlance, Canvas is a fully capable *object* and *container* application. Briefly, this means Canvas can transfer objects to and from other programs through OLE.

Canvas is also an OLE *visual editing* application, which means you can use Canvas tools to edit Canvas objects embedded in other OLE containers, such as Microsoft Office applications. Also, you can edit objects embedded in Canvas documents using tools from other visual editing applications.

In the world of OLE, objects created in Canvas are identified as “Canvas 5 Drawing” objects. If you use the Insert Object command in another application, you should be able to select “Canvas 5 Drawing” as a type of object to insert.

Inserting objects into Canvas documents

You can use three methods to insert objects in a Canvas document: the Clipboard, drag-and-drop, and the Insert Object command. The objects you insert can be either linked or embedded.

Clipboard When you copy Canvas objects to the Clipboard, Canvas places OLE formats, as well as lower-fidelity formats, on the Clipboard. When you paste into another program, that program receives the highest-fidelity format it can accept. If the other program is an OLE container, pasting creates an embedded OLE object. The same applies when pasting into Canvas; Canvas creates an embedded OLE object if OLE formats are available on the Clipboard.

Drag-and-drop In Windows 95, you can drag objects from Canvas documents to almost any destination on the Desktop (including local and network folders) to create a “scrap” file containing the objects. You can also drag Canvas objects into other documents, and drag objects, such as scrap files and other program’s objects, directly into Canvas documents. When you drag an object to another program, it creates an embedding.

You can copy an object when you drag it by pressing a modifier key. Normally, dragging moves the object. If you want to copy the object,

rather than move it, Ctrl-drag the object to another document. This copies the object and creates an embedding.

Insert Object The Insert Object command in the Edit menu opens a dialog box in which you can choose any registered OLE object type to insert into a document. You can create a new object or choose a file as the source of the embedded object.

To embed objects

When you embed an object in another document, you can use the original program's tools and commands to edit the object.

Note: Not all programs support OLE and can create embeddings.

- 1** Select the objects you want to embed in another document.
- 2** Choose Copy in the Edit menu. Canvas puts the selection on the Clipboard.
- 3** Switch to the document where you want to embed the selection and choose Paste in the Edit menu. The object is embedded into the document.

To link objects

If you want an object to be updated when it changes in the original document, you can create a link to the object.

Note: Not all OLE programs support OLE linking.

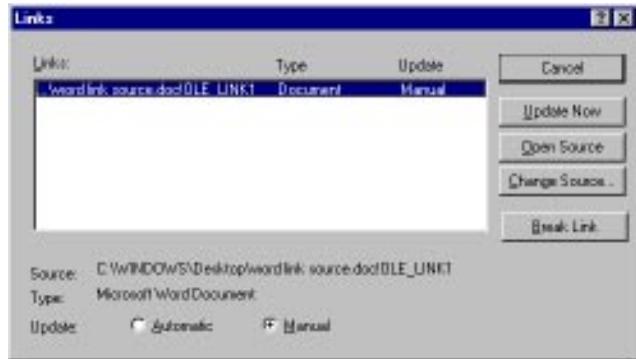
- 1** Select the objects to link and choose Copy in the Edit menu.
- 2** Switch to the document where you want to paste the linked object and choose Paste Special in the Edit menu.
- 3** In the dialog box, Canvas 5 Drawing format is selected and you can click Paste Link to link the object.

To manage linked objects

You can use the Links command to check the source file of a linked object and repair a broken link if a source file has been moved.

- 1** Select a linked object in a document.
- 2** Choose Links in the Edit menu. The Links dialog box displays the link type and update method. To change the update method, choose the Automatic or Manual option.
- 3** Use the buttons to update or change the linked object:

- To update the object from its source, click Update Now.
- To open the source document, click Open Source.
- To select a different source document, click Change Source.
- To remove the link so changes to the source do not affect the linked object, click Break Link.



Differences between linking and embedding

When you insert an object into a Canvas document, or insert an object from Canvas into another program’s document, you create an association between the object and its application. Linking and embedding create different types of associations.

Linking When you link an object, the object remains in the file where it was created. Only a link (reference) to the source object winds up in the document, which makes linking an efficient method of storing commonly-used objects and files. Linking makes a dynamic connection between an object and all documents in which it appears. When you edit the object, changes are automatically sent to linked instances of the object in all documents.

Because the object is linked by only a reference to another file, if any of the linked files change locations, the link will be disrupted. To move linked files without disrupting the references, you must move all linked files as well as the entire directory structure so that the relative locations of the files don’t change.

When you edit a linked object, the object’s application opens in a separate window. When you finish editing, you close the application to return to the document containing the link.

Embedding When you embed an object in a document, the object itself (not just a reference) is copied into the document. Therefore, a document can be moved to another computer without losing the object.

When you edit an embedded object, the source application's tools, palettes, and menu commands take over the window until you finish editing and select another object in the document.

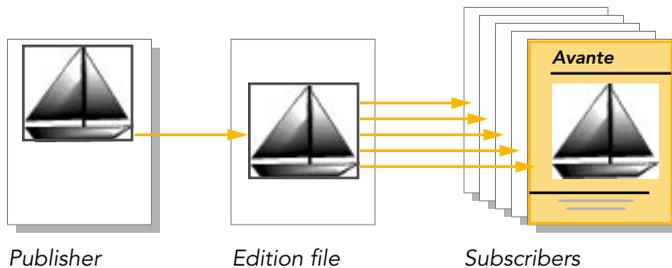
Sharing information through Publish and Subscribe

Publish and Subscribe is a Mac OS technology that lets you share information in Canvas and with other Mac OS programs.

Publish and Subscribe is useful when you want to be able to update an object in several documents whenever you change the original.

You can share an object by publishing it, which creates an edition, and then subscribing to the edition.

The arrows represent manual or automatic updates from the publisher to the edition, and from the edition to the subscribers.



To share an object, you make it a *publisher*. This creates an intermediate file, called an *edition*. To place the object in other documents, you subscribe to the edition file. Subscribing creates a *subscriber*, which is linked through the edition to the publisher.

Publish and Subscribe creates dynamic links between documents, unlike moving data through the Mac Clipboard. When you change a publisher, Canvas can update the edition automatically. When an edition changes, its subscribers can be updated automatically. You can also turn off automatic updating and then update changes manually.

To publish a selection

When you publish a selection, Canvas creates an edition file containing a copy of the published selection. You can subscribe to the edition from other documents. You can use the same procedure to publish information in another program and subscribe to it in Canvas.

- 1 Select the objects in Canvas that you want to publish.
- 2 Choose Publishing>Create Publisher in the Edit menu.
- 3 In the Create Publisher dialog box, select a location and type a name in the text box for the edition file, and then click Publish. Canvas creates the edition file on disk and displays a rectangular shaded border around the published selection.



Publisher borders



The rectangular border Canvas displays around a publisher is like a window into the document. Canvas sends objects that are within the border to the edition file. You can resize and move the border and move objects into and out of it to change the contents of the edition.

To set publisher options

The Publisher Options command lets you specify when to update a publisher's edition file. It also lets you update the edition manually and cancel the link between the publisher and edition. The command is available once you save the document containing the publisher.

- 1 Click the publisher border to select it and choose Publishing>Publisher Options in the Edit menu.
- 2 To update the edition immediately, click Send Edition Now. Canvas updates the edition file. Whether subscribers to this edition

also get updated depends on their update setting; see “To set subscriber options” on page 83.

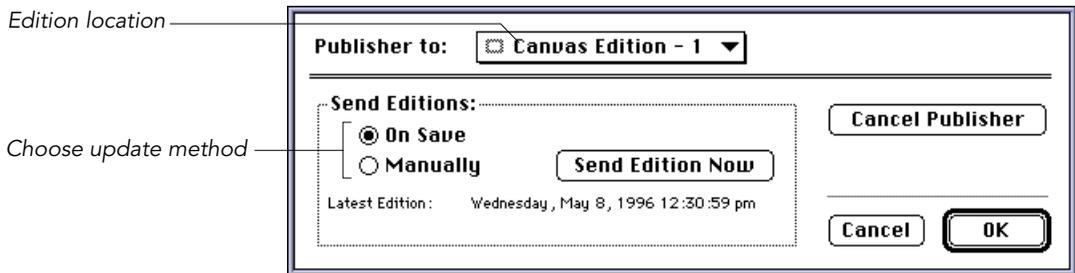
3 To specify when Canvas should update the edition file, choose an option in the Send Editions area.

On Save Tells Canvas to update the edition file whenever you save the publisher document.

Manually Tells Canvas not to update the edition. If you select this option, Canvas shows the time of the last publisher change.

4 When you finish setting publisher options, click OK.

◆ **To break the link between publisher and edition:** Click Cancel Publisher in the Publisher Options dialog box. This breaks the link to the edition. However, canceling the publisher does not delete the edition file or affect documents that subscribed to the edition.



To subscribe to a published selection

After you publish a selection, which creates an edition, you can subscribe to the edition file to place the published selection in as many documents as you want.

1 In the document in which you want to place the published objects, choose Publishing►Subscribe To in the Edit menu.

2 In the directory dialog box, select the edition file for the published selection and click Subscribe. The published information appears in the subscriber document within a non-printing gray rectangle. You can move and resize the subscriber border.

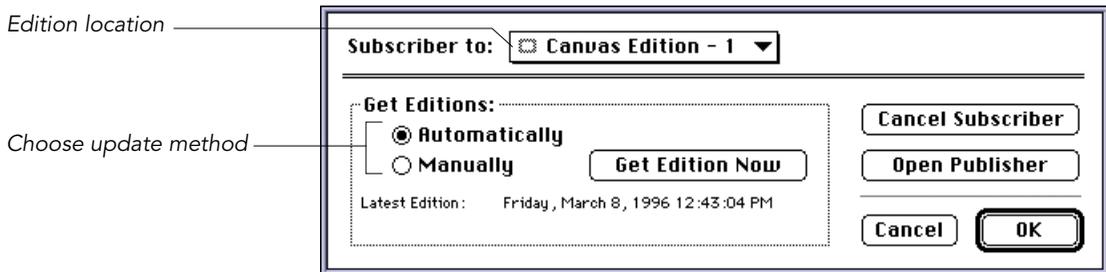
To set subscriber options

You can make changes to an edition file appear automatically in subscriber documents or update the subscriber manually. To set these and other options, use the Subscriber Options command.



Canvas Edition file icon

- 1 Click the subscriber border to select it and choose Publishing>Subscriber Options in the Edit menu.
- 2 To update the subscriber now from the edition, click Get Edition Now. To specify when the subscriber should get changes from the edition file, choose an option in the Get Editions area:
 - Automatically** Tells Canvas to update the subscriber when you open the document and whenever the edition changes.
 - Manually** Tells Canvas not to update the subscriber. If you select this option, Canvas shows the time of the last update.
- 3 When you finish setting subscriber options, click OK.
 - ◆ **To break the link between a subscriber and edition:** Click Cancel Subscriber in the Subscriber Options dialog box.
 - ◆ **To open the publisher document:** Click Open Publisher in the Subscriber Options dialog box.



Updating publishers and subscribers

When you work on a document containing publishers or subscribers, you can update all the linked items in the document at once.

- ◆ **To update all edition files:** Choose Publishing>Send All Now in the Edit menu. Canvas updates all editions that are linked to the publishers in the document.
- ◆ **To update all subscribers in a document:** Choose Publishing>Get All Now in the Edit menu. Canvas gets updates from all editions that are linked to the subscribers in the document.

PREFERENCES AND TOOLS

You can customize your Canvas work environment to best suit the needs of a specific project and to maximize your productivity. This chapter describes how to set Canvas preferences for

- general window environment
- drawing
- image editing
- printing
- measurement units and precision

This chapter also describes how to save document templates and custom combinations of specific tools.

Setting preferences

Preferences are settings for certain display, tool, and command behaviors in Canvas. To open the Preferences dialog box, choose Preferences in the File menu. The dialog box has five tabs: General, Drawing, Painting, Printing, and Units.

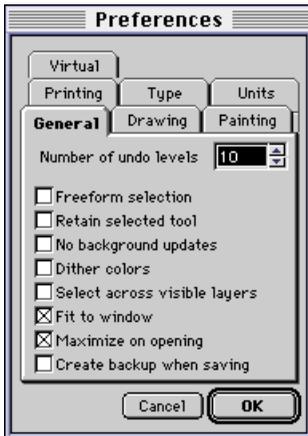
◆ **To set preferences:** Click a tab to display the corresponding options. To implement the current preference settings, click OK. The settings available on each tab are described below.

Note: For options that you simply turn on and off (as opposed to entering a number or choosing a menu option), the descriptions refer to the behavior of Canvas when the option is turned on.

General Canvas preferences

The options on the General preferences tab set some display and window behaviors.

Number of undo levels Enter a number in the text box to specify how many previous actions you want to be able to reverse using the Undo command in the Edit menu. Although you can specify several levels of undo, keep in mind that higher numbers require more system memory to maintain.



Freeform selection Lets you place objects in freeform mode by clicking already-selected objects. Otherwise, you must use the Effects►Freeform command to put an object in freeform mode.

Retain selected tool Keeps the current tool selected after you use it, instead of reverting to the Selection tool.

No background updates Prevents Canvas from redrawing open Canvas documents when you are working in another application. This option lets other applications run faster when Canvas is in the background.

Dither colors Provides the best onscreen color representation, but requires more system memory. If you are using Canvas for Macintosh, this option requires 32-bit color capabilities.

Select across visible layers Lets you select objects on all visible layers in a document, rather than just the active layer.

Note: If this option is off, you can still select objects on other visible layers by pressing Tab and clicking an object.

Fit to Window Opens documents so the full layout area can be seen in the center of the window. When this option is off, documents open in Home View (100% magnification with the upper-left corner of the page in the upper-left corner of the window).

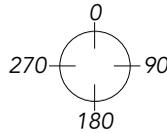
Maximize on opening Opens documents at full screen size. Otherwise, documents open at a standard size that fits any monitor, but might not fill the screen completely.

Create backup when saving Saves a copy of the current document each time you save changes to the document. The backup copy has the extension “.bak,” and Canvas saves to this same file each time.

Drawing preferences

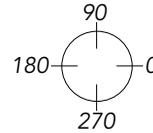
The Drawing tab lets you select a coordinate system for angular measurements and specify behavior for moving and copying objects.

Coordinate system Choose the Standard or Engineering system for angular measurements.



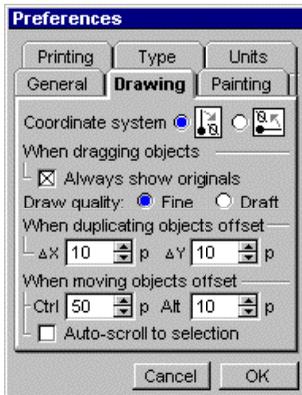
Standard

*Zero degrees at 12 o'clock,
increases clockwise*



Engineering

*Zero degrees at 3 o'clock,
increases counterclockwise*



When dragging objects show original objects Objects you drag follow the pointer, but also appear in their original position until you finish dragging.

Draw quality Draft quality displays shapes, especially curves, with less precision onscreen than Fine quality. However, Draft quality redraws slightly faster.

When duplicating objects offset Tells Canvas how far (in pixels) from the original to put object copies when you use the Duplicate or Paste commands in the Edit menu.

When moving objects offset Lets you specify the number of pixels objects move when you use a combination of modifier and arrow keys. For example, with the settings shown here (for Windows), Ctrl+Right Arrow would move a selected object 50 pixels to the right, and Alt+Right Arrow would move it 10 pixels to the right. Canvas Mac OS users can use the Command and Option keys in combination with arrow keys.

- **Auto-scroll to selection** keeps objects you are moving with the arrow keys in view by scrolling the document window.

Painting preferences

The Painting tab lets you set preferences for displaying and editing paint objects and images in Canvas.

Interpolation Tells Canvas how to fill new pixels created by resizing a paint object or applying certain filters.

- **Nearest Neighbor** fills new pixels with the same color as an adjacent pixel.
- **Bilinear** fills new pixels with colors derived from the color values of adjacent pixels. This creates softer edges than Nearest Neighbor.

Color Channels Makes channel previews in the Channels palette display in their respective colors instead of grays.

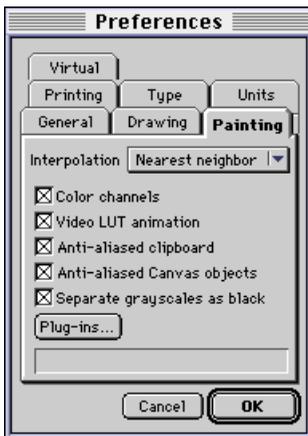
Video LUT Animation (Mac only) Provides faster previews of some image filters by modifying the color lookup table of your monitor instead of redrawing the image. For example, with Video LUT Animation turned on, changing the brightness of an image in the Brightness/Contrast dialog box with the Preview option off changes the brightness of the entire screen and not just the image.

Anti-Aliased Clipboard Anti-aliases vector and text objects pasted from the Clipboard into a paint object.

Anti-Aliased Canvas Objects Anti-aliases Canvas vector and text objects drawn in a paint object. For example, if you add text to a paint object in edit mode, Canvas rasterizes and anti-aliases the text.

Plug-Ins Click this button to tell Canvas where to find Photoshop-compatible plug-ins installed on your system so you can use them in Canvas. In the directory dialog box that appears, find the folder containing the plug-ins. The path name of the current folder appears in the text box below the button. Installed plug-in filters will appear in the Image>Filters submenu.

Separate Grayscales as Black When color-separating grayscale images, turning this option on sends all the pixel information to the black plate. Otherwise, Canvas creates four-color grays.



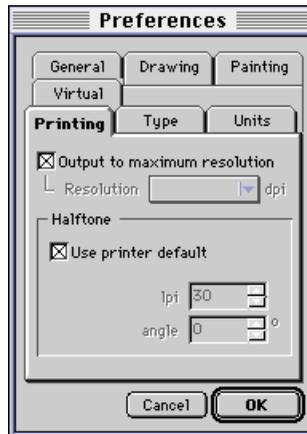
Printing preferences

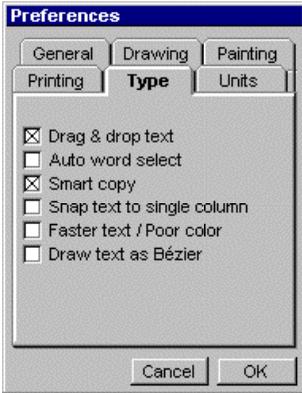
The Printing tab has settings that control the appearance of printed output.

Output to maximum resolution Prints Canvas documents at the printer's best possible resolution. However, this setting disables image reduction options and fast-printing features of QuickDraw® printers; these features require a setting of 72 dpi.

When this option is off, you can choose the resolution (72 or 300 dots per inch) you want in the Resolution pop-up menu.

Halftone Lets you set custom frequency (in lines per inch) and angle (in degrees) of halftone screens. You can also choose to use the printer's default halftone settings. For most desktop publishing purposes, the printer's defaults are the optimal settings. However, for commercial printing, you might need to specify a particular frequency and angle for the best output. If you are sending your documents to a commercial printer, ask them for the appropriate halftone screen settings.





Type preferences

The Type tab in the Preferences dialog box lets you customize the way you work with text.

Auto Word Select When using the I-beam pointer to highlight specific text, this option ensures that you select whole words (or all characters between blank spaces) only. As you drag to highlight text, Canvas detects when you drag over a space. As you continue to drag, Canvas locates the next space and selects the characters in between.

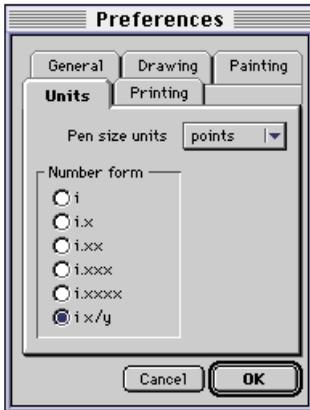
Drag & Drop Text With this option on, you can highlight specific text, then drag the highlighted text to a new location within the same text object.

Smart Copy With this option on, if you copy and paste text that begins a paragraph, Canvas pastes the text as a new paragraph using the original paragraph settings. With this option off, Canvas pastes text into the current paragraph using the existing paragraph settings.

Snap text to single column In publication documents with Column Guides off, you can turn this option on to have text objects snap to the width and length of the page margins when you click with the Text tool or Text Object tool. Otherwise, Canvas inserts a text object where you click.

Faster Text/Poor Color (Windows) Turning this option on speeds up screen redraw of text at the expense of color fidelity.

Draw Text as Béziers (Windows) When using a 256-color display, Windows cannot dither colors in text to approximate a non-system color; instead, Windows uses the closest solid colors. Turning this option on tells Canvas to redraw text using Bézier curves so that Windows can dither its colors if necessary. This method is resource intensive and can be slow; turn this option on only if you need to see dithered color in text on a system that displays only 256 colors.



Measurement unit preferences

The Units tab lets you choose measurement settings, such as units, precision, and numerical format. Settings on this tab affect the units displayed in the Strokes palette, the status bar of the Canvas window, the measurements in dimension objects, and the precision of settings in the Type palette.

Pen size units Choose inches, millimeters, points, or picas in the pop-up menu to specify how you want to measure pen size in the Pen tab of the Strokes palette.

Number form Set the precision and numerical format for numbers in the status bar, the Type palette, Show Size display, and other numerical displays. You can choose whole integers, up to four-decimal precision, or fractions. The setting you choose affects the measurement precision only, and does not affect the drawing precision.

Virtual Memory preferences (Mac only)

The Virtual tab lets you choose a disk and set other options for Canvas' internal memory management feature. Memory management makes it possible to open images and files that require more memory than the amount of physical RAM on your system.

Selected Hard Disk Choose a mounted hard disk in this pop-up menu. Canvas uses this disk for virtual memory. The amount of available space on the disk is shown below the pop-up menu.

Use available system memory Turning this option on instructs Canvas to use the allocated system memory first before resorting to its internal virtual memory.

Dynamic disk allocation Leave this option on to let Canvas claim and release disk space as needed and available for particular files. If you turn this option off, you can use the Minimum Disk Space After Allocation text box to set a limit on how much space Canvas can claim for virtual memory. For example, if you type 50 MB in the text box, Canvas must leave at least 50 MB free on the disk.



Saving document templates

You can use a special kind of Canvas document, called a template, as the basis for new documents. Canvas includes many ready-made templates, and you can create your own template documents. Then, when you use the New command, you can select a template — either one supplied with Canvas or one you have created — and Canvas will make a new document based on the contents and configuration of the template.

A template document stores almost all preferences settings, the options you choose with the Document Setup command, and other document setup options, including the following:

- document type — illustration, publication, or presentation
- setup of layers, slides, and pages
- settings for rulers, grids, guides, and views
- current inks and strokes settings
- text styles and default text settings

Canvas stores some settings with the application and not in particular documents, so these settings are not included in a template document. These settings that aren't stored in a template include the position of palettes on the screen and the current set of external tools.

To save a template document

- 1 Use the New command in the File menu to create a new illustration, presentation, or publication document.
- 2 Use the Document Setup command in the Layout menu to select measurement units, document size and orientation, and, for publications, the margins and column layout.
- 3 Use the Preferences command in the File menu to set the preferences on the General, Drawing, Painting, Units, and Printing tabs.
- 4 Create or import the objects you want to store in the template.
- 5 Choose Save As in the File menu. In the “File Format” (Mac) or “Save as type” (Windows) pop-up menu, choose Canvas 5 Template and click Save.

For more information, see “Saving Canvas documents” on page 21.

✓ Tip

If you create a template with a small amount of type, such as for a letterhead, convert the type to paths so the template won't depend on particular fonts being available.

Loading external tools

Using the ToolPicker, you can choose which drawing, painting, image editing, typography, and import/export tools and commands you want to load each time you begin a Canvas work session. By selectively loading tools, you can streamline your work environment, improve system performance, and increase productivity. If you choose not to load certain tools, Canvas removes them from the menus and toolbox, minimizing onscreen clutter.

By default, Canvas will load all its tools to provide you with the full range of capabilities. You don't need to use the ToolPicker to add functions to the program before starting your first session. You only need to use the ToolPicker to change the current set of tools.

Using tool sets

You can use the ToolPicker to save combinations of tools, called tool sets. Using tool sets makes it easy to quickly select the tools you need for the current Canvas session. You can create tool sets for specific types of projects, when you know that you will need only certain tools. For example, you could save a tool set specifically designed for image editing, which does not require many of the vector and typographic features of Canvas. Creating tool sets and loading only the necessary tools speeds Canvas startup time, and reduces the amount of system resources required to run Canvas.

◆ **To save a tool set:** In the ToolPicker dialog box, select the tools you want and click Save. In the dialog box that appears, type a name for the tool set and click OK. The new tool set name appears in the Tool Sets pop-up menu.

◆ **To delete a tool set:** In the Tool Sets pop-up menu, choose the name of the set you want to remove and click Delete. Canvas asks you to confirm that you want to delete the tool set; click OK to delete the set and close the dialog box.

Note: If you choose a tool set in the pop-up menu, then modify the list of selected tools and click OK, Canvas loads the currently selected tools and not the saved tool set. Also, the modifications you make to the scroll list of tools do not change the saved tool set unless you delete the tool set and save it again using the same name. You can't save a tool set using an existing tool set name.

Using the ToolPicker

To open the ToolPicker dialog box, launch Canvas and immediately press and hold down the Spacebar until the ToolPicker dialog box appears. After selecting tools to load, click OK to start Canvas.

A To load a saved set of tools, choose a tool set in the pop-up menu.

B To save or delete a tool set, click the Save or Delete button. See “Using tool sets,” below.

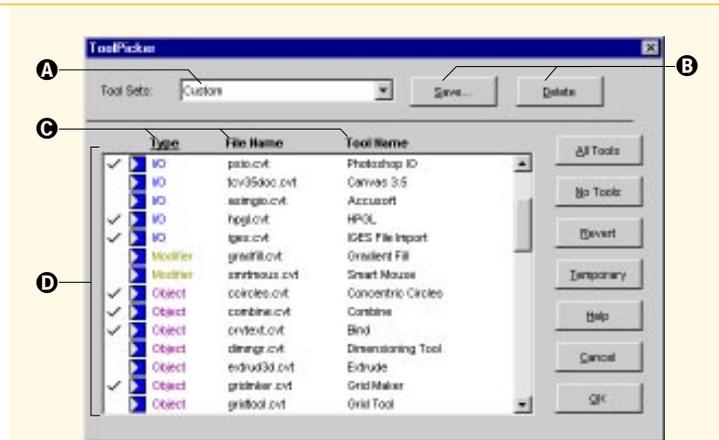
C To sort the list of tools, click a column heading. Canvas sorts that column in alphabetical order.

D To add or remove tools, click in the left column next to a tool. A check mark appears next to selected tools.

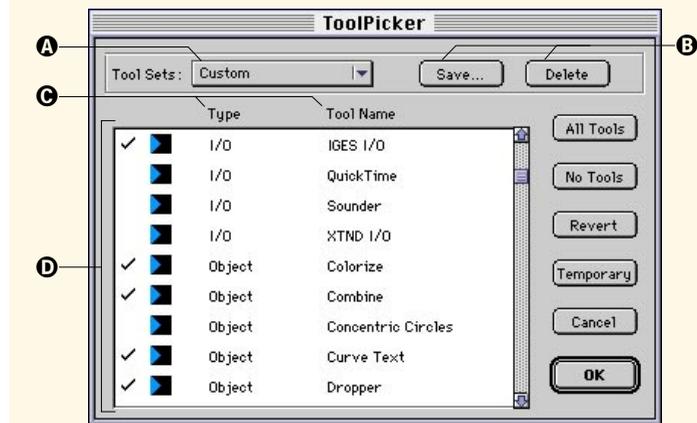
All Tools. Click to select all tools in the scroll list. Canvas places a check next to each tool.

No Tools. Click to deselect all tools. Canvas removes all check marks in the left column.

Revert. Click to select the same tools that were selected when the ToolPicker opened. Canvas undoes any changes you made to the list of tools.



Windows



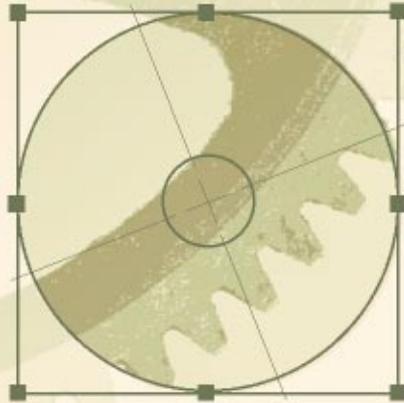
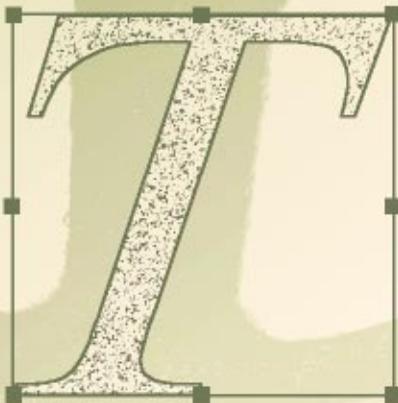
Mac OS

Temporary. Click to use the selected tools for the current session only. The next time you

start the program, Canvas will load the tools that it loaded before.

OBJECTS & ATTRIBUTES

||



WORKING WITH OBJECTS

This chapter explains how to work with objects in Canvas. It tells you how to select objects with selection tools or the Find command. It describes common actions, including how to copy, group, lock, move, arrange, flip, and align objects, plus effects you can apply to all objects, including scaling, rotation, and skew. It also tells you how to use the object position data in the Object Specs palette.

Types of objects and common operations

An object is an item that you can select, move, rotate, copy, duplicate, and delete, to name some basic operations. In Canvas, you can work with various types of objects:

Vector objects Geometric shapes — lines, circles, rectangles, polygons, and smooth curves — made with drawing tools. Canvas defines them internally by formulas, which might read like this: “Draw a circle 20 millimeters in diameter starting at coordinates x15 y30.”

Paint objects Frames that hold images — photos, screen pictures, faxes, and paintings — created with scanners or painting tools. Canvas defines them as rectangular areas made of square pixels, with each pixel assigned a color value. As a mass of pixels, they can be cropped, stretched, and filtered, but manipulating millions of pixels and color values can consume a lot of system memory.

Text objects Frames that hold text — numbers and letters and symbols — with character formatting, such as typeface and size, and paragraph formatting, including indents and line spacing. A text object can be empty, or contain up to a full page of text, and it can be linked to other text objects.

Group objects Multiple objects united with the Group command. A group object can be made of one type of object or several types. When grouped, all objects in the group behave like one object.

Each type of object has unique properties, and certain commands apply only to certain types of objects. However, Canvas is designed so you can perform many functions exactly the same on any object. For example, a line, a headline, and a photo of a chorus line differ in

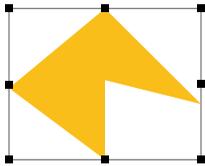
many respects, but in Canvas, you can use the same methods to select, copy, move, and arrange them in your documents.

Selecting objects

When you select an object, you distinguish it from other, unselected objects, so that when you choose a command or apply a color, Canvas knows to apply it to the selected object. In most cases, you select objects first, then apply a command or attribute. If you can't apply an attribute, or a command is not available, check to be sure you have correctly selected an object first.

Canvas provides several tools and commands for you to select objects. You can use the most convenient method for each situation. The Selection tools in the toolbox are the primary object-selection tools. You can also use the Select All and Find commands to select objects. Refer to the table “Selection options” on page 99 for a list of selection tools and commands.

In some cases, you can select parts within objects. For example, you can select an anchor point within a vector object, a word within a text object, and an image area within a paint object. Refer to the following parts of the *User's Guide* for specific selection procedures: Drawing & Vector Effects, beginning on page 163; Text & Typography, beginning on page 227; and Painting & Image Editing, beginning on page 303.



A bounding box with handles surrounds a selected object.

Selection indicators

Canvas indicates that an object is selected by displaying the object's bounding box. The bounding box is a rectangle with solid squares, called handles, at each corner and side midpoint. When an object is selected, its bounding box is visible even if it has attributes (the same color as the background, for example) that make the object itself invisible. Also, a selected object's bounding box is visible even if it's covered by other objects.

When one object is selected, Canvas displays the object type at the right end of the status bar. When more than one object is selected, the status bar shows the number of selected objects.

◆ **To select all objects:** Choose Select All in the Edit menu. This command selects every object in a single-layer document. To select all objects on all visible layers in a multi-layer document, change the default selection setting in the Preferences dialog box; see “General Canvas preferences,” page 85.

Selection options

To select	Do this
A single object	Click the object with a Selection tool.
Multiple objects	Shift-click each object with a Selection tool. Canvas for Windows users can also hold down the right mouse button while clicking objects with the left mouse button.
Objects using a selection box	Drag a box around the objects with a Selection tool.
All objects touched by a selection box	With a selection tool, press Option (Mac) or Ctrl (Windows) and drag out a box that touches the objects.
One object within a group object	Click the object with the Direct Selection tool (hollow arrow).
No objects (deselect all objects)	Click a Selection tool in a blank area, or press Enter (Mac) or Esc (Windows).
All objects	Choose Select All in the Edit menu.
An object behind another object	Ctrl-click (Mac) or Tab-click (Windows) the object's location until it is selected.
Unfilled object	Click the object's border, or press Tab and click inside the object.
An object on a layer other than the current layer, or an object on a master page	Tab-click the object with a Selection tool.
All objects created by a particular tool	Select the tool, then choose Select All in the Edit menu.
Objects based on their attributes	Use the Find command in the Edit menu.



Selecting objects with the Selection tools

The Selection tool (a filled arrow) selects any object you click. The Direct Selection tool (a hollow arrow) lets you select individual objects within a group object, without first ungrouping.

The Selection tool is the default tool when you start Canvas. The Selection tools are in a toolbar at the top-left of the toolbox. If another tool was selected and you need to return to the Selection tool, click its icon in the toolbox.

◆ **To select one or multiple objects:** With the Selection tool, Click an object. To select multiple objects, Shift-click each object you want to select. For Windows only, you can also hold down the right mouse button and click multiple objects to select them.

With the Selection tool, you can drag a selection box around objects to select them. Canvas selects all objects inside the selection box.

Selecting objects based on their properties

You can use the Find command in the Edit menu to select objects by type and attributes, such as rectangles with red fill ink.

In the Find palette, use the Objects tab to set up selection criteria.

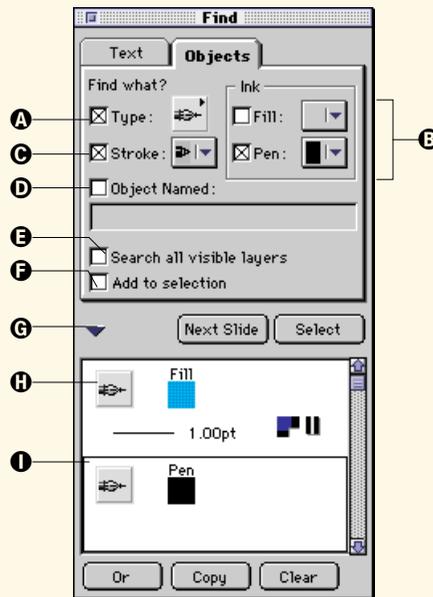
A To select objects by type, check Type and choose an object type icon in the pop-up menu. Selecting text or paint objects makes Fill, Stroke, and Pen options unavailable.

B To select objects by fill or pen ink, check these boxes and choose the inks in the pop-up menus. Only inks used in the document, plus process colors and white, appear in the menus.

C To select objects by stroke, check Stroke and choose the stroke in the pop-up menu. Only strokes used in the document appear in the menu.

D To select objects by name, check Object Named. Type the name in the text box.

E To select objects in the current layer only, uncheck this option.



Using selection sets

F Check to select additional objects without deselecting objects that are already selected.

G Click to open a window for working with selection sets, which let you broaden a search.

H Selection criteria symbols make up a selection set.

I The current selection set is boxed. Changing selection options updates this selection set. Click a set to make it the current selection set.

Or. Click to create an empty selection set.

Copy. Click to duplicate the current selection set.

Clear. Click to delete the current selection set. With only one set, Clear is unavailable.

Next Page/Slide. Click to advance to the page or slide and continue searching.

Select. Click to select objects based on the settings.

Copying, cutting, pasting, and deleting objects

When you have selected one or more objects, you can perform a variety of basic editing functions. You can copy and then paste the selection to duplicate it within the same document or in another document.

You can delete a selection and place it on the Clipboard at the same time to move it to another location.

The Cut, Copy, and Paste commands use the Clipboard to temporarily store objects. The Clipboard stores the results of one editing action (which might include multiple objects) at a time. Whatever is on the Clipboard is replaced by the next selection you place there, even when you use Cut or Copy commands in an application other than Canvas.

In Canvas, you can bypass the Clipboard by using the Duplicate command to quickly place a copy of a selection in the same document. Also, using the Clear command, or the Delete keyboard key, does not affect the contents of the Clipboard.

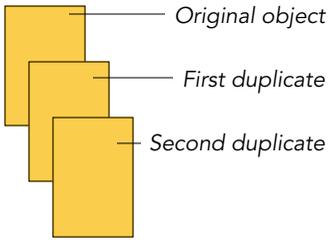
These are the basic editing commands in the Edit menu:

Command	Result
Copy	Copies a selection to the Clipboard
Cut	Removes a selection and places it on the Clipboard
Clear	Removes a selection without changing the Clipboard
Duplicate	Copies a selection into the same document without changing the Clipboard
Paste	Places the Clipboard contents into the active document

Most editing commands can also be applied to selected text, areas of paint objects, and segments of vector objects.

In Canvas for Mac OS, you can also use Cut Without Comments or Copy Without Comments to place specialized Canvas objects such as arrowheads, concentric circles, and grids on the Clipboard as commonly recognized objects. This feature is useful if you are having difficulty copying Canvas objects to other applications.

◆ **To use Cut or Copy Without Comments:** Press Shift, then open the Edit menu. Choose Cut Without Comments or Copy Without Comments, depending on whether you want to leave the objects in the current documents.



Canvas offsets and stacks duplicates in the order that you create them.

Copying objects into the same document

The Duplicate command quickly copies selected objects into the same document, without affecting the contents of the Clipboard.

◆ **To copy objects into the same document:** Select the objects you want to copy and choose Duplicate in the Edit menu. Canvas creates, offsets, and stacks a copy of the selected objects in front of the original. To make additional copies, choose Duplicate again.

Using the Clipboard to copy objects

The Copy and Paste commands let you copy objects using the Clipboard. You can use the Clipboard to copy objects within a document, from one Canvas document to another, and into documents created by other programs.

- 1 Select the objects that you want to copy.
- 2 Choose Copy in the Edit menu. Canvas puts the selection on the Clipboard.
- 3 If you want to paste the copied selection into another document, switch to that document. You can switch to an open Canvas document by choosing its name at the bottom of the Window menu.
- 4 Choose Paste in the Edit menu. Canvas pastes the Clipboard contents into the current document.

The Clipboard isn't erased after you paste its contents. You can choose the Paste command again to copy the Clipboard contents as many times as you want. However, using the Copy or Cut commands in any application does replace the Clipboard contents.

When you paste objects into other programs, the Clipboard uses a format that the receiving program understands. However, special types of objects and special object attributes can be lost when pasting objects into other applications. If you can't transfer an object successfully using the Clipboard, consider using a compatible file format to export or import the object as a file to another program.

Creating links when copying and pasting

(Windows only) You can use the Clipboard to place objects into other documents and maintain a link to the source application. In Windows, the Paste command creates a link between the pasted object and the application that created it, using Object Linking and Embedding (OLE).

Making multiple copies

You can use the Copy and Paste commands to make multiple copies of selected objects using the Clipboard. When you choose Copy, Canvas places the selected objects on the Clipboard. You can then choose Paste to place the Clipboard contents in the active document at the center of your current view. You can choose Paste as many times as you want to create multiple copies.

You can also use the Duplicate and Replicate commands to make multiple copies. The Duplicate command makes copies immediately, while the Replicate command lets you incrementally resize and rotate the copies.

To make evenly-spaced copies

When you use the Duplicate command, Canvas remembers the distance that the duplicate is placed from the original object, so you can create evenly-spaced copies.

- 1 Select the objects that you want to copy.
- 2 Choose Duplicate in the Edit menu. Canvas duplicates the selection and places the copy a preset distance from the original. The preset distance is specified in the Preferences dialog; see “When dragging objects show original objects” on page 87.
- 3 Use the Selection tool or the keyboard arrow keys to move the copies into position. The copy must remain selected, or Canvas won’t remember the offset from the original.
- 4 Choose Duplicate in the Edit menu again. Canvas places the second copy the same distance from the first copy as the first copy is from the original selection. Repeat this step as many times as you want to create additional evenly-spaced copies.

To rotate and scale evenly-spaced copies

The Replicate command offers powerful capabilities for duplicating objects. You can use the Replicate dialog box to set the number of copies and to rotate, scale, and position copies simultaneously.

- 1 Select the objects that you want to copy.
- 2 Choose Replicate in the Edit menu.
- 3 In the Replicate dialog box, configure the settings described next.
- 4 Click Apply to preview or click OK to replicate the selection.

Options in the Replicate dialog box

The settings on the Replicate dialog box let you rotate, scale, and duplicate selected objects simultaneously.

Copies. Enter the number of the copies you want to create.

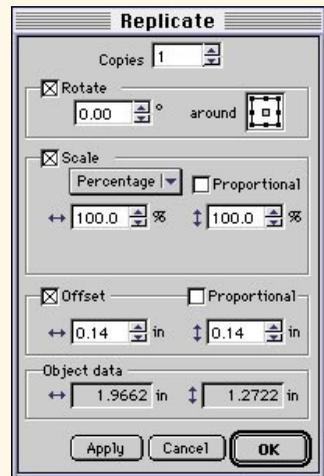
Rotate. Check this option to incrementally rotate each copy. Enter the amount in degrees you want to rotate each copy relative to the previous copy. In the Around edit box, click a hollow handle (it becomes filled) to set the position of the center of rotation.

Scale. Check this option to incrementally change the dimensions of each copy. In

the pop-up menu, choose a scaling method: percentage or ratio. Depending on the method, enter a percentage or ratio in the text boxes to specify the change in size for each copy.

Proportional. In the Scale or Offset areas, check this option to horizontally and vertically scale or offset objects equally.

Offset. Check this option to place copies a specified distance from the original or the previous copy. In the text boxes, enter the amount of horizontal and vertical offset. Positive numbers offset objects up and right, negative numbers offset objects down and left.



Object data. The height and width of the bounding box of the selected object. These values can't be changed.

Grouping and ungrouping objects

You can use the Group command to unite objects that you want to keep together as one unit. You can group individual objects as well as already-grouped objects.

When you apply a command to a group object, the effect is the same as if all the objects were selected when you apply the command.

When you no longer want to treat a group object as a single unit, you can ungroup it to separate the original objects.

Keep in mind that grouping objects might change the stacking order of objects in the group relative to objects outside the group. For example, you have three overlapping objects. If you group the front and back objects, the group moves to the back and the middle object becomes the front object.

◆ **To group objects:** Select the objects that you want to group. Choose Group in the Object menu. Canvas replaces the bounding boxes of the individual objects with a single bounding box.

✓ Tip

After you group objects, you can select an individual object with the Direct Selection tool without ungrouping them.

◆ **To ungroup objects:** Select one or more grouped objects that you want to separate. Choose Ungroup in the Object menu. Canvas separates the group and leaves the individual objects selected. If any of these objects are group objects, you can further ungroup them by choosing the Ungroup command again.

Moving objects

You can move objects by dragging them and by using the keyboard arrow keys. You can also use the Move command to specify a position change, and you can use the Object Specs palette to specify an exact coordinate position.

When you drag an object, the status bar shows the change in the object's x- and y-coordinate position. You can specify the format and precision of this data in the Preferences dialog box.

You can make precise positioning easier by turning on the autogrid so that objects you drag snap to preset ruler increments. You can also place alignment guides that objects will snap to in a document.

◆ **To move an object using the Selection tools:** Position the pointer on the object and drag. If you drag as soon as you press the mouse button, an outline of the object follows the pointer. To see the entire object as you drag, pause after you press the mouse button, and then drag.

You can press modifier keys as you drag objects to constrain movements and perform other functions.

To	Do this
Constrain movement to 45 degree increments	Press Shift while dragging
Copy objects by dragging	Mac: Press Option while dragging Windows: Press Alt while dragging
Leave a trail of object copies	Mac: Press Command-Option while dragging Windows: Press Ctrl-Alt while dragging

◆ **Moving objects using the keyboard:** To move objects left, right, up, or down, press the corresponding arrow key. You can use

the modifier keys shown in the following table to move greater distances.

To move objects	Do this
1 pixel to the left, right, up or down	Press left, right, up or down keyboard arrow key
10 pixels to the left, right, up or down	Mac: Press Command and an arrow key Windows: Press Alt and an arrow key
50 pixels to the left, right, up or down	Mac: Press Option and an arrow key Windows: Press Ctrl and an arrow key

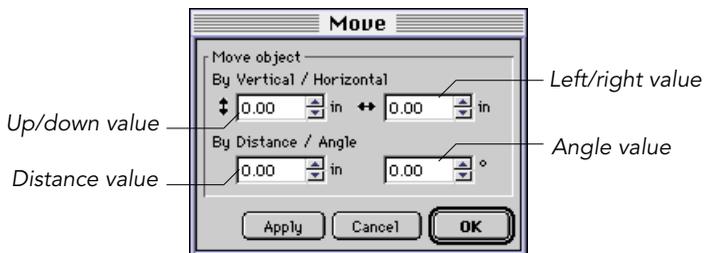
You can change the default distances that keyboard keys move objects; see “When dragging objects show original objects,” page 87.

Moving objects a specified distance

Use the Move command to specify distance and direction.

- 1 Select the objects you want to move and then choose Move in the Object menu.
- 2 In the Move dialog box, enter values in the first or second row of text boxes. Use positive numbers to move up and to the right. Use negative numbers (type a minus sign before the numbers) to move down and to the left.
- 3 Click Apply to preview or OK to implement the Move settings.

You can specify angular movement in 0.01 degree increments. The angular direction depends on the coordinate system setting (standard or engineering) in the Preferences dialog; see “When dragging objects show original objects”



Arranging objects in the stacking order

Each object in a Canvas document is part of a stack that holds all objects on the same layer (in illustration and presentation documents) or page (in publication documents). Each object has a position in the stack. Unless you rearrange objects, the newest object is in front of

the stack and the oldest object is in the back. An object that you create or paste appears at the front of the stack.

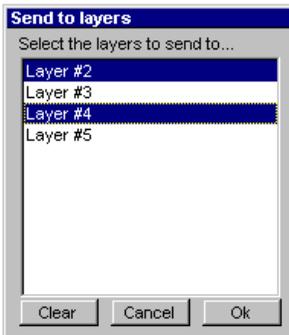
Stacking order affects the appearance of an illustration when you view it and print it. Like actual objects placed in a stack, the front object in the stack can block objects behind it. An object's position in the stack also is a factor in alignment and combining operations.

Commands in the Arrange submenu in the Object menu let you change an object's position in the stack. You can move objects to the front or back, and you can move objects one level at a time toward the front or back of the stack.

◆ **To change an object's position in the stack:** Select the object and choose a command in the Arrange submenu in the Object menu.

Command	Result
Bring to Front	Moves selected objects to the front of the stack
Send to Back	Moves selected objects to the back of the stack
Shuffle Up	Moves selected objects one step toward the front
Shuffle Down	Moves selected objects one step toward the back

Arranging objects on layers, pages, and slides



Select destinations for objects. Shift-click two items to select a range, or Command-click (Mac) or Ctrl-click (Windows) to select multiple items. Clear deselects all items.

Commands in the Arrange submenu let you move and copy objects from one layer to another (in illustration and presentation documents), one page to another (in publication documents), and one slide to another (in presentation documents).

◆ **To send or copy objects to another location:** Select the objects and choose an Arrange command in the Object menu. (In presentation documents, to send or copy objects to another layer on the same slide, press Shift, then choose an Arrange command.) In the list of layers, pages, or slides, select the destination for the selected objects; click OK. The destination can't be a locked layer, page, or slide. (You can't send objects to a slide if its first layer is locked.)

Command	Result
Send to Layers/ Pages/Slides	Sends the selected object to the location you choose, deleting the original
Copy to Layers/ Pages/Slides	Copies the selected object to the location you choose, leaving the original

Locking and unlocking objects

When you want to secure objects from unintentional changes, you can lock them. A locked object can't be moved, edited or deleted, and its attributes can't be changed. If you try to alter a locked object, Canvas alerts you that the selection is locked. However, you can select and copy locked objects and the copies won't be locked.

◆ **To lock or unlock objects:** Select the objects that you want to lock or unlock. Choose Lock or Unlock in the Object menu.

How commands affect locked objects

If you apply the Align command to several selected objects, and one object is locked, the other objects align to the locked object.

If you group several objects and one of the objects is locked, all the objects are positioned behind the locked object in the stacking order.

Aligning and distributing objects

You can use the Align palette to quickly and precisely position objects. As the reference point for alignment and distribution, you can choose points on the objects, a page, or a document. The Align palette can stay onscreen as you work with different selections, making it easy to quickly access these features.

You can apply alignment and distribution options to vector objects, group objects, paint objects, and text objects. You can align and distribute objects in separate or combined operations.

Aligning objects When aligning objects, Canvas lines up key points on the objects in relation to the reference point you choose. You can choose left, right, top, bottom, or center alignment.

Distributing objects When distributing objects, Canvas spreads them out over a specified area and equalizes the space between the key points. You can choose left, right, top, bottom, inside, outside, or center as methods for distribution. For example, if you choose left edges for distribution, the left-most point in each object is an equal distance from the leftmost point in each of its neighbors.

If one of the objects you select for alignment is locked, other objects align relative to it. When distributing objects, Canvas places all objects relative to each other.

Align palette

Choose Align in the Object menu to open the palette. Select the objects you want to arrange. Click Apply to implement the current settings.

A Choose the reference for alignment and distribution:

Each Other: With respect to the other selected objects.

Grid: To the nearest grid increment.

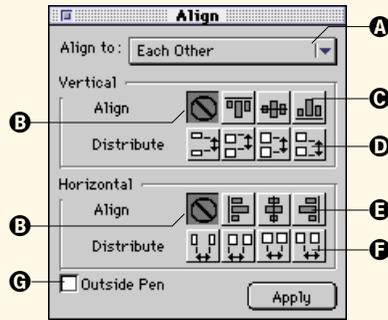
Page: With respect to the printer page or tile.

Document: To a specified location in the document. If you center an object in a multi-page illustration, portions can appear on multiple tiles.

In the Vertical and Horizontal areas, click buttons for alignment and distribution options. Active buttons are recessed.

You can select an alignment or distribution option, but not both, in each area.

B To specify no alignment or



Align to Grid

Align to Each Other

Align to Page

distribution, click the first button in the Align row.

C **Vertical Align.** (Left to right) None, top, center, and bottom.

D **Vertical Distribute.** Inside, top, center, and bottom.

E **Horizontal Align.** None, left, center, and right.

F **Horizontal Distribute.** Inside, left, center, and right.

G **Outside Pen.** Check this option to use the outside edge of objects' strokes when aligning or distributing objects. Otherwise, Canvas uses the center of the stroke.

Rotating, skewing, and flipping objects

You can rotate Canvas objects clockwise or counterclockwise, flip them on one or both axes, and skew their bounding boxes. You can rotate and skew around an object's center, or move the centerpoint to any location.

When you rotate an object, the object's bounding box also rotates. If you drag a selection handle of a rotated object, the bounding box changes shape in the rotated orientation, so you can resize an object

without distorting its basic shape. If you need to, you can also return the rotated bounding box to its original orientation with the Convert To Paths command in the Paths submenu in the Object menu.

◆ **Removing effects:** After you rotate, skew, or flip objects, you can return them to their original orientation and shape. Select the objects and choose Remove Effects in the Effects menu.

Rotating and skewing in freeform mode

When you put an object in freeform mode, you can rotate and skew it by dragging special handles.

◆ **To put an object in freeform mode:** Select the object and choose Freeform in the Effects menu. Rotation and skewing handles and the object's centerpoint appear.

You can also put a selected object in freeform mode by clicking it. This depends on a setting in the Preferences dialog box; see “General Canvas preferences” on page 85.

◆ **To end freeform mode:** Click away from the object, or press Enter (Mac) or Esc (Windows).

Rotating objects in freeform mode

In freeform mode, the circular handles at each corner of the bounding box are rotation handles. The circle and crosshair in the center of the object is the point around which the object rotates.

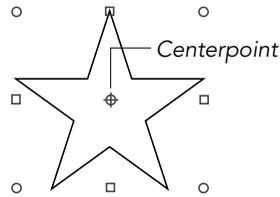
◆ **To rotate an object in freeform mode:** Drag one of the four corner handles. An outline of the object rotates as you drag a handle.

◆ **To set the center of rotation:** Drag the centerpoint to a new location anywhere on the screen. To make the centerpoint snap to one of the handles or the center, press Shift as you drag.

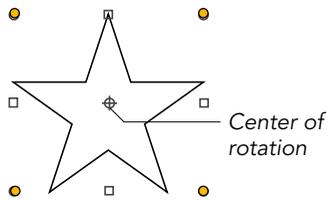
Skewing objects in freeform mode

When an object is in freeform mode, you can slant its shape by dragging the horizontal and vertical skew handles. Skewing an object reshapes it by changing the relationship of the horizontal and vertical axes to the skew centerpoint.

Canvas skews objects around a centerpoint that you can position to achieve the effect you want. You can drag the centerpoint to any position inside or outside the object. The location of the skew centerpoint changes the effect of dragging a skew handle on the object.



Object in freeform mode



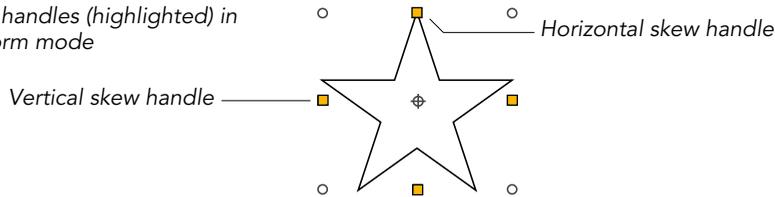
Rotation handles (highlighted) in freeform mode

To position the centerpoint on one of the freeform handles or in the center of the object, Shift-drag the centerpoint to place it.

◆ **To skew an object horizontally:** Drag a horizontal skew handle to the left or right.

◆ **To skew vertically:** Drag a vertical skew handle up or down.

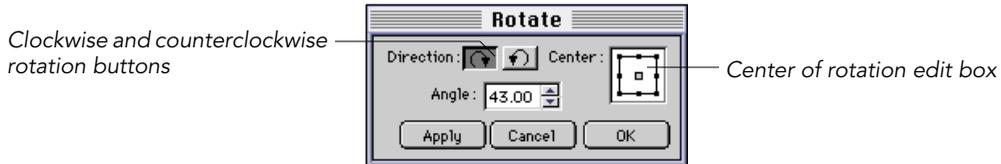
Skew handles (highlighted) in freeform mode



Rotating objects with the Rotate command

For precise rotations, you can use the Rotate command to rotate selected objects in 0.01 degree increments around a center of rotation you specify. This command is useful when you need to rotate multiple objects an exact amount.

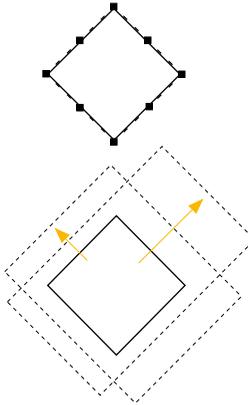
- 1 Select the object you want to rotate.
- 2 Choose Rotate in the Effects menu.



- 3 In the Rotate dialog box, click the clockwise or counterclockwise button to choose a rotation direction.
- 4 Enter the rotation angle in degrees in the Angle text box.
- 5 The Center edit box shows the center of rotation as a solid handle. To change it, click one of the hollow handles on the bounding box; the gray handle snaps to the new location.
- 6 Click Apply to preview the settings, or OK to implement the settings and close the dialog box.

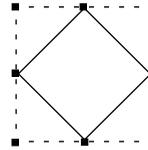
Editing rotated objects

When you rotate an object, its bounding box also rotates. This lets you reshape and resize the object in rotated space: you can drag a handle on the object's bounding box and the sides keep their rotated orientation, which prevents distortion of the original shape.

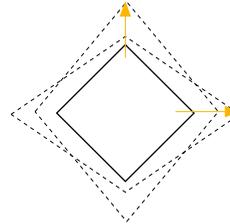


The bounding box of a rotated square also rotates...

... so that reshaping the bounding box maintains the same basic shape, shown by the dotted lines



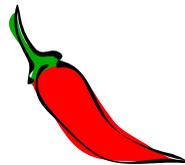
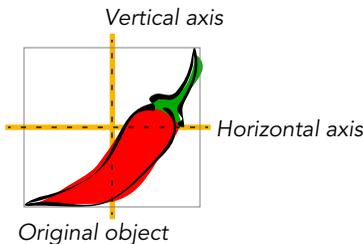
If you convert the rotated shape to paths and re-orient the bounding box...



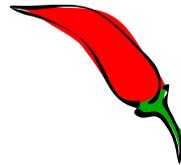
... the object distorts, shown by the dotted lines, when you reshape the bounding box

Flipping objects

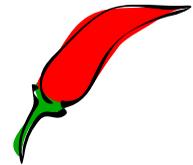
You can flip objects horizontally, vertically, and both horizontally and vertically, with the Flip commands in the Effects menu. You can flip individual objects, multiple selected objects, or grouped objects. When you flip a group object, objects included in the group flip around the axes of the group's bounding box.



Flip > Horizontal



Flip > Vertical



Flip > Both Axes

◆ **To flip a selected object from top to bottom:** Choose Flip > Vertical in the Effects menu. The Vertical command flips the selection's vertical coordinates over its horizontal axis.

- ◆ **To flip a selected object from left to right:** Choose Flip►Horizontal in the Effects menu. The Horizontal command flips the selection's horizontal coordinates over its vertical axis.
- ◆ **To flip a selection around both axes:** Choose Flip►Both Axes in the Effects menu. Canvas flips the selection's horizontal coordinates over its vertical axis and its vertical coordinates over its horizontal axis.

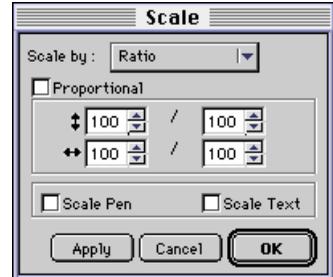
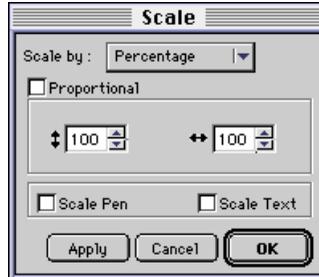
Scaling objects

The Scale command in the Object menu provides several options for enlarging or reducing objects. You can scale by a percentage or ratio, horizontally and vertically. You can also scale text and stroke weights along with the object.

To scale an object

- 1 Select one or more objects and choose Scale in the Object menu to open the Scale dialog box.
- 2 Select a scaling method in the Scale By pop-up menu. The configuration of the dialog box depends on which option you choose.

Depending on the scale method you choose, the Scale dialog box displays different options.



Percentage You can specify vertical and horizontal percentages. Scaling an object 150 percent is the same as increasing the object's size by a factor of 1.5, for example.

Ratio You can specify horizontal and vertical scaling factors as ratios by entering numbers in each set of two boxes.

✓ Tip

You can also scale an entire document when you print it, without changing the objects in the document, by specifying a scaling factor in the Print or Printer Setup dialog boxes.

For example, to scale an object to one-third its original height, enter “1” in the first text box, and “3” in the second.

- 3 To scale an object vertically and horizontally by the same amount, turn Proportional on.
- 4 To maintain the proportion between an object’s pen size the overall size of the object, turn Scale Pen on.
- 5 If one of the selected objects contains text, you can turn Scale Text on to change the size of the characters. Otherwise, text remains the same size.
- 6 Click Apply to implement the settings.

Object data and styles

The Object Specs palette provides information about a selected object. The palette contains Data, Options, and Styles tabs. These tabs let you

- name an object
- change an object’s coordinate position
- view and adjust an object’s dimensions
- set printing and output options for an object
- create and apply object styles

◆ **To use the Object Specs palette:** Choose Object Specs in the Object menu. You can keep the palette open while you work; the data changes with each object you select. You can change coordinates, dimensions, or other settings and click Apply to implement them.

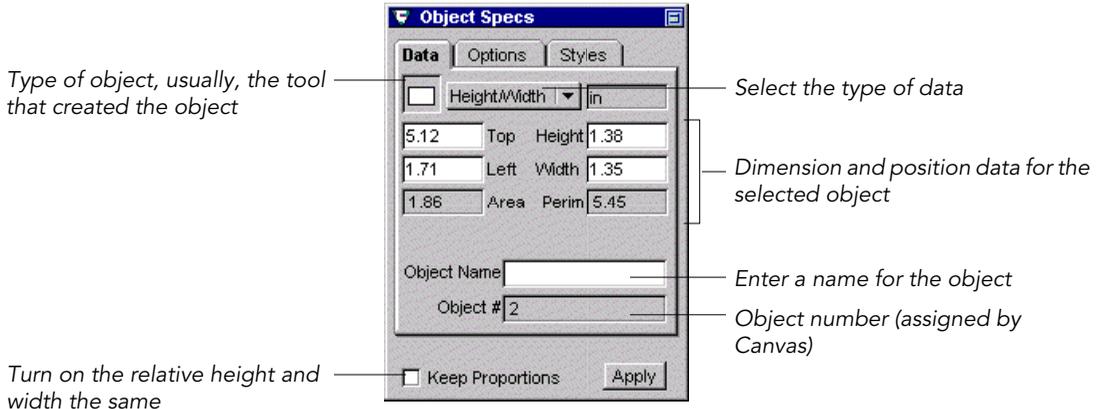
Data tab Displays a selected object’s type, position, and dimensions. The specific information depends on the type of object you select. For example, Canvas displays the angular size of arcs.

Styles tab Provides descriptions and examples of object styles, and lets you create, modify, and apply styles.

Options tab Lets you designate an object as non-printing, and contains advanced printing options, including overprinting and trapping for color separations. For more information on advanced printing options, see Canvas on-line Help.

Viewing and changing object data

The Data tab displays information for a selected object or group object. If you select a group object, you can change the group's size and coordinates but not an individual object within the group.



General dimension and position data for objects

Canvas describes an object's position and dimensions using the location, height, and width of the object's bounding box relative to the document rulers. For line objects, the Data tab shows the horizontal and vertical difference between the endpoints.

✓ Tip

If you want to display the Object Specs data with more significant digits, you can change the setting using the Preferences command in the File menu. If you want to use different measurement units, you can change them using the Document Setup command in the Layout menu.

In the pop-up menu at the top of the tab, you can choose what type of information you want to see.

- Choose Top/Bottom to display the position of the top, bottom, left, and right edges of the selected object, relative to the document rulers.
- Choose Height/Width to display the vertical and horizontal dimensions of the selected object.

You can change the values in the text boxes to resize or reposition the object. If Keep Proportions is checked, Canvas maintains the proportions of the object if you change either the height or width (on Mac, the calculation occurs when you press the Tab key or click Apply).

Area Shown when Canvas can calculate the area occupied by the object's bounding box.

Perim Shown when Canvas can calculate the perimeter, or distance around the object's bounding box.

Some additional information is available for specific types of objects, as shown in the following table.

Type of object	Data shown	Description
Line	Start/End Delta V/H Length/Angle	Position of the first and last endpoints of the line Differences in vertical and horizontal positions of the endpoints of the line Length of line and degree of pitch
Arc	Start ° Δ°	Starting point of the arc in degrees Length of the arc segment in degrees You can specify the coordinate system (standard or engineering) using the Preferences command in the File menu.
Rounded rectangle	Diag	Sets the roundness of the corners; can be a positive or negative value

Working with object styles

A style is a set of attributes you can apply to objects. Styles help you maintain consistency and make applying attributes easier. You can edit and reapply styles to objects, rather than editing each attribute.

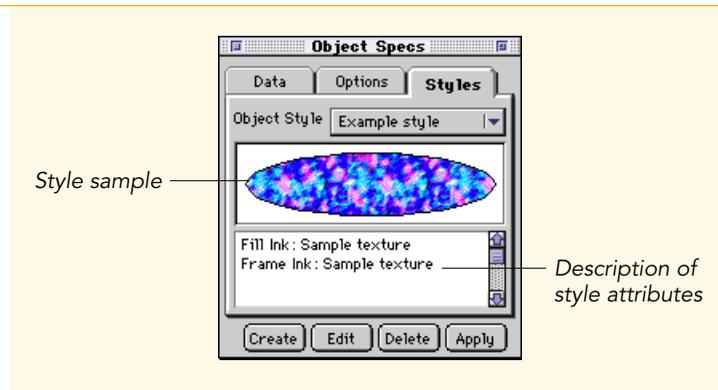
Object styles

The Styles tab in the Object Specs palette lets you create, apply, and edit object styles.

Object style. Select saved object styles from the pop-up menu.

The scroll list shows the fill, stroke, pen size, miter, dash, arrow and arrowhead settings for the selected style.

Create. Click to create an object style from a the attributes of a selected object.



Edit. Click to change attributes of the current style.

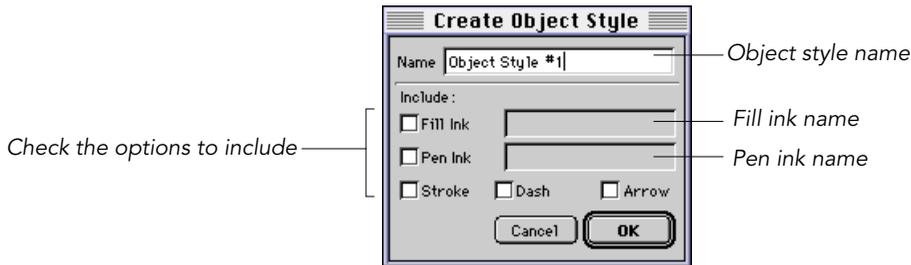
Delete. Click to delete the cur-

rent style.
Apply. Click to apply the current style to selected objects.

To create an object style

- 1 Select an object on which you want to base a style.

- 2 Click the Create button in the Object Specs palette.
- 3 In the dialog box, type a style name in the Name text box.
- 4 Select the check boxes for attributes you want to include in the object style and click OK to save the style.



The following attributes of a selected object can be saved as a style.

Fill Ink The fill ink of the object in the style. The name of the fill ink appears to the right of the check box.

Pen Ink The pen ink of the object in the style. The name of the pen ink appears to the right of the check box.

Stroke The stroke attributes of the object, such as pen size and miter, in the style.

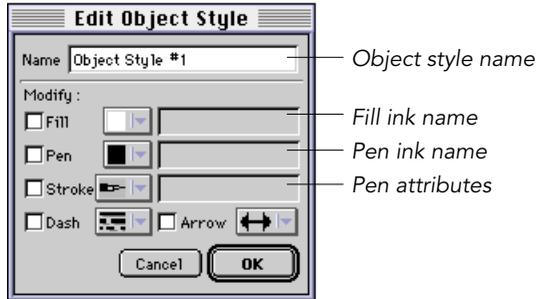
Dash The dash pattern of the object in the object style.

Arrow The arrowhead style of the object in the style.

To edit a saved object style

After you create an object style, you can modify it at any time.

- 1 To edit an object style, choose the style you want to edit in the Object Style pop-up menu.
- 2 Click the Edit button to open the Edit Object Style dialog box. The object properties for the selected style appear in the dialog box.
- 3 To change the name of the style, type a new name in the Name text box.
- 4 To add or remove attributes from the style, change the Fill, Stroke, Pen, Dash, or Arrow checkbox settings.
- 5 To change the style attributes, use the pop-up menus next to Fill, Stroke, Pen, Dash, or Arrow to select new settings.



◆ **To delete an object style:** In the Object Style dialog box, choose the name of the style you want to delete in the Object Style pop-up menu and click the Delete button.

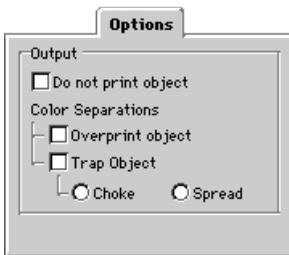
Setting print properties for specific objects

You can tell Canvas to treat specific objects differently when printing the document. The Options tab in the Object Specs dialog box lets you set objects to not print, overprint, or trap.

When performing color separations, you can set overlapping objects to overprint. In general, overlapping objects “punch” out an area from the object behind it. By turning the Overprint object setting on, you can tell Canvas to print overlapping colors without removing areas from the bottom object.

You can also tell Canvas to trap selected overlapping objects when printing separations. When objects of different colors overlap, there is the potential for a gap to appear between separated colors. Trapping overlaps colors slightly to close this gap.

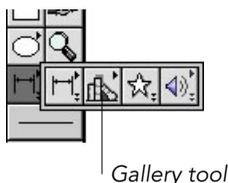
Canvas lets you specify two types of trap: choke and spread. A choke trap occurs when a background color closes a gap with another color in front of it. This gives the impression of slightly reducing the area of, or “choking,” the front object. A spread trap occurs when the front color expands to fill the gap with the back color.



MACRO OBJECTS AND CLIP ART

You can speed up many graphic projects by taking advantage of reusable macro objects and ready-made illustrations. This chapter describes how to use the Gallery palette to work with macro objects and the Canvas clip art collection.

About macro objects and clip art



The Gallery palette gives you access to macros and Canvas clip art. Press the Gallery tool in the Object toolbar to open the Gallery palette. To make the palette floating, drag it away from the toolbar.

Clip art is a name for ready-made illustrations. The Canvas clip art collection contains thousands of high-quality illustrations that you can use in any illustration, publication, or presentation. You can easily resize, change colors, edit, and apply special effects to the illustrations in the Canvas clip art collection, the same as you would any vector drawing or image.

The clip art illustrations provided with Canvas are stored in Canvas illustration documents. Each document contains one or several small illustrations. You can locate specific items and preview the illustrations using the Art tab of the Gallery palette.

Macro objects are illustrations that you store in the Macros tab of the Gallery palette. You can create a macro object from any vector, text, or paint object. After making an illustration a macro object, you can use the Gallery tool to place macro copies of the illustration. The copies are linked to the original macro object, and if you change the original, the copies also change.

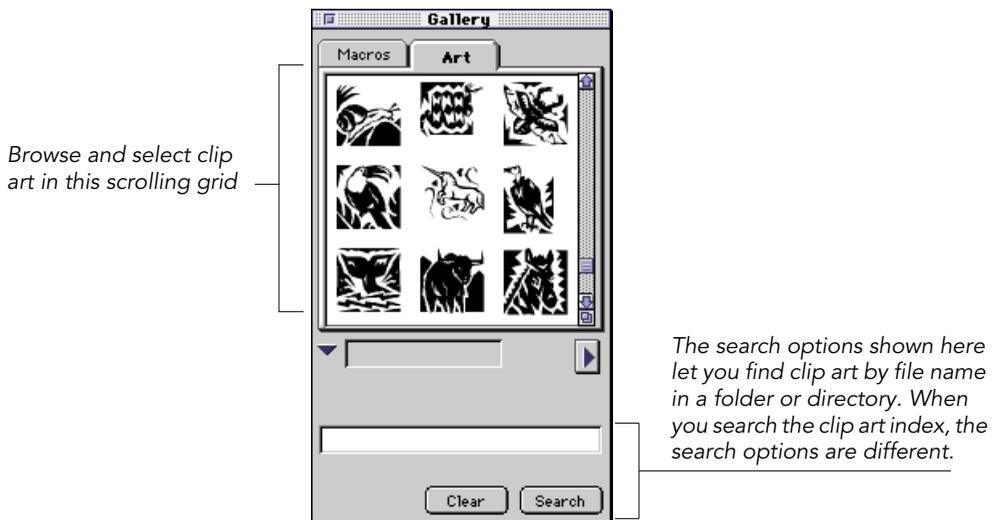
Macro objects make it easy to place and change frequently used illustrations. You can save time by creating macro objects from elements you intend to use repeatedly, such as logos, symbols, and floor plans. For example, after designing a logo, you can make the illustration a macro object and use the Gallery tool to place copies in your document. If you decide to change the logo, you can change all the copies at once by replacing the original macro object in the Gallery palette.

Adding clip art to Canvas documents

The Canvas software package includes an extensive collection of clip art ranging in topic from animals and plants to business and technical symbols. The clip art files are distributed among the CD-ROMs in the Canvas software package and are in Canvas file format.

The Art tab in the Gallery palette lets you browse Canvas clip art files, then choose an illustration and place it in a document. In addition, because Canvas clip art files are indexed, you can perform keyword searches to locate all clip art files pertaining to a particular topic, regardless of which CD-ROM a clip art file is on.

Note: If you're running the Mac OS and your computer has trouble recognizing the clip art CD-ROMs in the Canvas software package, make sure you have the extensions, Foreign File Access and ISO 9660 File Access, installed and active on your system.



To browse clip art in a folder

- 1 Press the Gallery tool in the Object toolbar to open the Gallery palette. Drag the palette away from the toolbox and click the Art tab to bring it to the front, if necessary.

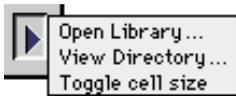
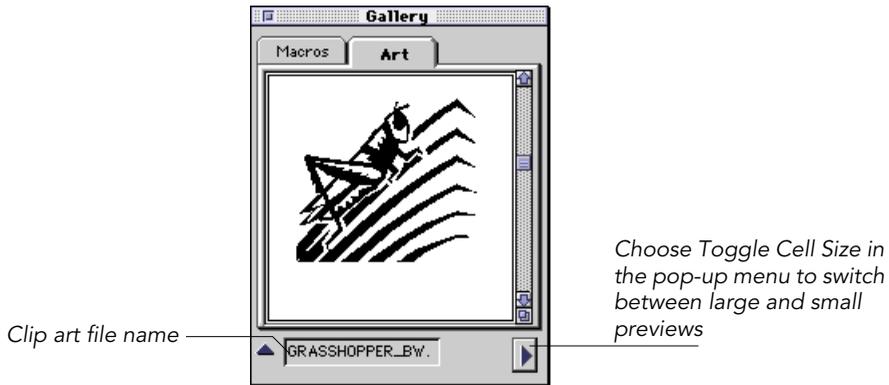
✓ **Tip**

On the Art tab, you can browse any Canvas documents that have been saved with previews. To save documents with previews, in the Save As dialog box, turn on “Create Preview” (Mac) or “Save Preview” (Windows).

2 On the Art tab of the Gallery palette, press the right-arrow button and choose View Directory in the pop-up menu.

3 In the dialog box, select any Canvas file in the directory or folder you want to browse and click Open. Thumbnail previews of the clip art illustrations in the folder or directory appear on the Art tab.

◆ **To toggle between large and small previews:** On the Art tab in the Gallery palette, select an illustration, press the right-arrow button and choose Toggle Cell Size in the pop-up menu.



Art tab pop-up menu

To find clip art by name in a folder

When you're browsing clip art on the Art tab, and you know the file name of an illustration you want to find, rather than scrolling through the tab or using View Directory to locate the file, you can use the search feature in the Gallery palette to find and select the illustration.

1 If necessary, follow the steps under “To browse clip art in a folder” on page 120.

2 On the Art tab, click the triangle button at the lower-left of the palette to show the search options.

3 In the text box, type the text you want to search for. When you perform the search, Canvas will find the clip art file in the folder or directory you're browsing that starts with the text you type.

4 To begin searching, click Search. Canvas selects the clip art illustration that meets the criteria. If more than one illustration meets the criteria, Canvas selects the first illustration it finds.

5 To remove the current search criteria so you can enter new criteria, click Clear.

To search the clip art index using keyword searches

This type of search is useful when you want to search the entire Canvas clip art collection, rather than a folder or directory, to find clip art by subject.

1 On the Art tab of the Gallery palette, press the right-arrow button and choose Open Library in the pop-up menu.

2 In the dialog box, locate the Canvas clip art index file you want to search and click Open; index files have the extension “.ndx” in the file name. After you locate the index file and click Open, previews of the clip art in the index appear on the Art tab and the Gallery palette changes to show the index search options.

3 Choose a search option in the pop-up menu.

Choose	To find
Matches	Exact matches of the name you type
Contains	Any name with the text you type
Starts with	Any name that begins with the text you type
Ends with	Any name that ends with the text you type

4 In the text box, type keywords to search for. You can type multiple keywords, separated by spaces, to find illustrations that match one or more keywords.

- You can tell Canvas to find art with *all* or *any* of the keywords by changing the “Search using And criteria” setting. For example, you can type “car tree.” With this setting off, Canvas searches for clip art of either cars *or* trees. With this setting on, Canvas searches for clip art of both cars *and* trees.

5 To begin searching, click Search. Canvas displays thumbnail previews of all clip art that meets the criteria.

6 To remove the current search criteria so you can enter new criteria, click Clear. When you click Clear after performing a search,

Canvas redisplay all of the clip art previews. This is the equivalent of performing a search for all clip art.

Placing clip art

After finding a clip art illustration you want to insert, you can place the illustration at its original size, or scale as you place it.

- ◆ **To place clip art:** Click a thumbnail preview in the Art tab to select the illustration you want to place.
 - To place clip art at its original size, click in the document where you want to place the upper-left corner of the illustration.
 - To scale clip art as you place it, drag the pointer to set the bounding box size. Canvas fits the illustration to the bounding box.

Note: When selecting clip art from the index, remember the Art tab shows clip art by subject, regardless of the CD-ROM an illustration is on. If you try to place clip art that isn't on the current CD-ROM, Canvas asks you to insert the CD-ROM containing that illustration.

Using commercial clip art packages

You can purchase many commercial clip art packages of illustrations and raster images. Commercial packages use standard and proprietary file formats. If you want to use third-party clip art, ask the manufacturer about the file format and verify that Canvas can successfully open the files. For more information, refer to the chapter “File and data exchange” on page 57.

Using macro objects

Macro objects can help you create illustrations quickly, uniformly, and precisely. Macro objects are especially useful for technical drawings, diagrams and other frequently used illustrations. For example, a landscape designer can create sets of macros for trees, shrubs, and structures. An electrical engineer can create macros for gates, resistors, and other circuit components. Project managers can build organizational charts with macros of various shadowed text boxes.

You can create, delete, and modify individual macro objects, and also save them as macro sets. You can store sets for specific projects, and load sets as you need them.

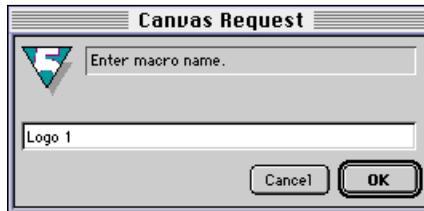
Macros are document-level objects. In other words, if you switch between two open document windows, each using a different macro

set, you will see the thumbnails in the Gallery palette switch between the two macro sets.

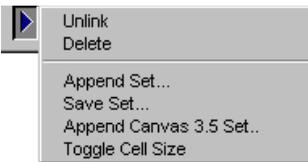
To create a macro object

You can convert nearly any Canvas object into a macro object by dragging it to the Macros tab of the Gallery palette.

- 1 Create the illustration that you want to use as a macro.
- 2 If necessary, press the Gallery tool in the Object toolbar to open the Gallery palette. Drag the palette away from the toolbox and select the Macros tab.
- 3 Drag the object into the window on the Macros tab. In the dialog box, type a name for the macro in the text box and click OK. A preview of the macro appears in the Gallery palette.



◆ **To delete a macro:** On the Macros tab in the Gallery palette, select the macro you want to delete. Press the arrow button on the bottom-right of the tab and choose Delete in the pop-up menu. The macro is removed from the palette but copies in the document aren't affected.



Macros tab pop-up menu

◆ **To toggle between large and small macro previews:** On the Macros tab in the Gallery palette, select a macro, press the right-arrow button and choose Toggle Cell Size in the pop-up menu.

Placing macro objects

After you create macros, you can place them in a Canvas document. You can insert them at their original size, or scale as you place them.

- ◆ **To place a macro object:** Click a preview in the Macros tab to select the macro illustration you want to place.
 - To place the macro at its original size, click in the document where you want the top-left corner of the macro to appear.

- To scale the macro as you place it, drag the pointer to set the size of the bounding box of the object you are placing. Canvas scales the object to fit the bounding box you specified.

To find a macro in the Gallery palette

- 1 On the Macros tab of the Gallery palette, click the triangle button at the lower-left of the palette to show the search options.
- 2 In the text box, type the text you want to search for. When you perform the search, Canvas will find the macro in the palette that starts with the text you type.
- 3 To begin searching, click Search. Canvas selects the macro in the palette that meets the criteria. If more than one macro meets the criteria, Canvas selects the first macro it finds.
- 4 To remove the current search criteria so you can enter new criteria, click Clear.



To find a macro in the palette, type the text you want to search for in the text box and click Search. Canvas will find the macro that starts with the text you type.

Editing macro objects

If you want to update all copies of a macro in a document, you can replace the original in the Macros tab. If you want to replace a macro with a copy based on that macro, you must first unlink the copy from the original. See “Unlinking macros,” next.

To edit the path of a macro copy, first select the copy and then choose Path►Convert to Paths in the Object menu or unlink the object (see “Unlinking macros,” next); both methods let you edit the object as a path, but they also unlink the object from the original macro.

To replace a macro in the Gallery palette

- 1 Create the object you want to use to replace the macro.
- 2 Drag the new object to the Macros tab and drop it on the macro you want to change.
- 3 When Canvas asks if you want to replace the existing macro, click Yes to change all copies of the macro to the new object.



Unlinking macros

By unlinking placed macros, you can prevent them from changing when the macro in the Gallery palette is modified. You also make it possible to use a placed macro to modify its parent macro and to use path-editing techniques.

◆ **To unlink a macro copy:** In the document, select the macro copies you want to unlink from the original. In the Gallery palette, choose Unlink in the pop-up menu.

Using macro sets

You can save macros in named sets for use with specific projects or types of illustrations. Using this feature, you can load only the macros that you need at the time.

◆ **To save all macros in the palette as a set:** On the Macros tab of the Gallery palette, press the right-arrow button and choose Save Set in the pop-up menu. In the dialog box that appears, type a name for the set, specify a location to save the set, and click Save.

◆ **To load a macro set into the palette:** On the Macros tab of the Gallery palette, press the right-arrow button and choose Append Set in the pop-up menu. In the dialog box that appears, specify the file name and location of the macro set you want to load, and click Open. The macro set is added to any macros already in the palette.

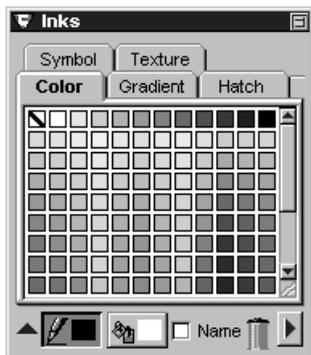
◆ **To load a Canvas 3.5 macro set into the palette:** On the Macros tab of the Gallery palette, press the right-arrow button and choose Append Canvas 3.5 Set in the pop-up menu. In the dialog box that appears, specify the file name and location of the Canvas 3.5 macro set you want to load, and click Open. The macro set is added to any macros already in the palette.

INKS: COLORS AND PATTERNS

Solid colors and multi-colored patterns that you apply to vector objects are called *inks* in Canvas. You can apply inks to the interiors and outlines of vector objects and text characters.

This chapter describes how to create and apply inks, from basic solid color inks to custom multicolored inks. It also explains how to use various color systems to define inks.

The Inks palette



Inks palette, with Color tab selected

You use the Inks palette to apply inks to objects, select the current inks for new objects, and create new inks. To open the Inks palette, press the pen or fill ink icon at the bottom of the toolbox. For details, see “Applying preset inks” on page 130.

The Inks palette contains five types of inks on separate tabs. Each tab has preset inks and a manager you can use to customize inks.

Color inks Color inks (on the Color tab) are solid colors. You can use CMYK, RGB and HSL color systems, and commercial color reference systems, to define color inks.

Gradient inks Gradient inks (on the Gradient tab) are smooth blends between two or more colors.

Hatch inks Hatch inks (on the Hatch tab) are patterns of lines. Hatch inks can incorporate other pen and fill inks.

Symbol inks Symbol inks (on the Symbol tab) are patterns of vector objects. Symbol inks can include any other ink as a background.

Texture inks Texture inks (on the Texture tab) are patterns of raster images. Texture inks can include other inks as backgrounds.

How inks apply to objects

You can apply inks to two areas of vector objects and text: *fill inks* cover the interior of objects and text characters; *pen inks* cover the outline stroke of objects and text characters. You can apply one fill ink and one pen ink to an object and to a text character.

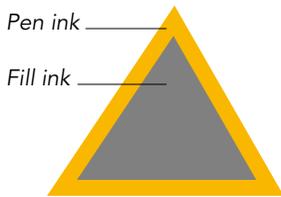
✓ Tip

You can also apply inks to the background of a text object. See the Tip on page 295.

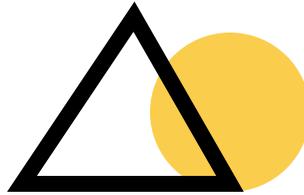
You can apply different types of inks to an object — a gradient fill ink and a texture pen ink, for example. If an object has neither a pen ink nor a fill ink, the object is not visible.

Applying fill inks to open and closed paths

Whether a vector object path is open or closed affects the appearance of its fill ink. In a closed path, the ink completely fills the object's interior; in an open path, the ink fills inside the path as if the path were closed by a straight segment between its endpoints.



This object has a pen ink and a fill ink; both are basic color inks.



The triangle has a pen ink but no fill ink, so the circle in back is visible through it.



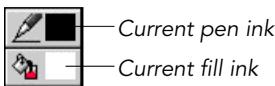
This path has a pen ink and no fill ink.



The path above with a pen ink and a fill ink.

Default and current inks

By default, Canvas applies white fill ink, black pen ink, and a 1-point pen stroke to new vector objects. For new text, Canvas applies black fill ink, no pen ink, and no stroke to the text characters.



The *current inks* are the inks that Canvas applies to new vector objects you draw. The squares in the pen ink and fill ink icons in the toolbox display the current inks. When you apply inks to existing objects, the current inks do not change. For text, you must set current inks using type styles; see “Applying type styles” on page 282.

◆ **To change the current pen or fill ink:** Make sure no objects are selected in the document, then press the pen ink or fill ink icon to select a current ink in the Inks palette.



Color Dropper tool

Color Dropper tool

The Color Dropper tool lets you pick up colors and inks from anywhere on the screen, and make them the current pen or fill ink. You can also use the Color Dropper tool to apply colors and inks to existing objects.

The Color Dropper helps you make sure that you use colors consistently throughout a document. In addition, this tool can help you identify colors from documents that you import into Canvas.

The Color Dropper is also very useful in photo-retouching, letting you match colors, tones, and shades in images. See “Picking colors from images and objects,” page 311.

To use the Color Dropper to select a current ink

In vector objects and text, the Color Dropper can pick up multi-colored textures, gradients, hatches, and symbols as inks; in paint objects, the Color Dropper selects the solid color of the pixel you click.

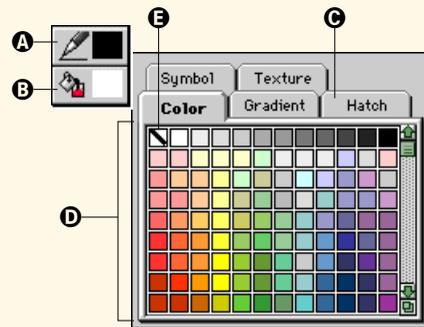
- 1 Select the Color Dropper tool in the Effects Tools toolbar.
- 2 Click an object to use its ink as the current fill ink. Option-click (Mac) or right-click (Windows) an object to use its ink as the current pen ink.
 - ◆ **To drop the current color on an object:** With the Color Dropper tool, Ctrl-click an object to apply the current fill ink to an object. Ctrl+Option-click (Mac) or Ctrl+right-click (Windows) an object to apply the current pen ink to a stroke.
 - ◆ **To pick up colors from outside the Canvas window:** With the Color Dropper tool, drag from inside the Canvas window to other areas of the screen. As long as you hold down the mouse button, the Color Dropper tool stays active and samples colors. Look at the ink icons in the toolbox to see what color the tool is sampling.

Applying preset inks

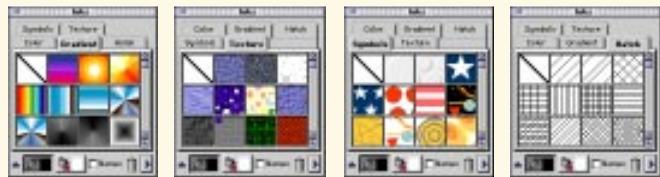
A grid on each tab in the Inks palette holds preset inks that you can apply as pen or fill inks.

- A Pen ink icon.** Press to select pen inks for object outlines.
- B Fill ink icon.** Press to select fill inks for the insides of objects.
- C Ink tabs.** Select the type of ink you want to apply.
- D Preset inks.** Select an ink in the grid. Use the scroll bars if all the preset inks aren't visible.
- E No ink.** Click this tile to remove inks, or to make the default for new objects "no ink."

- To apply inks to existing objects, select the objects and then choose pen and fill inks.
- To change the inks that Canvas applies to new vector objects, deselect all objects, then choose pen and fill inks. The ink icons in the toolbox



The Inks palette opens when you press either of the ink icons in the toolbox. Select a tab and then an ink in the grid.



Preset inks appear in the Inks palette on five tabs: Color, Gradient, Texture, Symbol, and Hatch.

show the current inks (these inks don't apply to text).

Because pen inks are applied to the strokes of objects, the appearance of an object's pen

ink is affected by the shape of the object's stroke. For more information, see "How inks affect strokes" on page 145.

Using the Inks palette in a floating window

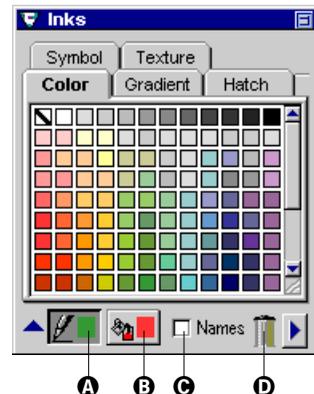
To keep the Inks palette open, press either ink icon in the toolbox and drag the palette away. The palette remains open in a floating window.

To apply inks to selected objects: Click the pen ink (A) or fill ink (B) icon, then click a preset ink. If you click an ink with no objects selected, the ink becomes the current ink applied to new objects.

To drag and drop inks: Drag an ink from the grid to an object's outline (for a pen ink) or the inside of the object (for a fill ink).

Names: Check this box (C) to show the names of inks in the grid.

To remove an ink from the palette: Drag it to the trash can (D).



Creating and customizing inks

If preset inks don't meet your needs, you can use the Inks configuration managers to create your own inks. Managers are sets of controls at the bottom of the tabs in the Inks palette. You can flip open the managers to create inks, adjust inks in objects, and change the palette's preset inks.

Described next are ways to change the Inks palette and use Inks managers in general. The rest of the chapter explains how to customize color inks, gradient inks, hatch inks, symbol inks, and texture inks.

Changing the Inks palette

You can do the following to customize the Inks palette:

- Delete preset inks you no longer want to use.
- Add new inks to the palette.
- Save the preset inks on each tab in an inks file.
- Load inks from a file to replace the preset inks.
- Append inks from a file to add them to the palette.

When you add or delete inks in the palette, the changes are recorded in a Canvas Settings file, not in the Canvas document, so the palette contents remain the same the next time you use Canvas.



◆ **To save, load, or clear preset inks:** Press the button at the bottom-right corner of the palette and choose a command in the pop-up menu. The commands include the name of the current ink tab, so the command on the Color tab is Load Colors, for example.

You can save, load, and append inks on one tab at a time in the Inks palette. When you load or append inks, if you select a file that doesn't contain inks from the current tab, Canvas won't load the inks.

Load... Loads inks from a palette file, replacing the tab's preset inks. In the dialog box, select a file and click Open.

Append... Adds inks from a palette file to the preset inks on the current tab. In the dialog box, select a palette file and click Open.

Save... Saves the current tab's preset inks in a palette file. In the dialog box, select a location, type a file name, and then click Save.

Clear... Removes the preset inks (except "no ink") from the current tab. On the Color tab, Canvas restores black and white (CMYK) inks after clearing all the preset inks.

Using Inks managers

Open the Inks managers when you want to create inks or change the preset inks on the tabs in the Inks palette.

A Click to flip the managers open or closed. If the Inks palette isn't open, first press either of the ink icons in the toolbox and drag the palette away.

B Preview. This box shows the current ink. The preview changes as you modify the ink. When you click the Apply button, Canvas applies this ink. You can also drag the ink from the preview box to objects and into the grid of preset inks.

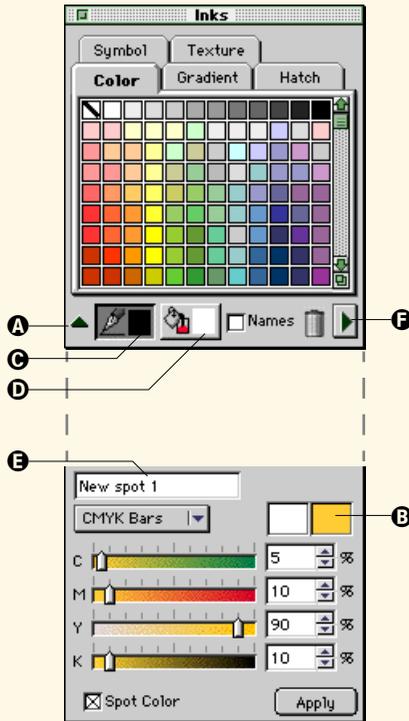
To edit an object's ink:

Click the pen (C) or fill icon (D), then select an object; its ink becomes the current ink in the manager. Modify the ink, then click Apply to apply the modified ink to the object.

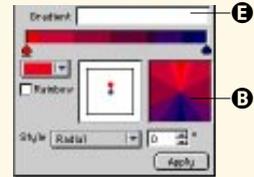
To make a new ink:

Use the manager to customize the current ink. To name it, type in the text box (E). Then do any of the following:

- To add the ink to the palette, drag from the preview box (B) to the grid of preset inks.
- To make the ink the default, click the pen (C) or fill (D) icon, then click Apply.
- To apply the ink to a non-selected object, drag from the preview box (B) to the inside or outline of the object.



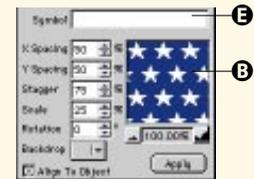
Color manager



Gradient manager



Texture manager



Symbol manager



Hatch manager

When you create a new ink, be sure to add it to the palette or drag it to an object before selecting anything. Otherwise, the selection's ink replaces the new ink in the manager.

A pop-up menu (F) contains commands that let you save inks and load inks on the current tab. You can also clear the current tab's preset inks to start with an empty palette.

Color inks

You use the Color tab in the Inks palette to apply solid color inks. The Color manager lets you customize color inks, use several color reference systems, and specify spot colors.

For general instructions on using the Inks managers, see “Creating and customizing inks” on page 131.

Choosing color systems

When the Color manager is open, you can choose from six color systems to define color inks. Canvas also offers several color models, or views, of the color systems. When you want to create a color ink, you choose a color system and color model.

CMYK The default color system in Canvas is CMYK, from the four-color process used in commercial printing. In this system, you define colors as mixtures of cyan (C), magenta (M), yellow (Y), and black (K). To work with CMYK colors, you can choose CMYK Bars, CMYK Swatch, and CMYK Tints color models.

RGB Computer video displays mix red (R), green (G), and blue (B) to create colors. The RGB system is appropriate for graphics you will display on a monitor. You should avoid RGB colors in documents intended for commercial printing. To work with RGB colors, you can choose RGB Bars and RGB Tints color models.

HSL This system defines colors using hue (H), saturation (S), and lightness (L) values. It lets you change the saturation (intensity) and lightness (amount of black) in a color without changing its basic hue (such as red, orange, or green). To work with HSL colors, you can choose HSL Bars and HSL Wheel color models.

Commercial color reference systems

In the Color manager, you can use commercial reference system colors. Be sure to consult printed reference guides (available from the manufacturers) to view the actual printed appearance of these colors.

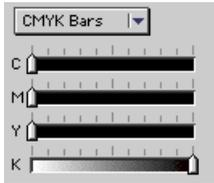
PANTONE The PANTONE System includes textile colors and colors for spot- and process-color printing on various paper stocks.

Toyo The Toyo Ink system provides more than 1,000 colors in nine sets for process-color printing on various paper stocks.

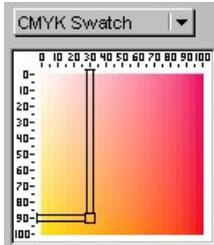
TRUMATCH A four-color process matching system, TRUMATCH lets you select more than 2,000 colors based on 50 hues with 40 tints and shades of each hue, plus four-color grays.

✓ Tip

Colors displayed on a monitor can only approximate the appearance of printed colors. Be sure to discuss color reproduction with your commercial printer and obtain accurate proofs for color projects.



Bars model



Swatch model



Wheel model

Choosing color models

When you choose a color system in the pop-up menu in the Color manager, you can also choose one of the following color models.

Bars Use sliders or type in values to create colors. Available for CMYK, HSL, and RGB color systems.

Swatch Pick colors from a swatch grid that displays blends of two, three, or four colors in the CMYK system.

Tints Specify a tint color and amount in CMYK and RGB color systems.

- Tinting with white screens the original color; the screen percentage is 100 minus the tint value (80 percent tint value results in 20 percent of the original color, for example).
- For other tint colors, Canvas multiplies the tint value by the difference between the original and tint color values, and then adds the result to the original color values.

Wheel In the HSL color system, view hue and saturation on a color wheel and use a slider to adjust lightness, or enter numeric values for all three components.

Creating color inks

You can create new inks to expand the preset inks selection and convert inks from one color system to another.

- 1 If necessary, select the Color tab and open the Color manager in the Inks palette. The current ink appears in the preview box.
- 2 Choose a color system and model in the pop-up menu.
- 3 Use the Color manager controls to change the ink's color values. To restore the original ink, click the left preview box.
- 4 To name the ink, type the name in the text box. To define it as a spot color, check the Spot Color box.
- 5 To apply the ink to non-selected objects, drag it from the preview box to the objects. To add the ink to the palette, drag it from the preview box to the grid at the top of the tab. Canvas adds the color at the end of the preset inks grid.

Color manager controls

The Color manager controls depend on the selected color system and model. Some controls are common among the different color models.

A Current ink.

B Last-applied ink.

C Bars. Use the sliders, or enter values in the text boxes, to specify color values.

- RGB values go from 0 to 255.
- CMYK values go from 0 to 100 percent.

- HSL values go from 0 to 360 degrees (hue) and 0 to 100 percent (saturation and lightness).

D Spot Color. Check to set up a spot color. Spot colors print on separate plates when you make color separations.

E Tint Color. Select the color to apply to the current color.

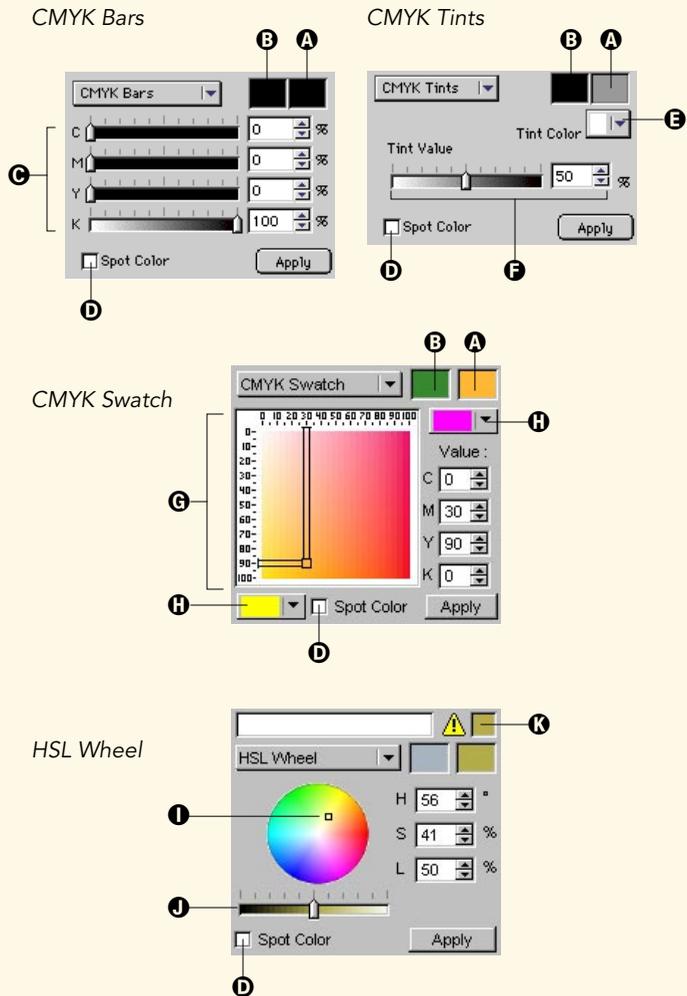
F Tint value. Enter the percentage of tint to be applied.

G Swatchbook. Shows colors made from 0-100% mixtures of two CMYK colors. To select a color, click in the swatchbook; the color values appear in the text boxes.

H Select the two colors for the swatchbook. To add a third or fourth color, enter percentages in the C M Y K text boxes.

I Color wheel. Click in the wheel or drag the selector to pick a color, or enter values in the H S L text boxes.

J Lightness. Drag the slider,



or enter a number in the L text box, to set the lightness for the entire color wheel.

K Gamut warning. When the current color can't be printed with CMYK inks, a warning sym-

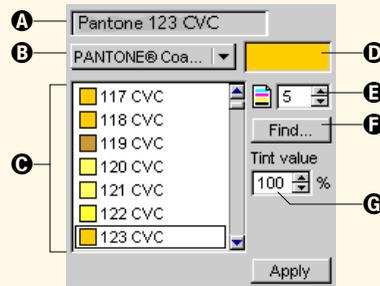
bol and color box appear. Click the color box to replace the current color with the closest color that is within the CMYK gamut.

Gamut warnings appear only in RGB and HSL systems.

Color reference systems

When you choose a PANTONE, Toyo, or TRUMATCH reference system color set in the Color manager, you can search for and select colors by name.

- A Color name.** The selected color's name. Names of reference colors can't be changed.
- B Color system.** Choose the reference system you want to use in the pop-up menu.
- C Color list.** Click a color in the list to select it. Use the scroll bar to scroll the list.
- D Current color preview.**
- E Page.** The page number of colors shown in the color list. Enter a number to go to that



page.

F Find. Click to select a color by name. In the Find dialog box, type the color name or number and click OK. Canvas selects the color (if found) in the color list.

G Tint Value. For PANTONE colors (except process colors), enter a screen percentage to

apply to the selected color. Use 100% for solid color and lower values for screens of the solid color.

Spot Color option. Available with some color systems, this option lets you specify colors to use as spot colors in separations.

Creating custom colors in pop-up palettes



Color icon

In Canvas, dialog boxes and palettes that let you choose colors have a color icon that opens a pop-up palette. This color icon appears in several places throughout the program, including image-editing features like the Channel Options dialog box, and vector effects like the Extrude palette and Gradient manager.

When you press (Mac) or click (Windows) the color icon to open the palette, you see the preset colors currently on the Color tab of the Inks palette. If the color you want isn't in the pop-up palette, you can specify a new color in two ways:

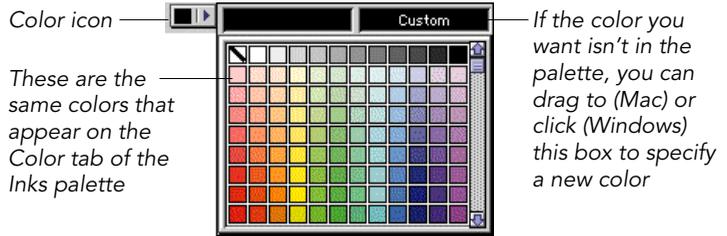
- Use the Color manager in the Inks palette to create a new color, then add it to the preset colors in the palette (see “Using Inks managers” on page 132 for instructions). The new color will appear in the pop-up color palette throughout the program. This is the method you should use if you want to use the color more than once.

Tip

Mac OS only: To open the Color Editor quickly, you can Option-click a color icon.

This is how the color icon appears when you press (Mac) or click (Windows) it to open the palette.

- In the pop-up color palette, drag to (Mac) or click (Windows) the Custom box to open the Color Editor dialog box, where you can create a new color without adding it to the palette. Use this method if you don't need to use the color again.



The Custom box lets you use new colors immediately, without having to switch back and forth between a dialog box and the Inks palette. It's also useful when you want to use a color for a specific purpose, but don't want to clutter the color palette with colors you'll only use once.

The Custom box appears in pop-up color palettes in the following dialog boxes and palettes:

Inks	Gradient manager Hatch manager (pen color pop-up only)
Strokes	Neon manager Parallel manager
Layers	Layer Options dialog box
Color calibration	Gamut Warning dialog box
Image editing	Duotone Options dialog box New Channel dialog box Channel Options dialog box Create Image dialog box
Effects	Extrude palette

To create a custom color in a pop-up palette

- 1 In the pop-up color palette, choose the Custom option to open the Color Editor dialog box. This dialog box is almost identical to the Color tab in the Inks palette, described on page 134.
- 2 To use a different color model or color system, choose an option in the pop-up menu. Depending on which option you

choose, the dialog box shows a different set of controls; see “Color manager controls” on page 135 for more information.

✓ Important

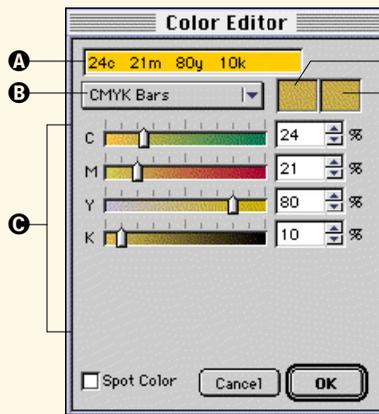
If you plan to export a Canvas document to another application in EPSF format and produce spot color separations, make sure the names of spot colors in Canvas exactly match the names of the spot colors in the other application. Any variation will cause problems.

- 3 Use the color controls to create a custom color.
- 4 To specify that you want the color you define to be a spot color, make sure the color is named in the text box at the top, then turn on Spot Color.
- 5 When you have the color you want, click OK. The color appears in the palette icon.

Color Editor dialog box

You can choose the Custom option in a pop-up color palette to open the Color Editor dialog box.

- A Type a name for the color in this text box.
- B Choose a color model or reference system in this pop-up menu.
- C Use the controls to specify a color. The available controls depend on the option you choose in the pop-up menu (B); see “Choosing color models” on page 134 for information on the different options.
- D Current selected color that appears in the color palette icon. Click to revert the settings in the dialog box to this color.



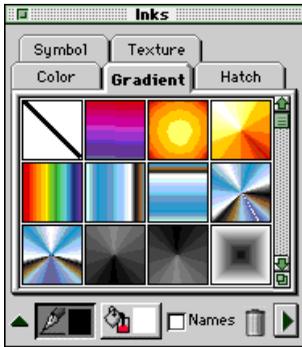
• CMYK Bars CMYK Swatch CMYK Tints
RGB Bars RGB Tints
HSL Bars HSL Wheel
Pantone® Coated Pantone® Uncoated Pantone® Pro Sim Pantone® Process Pantone® Textile
TRUMATCH
TOY0c5p.v101 TOY0jt2.v101 TOY0ms6.v101 TOY0pc.v132 TOY0qc4.v101 TOY0sep.v101 TOY0tmr.v101 TOY0tp3.v102 TOY0xas.v101

Color models and reference systems in the pop-up menu (B)

- E Preview of the custom color you define

Spot Color. Turn on to define the custom color as a spot color.

Gradient inks



Gradient tab in the Inks palette

A gradient is a blend (or “ramp”) from one color to another. You use the Gradient tab in the Inks palette to apply gradient inks. The Gradient manager lets you customize gradient inks.

For general instructions on using the Inks managers, see “Creating and customizing inks” on page 131.

Getting the best results

The appearance of gradient inks depends on several factors:

Display A gradient looks less smooth on a monitor that displays 256 colors than on one that displays thousands or millions of colors.

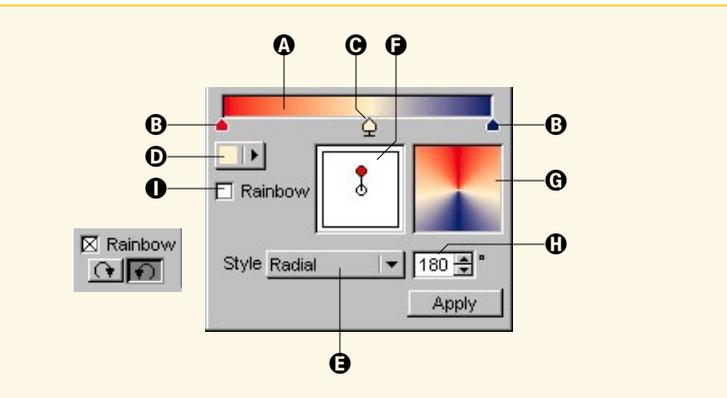
Color variation The more extreme the difference in colors, the coarser the gradient appears.

Object size When a gradient has large color transitions, it appears smoother in an object that is large enough to show all the transitions.

Gradient manager

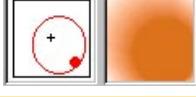
When you create a gradient, you choose a gradient style and the colors to blend.

- A** The bar shows the gradient color sequence.
- B** End pointers indicate the start and end colors. These can't be moved or deleted.
- C** Double-click in the bar to add an intermediate color pointer (📍). You can drag a pointer to adjust the color spacing. To delete a color, drag its pointer to the end of the bar
- D** Choose a color in the pop-up palette for the selected pointer (📍). You can choose a preset color or define a custom color; see “Creating custom colors in pop-up palettes” on page 136.

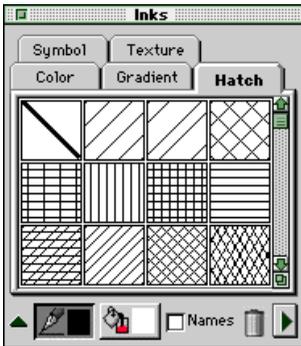


- E Style.** Choose a gradient style from the pop-up menu. See the table below for shape and editing information.
- F** You can drag the controls in this edit box to set the gradient shape, angle, and center.
- G Gradient preview.**
- H Angle.** For Radial and Directional styles, enter the gradient angle in the text box, or drag the solid dot handle in the edit box.
- I Rainbow.** Check this box to include the sequence of hues on the color wheel between the specified colors. Click a direction button to specify which direction to travel around the color wheel to create the rainbow hue sequence.

Gradient styles and editing features

Style	Appearance and edit controls	Edit box
Radial	Colors sweep in a circle around the center. To move the center point, drag the open dot. To set the starting angle, drag the solid dot or enter the angle (0 to 360 degrees) in the text box.	
Directional	Linear gradient in which colors blend in the direction you specify. To set the gradient orientation, drag the solid dot, or enter an angle from 0 to 360 degrees in the text box.	
Shape	Gradient conforms to basic object shapes. To move the gradient center, drag the rectangle. To resize the center area that contains the end color, drag the solid handle and resize the rectangle.	
Rectangular	Rectangular-shaped gradient. To move the gradient center, drag the rectangle. To resize the center area that contains the end color, drag the solid handle and resize the rectangle.	
Elliptical	Elliptical-shaped gradient. To move the gradient center, drag the oval. To resize the center area that contains the end color, drag the solid dot and resize the oval.	

Hatch inks



Hatch tab in the Inks palette

You use the Hatch tab in the Inks palette to apply hatch inks. The Hatch manager lets you customize hatch inks. For general instructions on using the Inks managers, see “Creating and customizing inks” on page 131.

Hatch inks are patterns made of groups of lines. You can specify the number of line groups and the angle, offset, and origin of each group. You can assign a pen size, color, and dash to each line group, and you can select a fill ink to be the background of the hatch ink.

Hatch inks are often used in illustrations to distinguish different materials in cross sections, machine diagrams, and maps.

To select a line group for editing

When you create a hatch ink in the Hatch manager, click a line in the edit box to select the line group. Selection handles appear where the selected line group intersects the edit box.

Hatch manager

When you create a hatch ink, you can set the number of line groups and other attributes.

A Preview. Click a line group in the preview box to select it. Tiny handles appear where the selected group meets the edge.

B Pen color. Choose a color for the selected line group in the pop-up menu. You can choose a preset color or define a custom color; see “Creating custom col-

ors in pop-up palettes” on page 136.

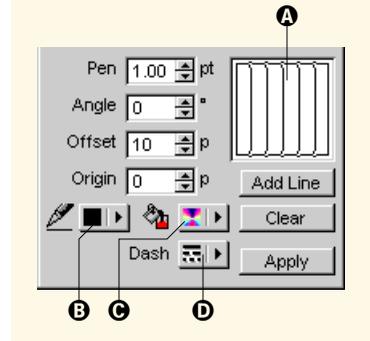
C Fill ink. Select an ink to use as the hatch ink background.

D Dash. Choose a dash pattern for the selected line group.

Add Line. Click to add a new line group to the preview box.

Clear. Click to delete the selected line group (unless only one group is present).

See the next section for infor-



mation on setting Pen, Angle, Offset, and Origin.

✓ Tip

If a hatch pattern overlaps the edges of an object, change the Pen value in the Hatch manager to make the width of the hatch lines smaller than the pen size of the object’s stroke.

Line group attributes

You can set the following attributes for each line group in a hatch ink. To change an attribute, select the line group you want to change by clicking it in the preview box in the Hatch manager, and then enter a new value in the appropriate text box.

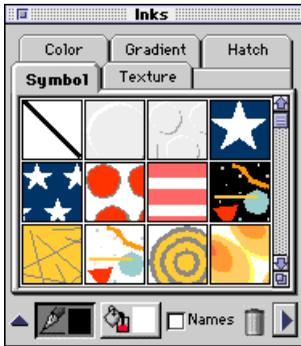
Pen The width in points (1/72 inch) of each line in the selected line group.

Angle The angle in degrees of the selected line group relative to vertical. When you add a line group, the angle is initially 0 degrees.

Offset The horizontal starting position of the line group, measured in points from the left edge of the preview box. Increasing this value moves the line group to the right.

Origin The vertical starting position of the line group, measured in points from the top of the preview box. Increasing this value moves the line group downward.

Symbol inks



Symbol tab in the Inks palette

You use the Symbol tab in the Inks palette to apply symbol inks. The Symbol manager lets you customize symbol inks. For general instructions on using the Inks managers, see “Creating and customizing inks” on page 131.

A symbol ink is a pattern of vector objects. You can control the spacing and position of the objects in a symbol ink.

Creating symbol inks

You can create a symbol ink from any vector objects, as well as text objects, in a Canvas document. You can use any of the Canvas drawing tools to create vector objects for a symbol ink. You can apply inks and strokes to the objects before bringing them into the Symbol manager to create a new symbol ink.

- 1 Select the vector or text objects you want to use in a symbol ink. You can select more than one object, including group objects.
- 2 Drag the selected objects from the document into the preview box in the Symbol manager.
- 3 Adjust the settings for the symbol ink in the Symbol manager.
- 4 To store the new symbol ink in the palette, drag the ink from the preview box to the grid area at the top of the Symbol tab.

Symbol manager

When you create a symbol ink, you can adjust the position and spacing of the objects and apply a backdrop ink.

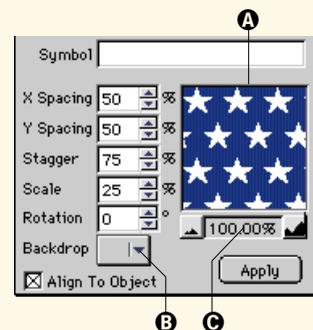
A Preview box. To create a new ink, drag vector or text objects to the preview box. Objects you drag to the box replace the current contents.

B Backdrop. Select a background ink in the pop-up menu. You can select any ink, including a color, gradient, hatch, texture,

and symbol ink. The ink you select appears behind the objects in the symbol ink.

C Preview zoom. Click the left button to reduce or the right button to enlarge the preview.

Align To Object. Turn on this option to keep a symbol ink in the same position if the object moves. Turn it off to let overlapping objects share a symbol ink without a gap.



Symbol spacing and position settings

In the Symbol manager, you can adjust the following settings to fine-tune a symbol ink.

Spacing These values set the distance between objects in the symbol pattern as a percentage of the size of the original objects. For example, a spacing value of 100 percent makes the distance between the objects equal to their size.

X Spacing is the horizontal distance between objects.

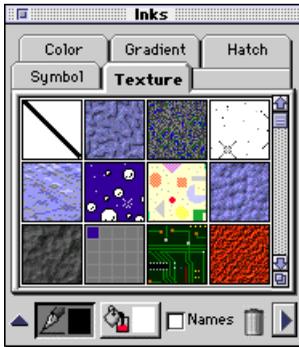
Y Spacing is the vertical distance between objects.

Stagger A positive value offsets the second row of objects horizontally relative to the first row. To keep all objects aligned, set Stagger to zero. To align alternating rows of objects, enter a higher Stagger value. To create a pattern in which the objects are spread out and objects in alternating rows are aligned with the gaps in the rows above, set the X Spacing and Stagger values to 100 percent.

Scale The percentage of the original object size for the symbol ink. A value of 100 percent maintains the original object size. To reduce the objects, enter a value smaller than 100 percent. To enlarge the objects, enter a value greater than 100 percent.

Rotation The amount of rotation, specified in degrees, that Canvas applies to the original objects.

Texture inks



Texture tab in the Inks palette

You use the Texture tab in the Inks palette to apply texture inks. The Texture manager lets you customize texture inks. For general instructions on using the Inks managers, see “Creating and customizing inks” on page 131.

A texture ink is a pattern of raster images. You can control the spacing, scaling, rotation, and offset of the images in a texture ink.

Canvas assembles a texture ink by repeating an image in rows and columns, as if it were a grid of rectangular tiles. If you enter spacing values that spread the images apart, you create gaps between the image tiles; you can also include a background ink that will show through the gaps.

Creating texture inks

You can create a texture ink from any raster image object.

- 1 Drag an image from the document into the preview box in the Texture manager in the Inks palette.
- 2 Adjust the settings for the texture ink in the Texture manager.
- 3 To store the new texture ink in the palette, drag the ink from the preview box to the grid area at the top of the Texture tab.

Texture manager

When creating a texture ink, you can set the spacing and offset of image tiles and choose a background ink.

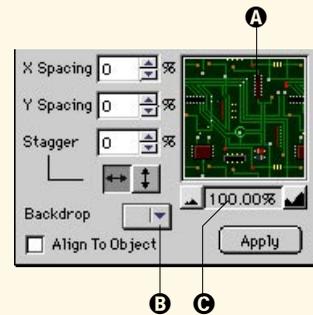
- A Preview box.** To create a new ink, drag an image to the preview box. The image replaces the current contents.
- B Backdrop.** You can choose a background ink in the pop-up menu. The ink appears only in gaps between the image tiles.
- C Preview zoom.** Click the left button to reduce or the right

button to enlarge the preview.

Spacing. Enter the amount of space between tiles as a percentage of the tile size. X Spacing is space between columns; Y Spacing is the space between the rows of tiles.

Stagger. Select the horizontal button (left) or vertical button (right) and enter the distance (as a percentage of tile size) to shift the tiles.

Align To Object. Turn on this option to keep a texture in the



same position if the object moves. Turn it off to let overlapping objects share a texture without a gap.

STROKES: OUTLINE EFFECTS

When you create objects with drawing tools, Canvas applies attributes set in the Strokes palette to the objects. A *stroke* is a line centered on the path of vector objects or the outline of type. You can shape a stroke with standard and calligraphic pens, parallel lines, even neon tubes. You can also add dashes and arrowheads to strokes.

This chapter explains basic stroke settings, how to customize strokes, and how to apply strokes to objects and text.

Types of strokes



Pen



Parallel line



Neon



Arrow



Dash

Canvas has three basic types of strokes that you can use to create unlimited variations. Canvas groups stroke settings on three tabs in the Strokes palette.

Pen Strokes made of a single line. You can specify the width, shape (standard or calligraphic), type of line joins, and shape of end caps.

Parallel Strokes made of two or more lines. You can specify width, dashes, colors, and spacing.

Neon Strokes shaded like glowing tubes. You can specify width, colors, tube shape, line joins, and end caps.

Arrows and dashes can be applied to strokes for additional effects. Two tabs in the Strokes palette contain settings for these attributes.

Arrow You can use preset or custom arrowheads that appear at the endpoints of each path segment stroke.

Dash You can apply preset or custom dash sequences that divide solid strokes into solid and blank segments.

How inks affect strokes

You define the colors that apply to strokes separately from the stroke settings. The pen ink (specified in the Inks palette) and the stroke settings together produce the appearance of an object's outline. The pen ink is the color (or pattern) that "paints" the object's stroke. Therefore, the object must have a visible pen ink for the stroke to be visible. Conversely, the object must have a stroke for the pen ink to be seen.

Some inks can make strokes invisible. If the pen ink is set to “no ink,” the stroke won’t be visible. Also, if the pen ink is set to white or a color that matches the background, the stroke could disappear against the background.

Applying strokes

The Strokes palette is the control center for all aspects of strokes. You can use the Strokes palette to apply strokes to objects, create custom strokes, add strokes to the palette, and save strokes in files that you can later load into the palette.

Preset strokes and controls for customizing strokes are on the Pen, Parallel, and Neon tabs in the Strokes palette. Presets and controls for customizing arrows and dashes are on the Arrow and Dash tabs.

Current stroke

The strokes icon in the toolbox shows a sample of the *current stroke*, the stroke that Canvas applies to new vector objects you create. For example, if the current pen stroke is 3 points wide, new objects you draw will have a 3-point pen width. Canvas does not apply the current stroke to text; see “Applying strokes to text,” next.

To change the current stroke, simply deselect all objects and apply the stroke you want; the stroke icon in the toolbox shows the new current stroke. If you select an object and change its stroke, however, the current stroke for new objects does not change.

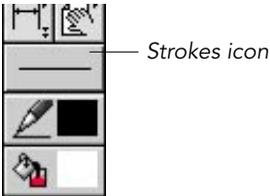
When you first install Canvas, the current stroke defaults to a 1-point pen stroke without dashes or arrowheads.

Applying strokes to text

You can apply strokes to text the same as to vector objects, in most cases. For information about selecting text objects and text characters, refer to the Text and Typography chapters in this manual.

When you first type or import text into a document, Canvas applies a 1-point pen stroke to the text, but does not assign a pen ink, so the text doesn’t have a visible stroke.

◆ **To make text strokes visible:** Select the text or text objects and apply a visible pen ink using the Inks palette. If you select a text object, Canvas applies a stroke to all the text it contains. If you select specific characters within a text object, Canvas applies the stroke to those characters only.



You can apply pen, parallel, and neon strokes to text. You can also apply dashes to text that has a pen or neon stroke.



Calligraphic pen stroke



Neon stroke

Note: The appearance of a parallel stroke applied to text might not appear as you expect, especially on characters with hollow centers (such as “O” and “P”) and characters with tight corners or paths that meet or cross (including “G” and “X”).

Also, removing a neon or parallel stroke from text (by choosing “no stroke” on the Neon or Parallel tab) does not remove the stroke entirely. Instead, the stroke reverts to a 1-point pen stroke.

Using preset strokes

The Strokes palette contains preset strokes and properties that you can apply to objects and to the current stroke. Using presets can help you save time and ensure graphic consistency.

Presets for pens, parallel lines, neon strokes, arrows, and dashes are displayed in scrolling lists on the associated tabs in the Strokes palette. You can use the Strokes icon in the toolbox to apply preset strokes.

You can also create custom strokes, arrows, or dashes and add them to the presets on the appropriate palette tab so you can use them again. For information about creating and storing strokes, see “Customizing strokes” on page 152.

✓ Tip

You can drag a setting from the Strokes palette to an object to apply the setting without first selecting the object.

To apply preset strokes to objects

Use the following general procedure to apply a preset stroke to one or more objects.

- 1 Select the objects for which you want to change strokes.
- 2 Press the Strokes icon in the toolbox to open the Strokes palette. You can use the palette when it’s attached to the tool box, or

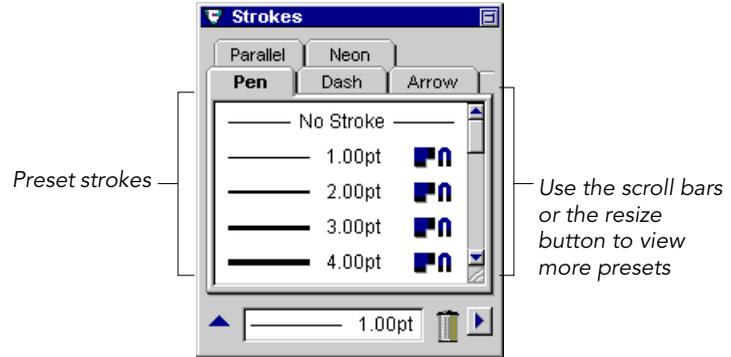
you can drag the palette away from the toolbox to keep it open while you work.

3 Depending on the type of stroke you want, choose the Pen, Parallel, or Neon tab.

4 Choose a stroke in the preset strokes list. If necessary, use the scroll bar or window resize button to view additional strokes. Canvas applies the stroke you choose to selected objects.

Floating Strokes palette

The palette appears slightly different when attached to the toolbox; the title bar and the items below the scroll list are not displayed.



To make a preset stroke the current stroke

You can choose a preset stroke as the current stroke to apply to new objects you create.

1 Deselect all objects in the current document. To deselect all objects, press Enter (Mac) or Esc (Windows) a few times, or until no bounding boxes are visible.

2 Press the Strokes icon in the toolbox and choose the Pen, Parallel, or Neon tab, depending on the type of stroke you want.

3 Choose a stroke in the preset strokes list. Use the scroll bar to view additional strokes. The Strokes icon in the toolbox shows the current stroke.

Using standard pen strokes

The most common type of stroke is a standard pen stroke, a solid line of uniform width. This type of stroke is used for many situations, such as technical illustrations, flowcharts, callout lines, arrows, and dashes.

By default, the width of pen strokes is measured in points (one point is 1/72 of an inch). Pen stroke widths from 1 to 20 points appear in the Pen tab's presets list.

- ◆ **To change the current pen width:** Deselect all objects, then select a new stroke on the Pen tab of the Strokes palette.
- ◆ **To change the stroke width of specific objects:** Select one or more objects, then select a new stroke on the Pen tab.

To change the color of a pen stroke

The color of a stroke comes from the object's pen ink color. The pen ink can be a complex multi-color pattern or gradient, or a simple, solid color.

- 1 Select one or more objects whose pen ink you want to change.
- 2 Press the Pen Ink icon in the toolbox. The Inks palette opens from the toolbox; you can drag this palette away from the toolbox to keep it open as you work.
- 3 On one of the tabs in the Inks palette, choose a color, gradient, hatch, symbol, or texture; see "Inks: colors and patterns" on page 127.

'Invisible' inks

A pen ink is one or more colors that Canvas uses to apply color to pen strokes. The pen ink can be set to "no ink," or to a color that blends into the background, which renders a pen stroke invisible.

In some situations, you might want to set an object's pen ink to "no ink," rather than remove the object's stroke. This can be useful to temporarily hide the stroke without removing the dash, arrow, and other stroke settings, for example.

To set an object's pen ink to "no ink"

This procedure removes the pen ink and makes the stroke invisible.

- 1 Select the object and press the Pen Ink icon to open the Inks palette.
- 2 On the Color tab of the Inks palette, choose the first item, a box crossed by a diagonal line. If colors are listed by name, select "no ink" at the top of the list.



Pen ink color changed from black to Pantone 123



"No ink" setting

Adding preset arrows to strokes

You can use preset arrowheads to create pen, parallel, and neon strokes with arrows. You can apply strokes with arrows to lines and open paths, such as those created with the Curve tool. Arrowheads can appear at one or both endpoints of a path.

You can also create custom arrowheads that you can add to the preset arrowheads; see “Customizing arrows” on page 158.

To add arrows to strokes

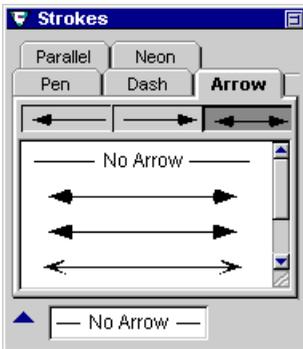
Use the following procedure to apply preset arrows to objects or the current stroke:

1 Depending on how you want arrows to apply, do one of the following:

- To add an arrow to the current stroke, deselect all objects.
- To add arrows to specific objects’ strokes, select the objects.

2 Press the Strokes icon in the toolbox to open the Strokes palette; select the Arrow tab.

3 The buttons at the top of the tab let you choose between starting, ending, and double-sided arrowheads. To select a placement click a button; the chosen button appears recessed. The arrows in the scroll list preview the selected arrowhead.



Starting arrow



Ending arrow



Double-sided

4 In the scroll list, choose the arrow that you want to apply. The arrow applies to selected objects or to the current stroke.

Adding dashes to strokes

You can add a variety of preset dash sequences to pen and neon strokes. You can apply a stroke with dashes to most objects, including lines, open and closed Bézier curves, polygons, rectangles, ovals, and stars.

Parallel line strokes can also include dashes. However, you select dashes for parallel lines when you customize the stroke on the Parallel tab. For details, see “Customizing parallel line strokes” on page 161.

To add dashes to pen and neon strokes

1 Depending on how you want dashes to apply, do one of the following:

- To apply dashes to the current stroke, deselect all objects.
- To apply dashes to an object that has a pen or neon stroke, select the object.

2 Press the Strokes icon in the toolbox to open the Strokes palette. Choose the Dash tab.

3 Choose the dash sequence that you want in the list of presets.

Removing arrows, dashes, and strokes

You can remove a selected object's stroke, or set the current stroke to "no stroke," so you can create objects that have no stroke. An object that has no stroke has no visible outline. Objects drawn with the Line tool become invisible without a stroke; other objects are still visible if they have a visible fill ink.

You can also remove dashes and arrows from a stroke. Because arrows and dashes are attributes of strokes, you can remove them without removing the entire stroke.

Removing arrows, dashes, and strokes involves the same procedure as changing from one preset stroke to another.

To remove arrows or dashes

You can use the following procedure to remove arrows from pen, parallel, and neon strokes, and to remove dashes from pen and neon strokes. For details about removing dashes from parallel strokes, see "Customizing parallel line strokes" on page 161.

1 Depending on how you want to remove arrows or dashes, do one of the following:

- To remove stroke attributes from an object, select the object.
- To remove stroke attributes from the current stroke, deselect all objects.

2 Press the Strokes icon in the toolbox to open the Strokes palette. Choose the Dash or Arrow tab, depending on the attribute you want to remove.

3 Choose “no arrow” on the Arrow tab to remove arrows from a stroke. Choose “no dash” on the Dash tab to remove dashes.

To use “no stroke” settings

You can remove strokes entirely from objects, or use “no stroke” as the current setting for new objects.

- 1** Depending on how you want to remove strokes, do one of the following:
 - To remove the stroke from an object, select the object.
 - To make “no stroke” the current setting, deselect all objects.
- 2** Press the Strokes icon in the toolbox and choose “no stroke” on the Pen, Neon, or Parallel tabs.

Customizing strokes

Each tab in the Strokes palette has a *configuration manager*, an area that can be rolled down at the bottom of the palette to reveal options for customizing strokes.

You can use the configuration managers to

- display the strokes settings of selected objects
- create custom pen, parallel, and neon strokes
- create custom arrowheads and dash sequences
- apply custom settings to objects or the current stroke
- store custom strokes as presets in the palette
- save preset strokes in files on disk
- load preset strokes that have been saved in disk files

To use the configuration managers

You must tear off the Strokes palette from the toolbox to use the configuration managers, delete presets from the palette, and load, save, or delete strokes saved to disk.

- 1** To open the Strokes palette, press the Strokes icon and drag the palette away from the toolbox.

The Strokes palette opens as a floating palette. You can drag the palette by its title bar to move it.

- 2** Click the tab you want to use to bring it to the front, if necessary.



Configuration manager button

3 Click the triangle button at the bottom left corner of the palette to open the configuration manager for the front tab.

The configuration manager stays open as you click other tabs in the palette, and the display changes to reflect the available options for the tab.

◆ **To roll up the configuration manager:** When the configuration manager is open, click the down-facing triangle button at the left of the palette.

Choosing settings to customize

You can use the configuration managers to customize the settings of an object's stroke, the current stroke, or one of the preset strokes or stroke attributes. You can also create custom strokes.

- To customize an object's stroke, select the object and open the appropriate manager in the Strokes palette.
- To use a preset stroke as the basis for a custom setting, apply the preset to an object and then select the object. This displays the settings in the manager on the appropriate tab. You can also simply choose the preset in the scroll list, however, this also changes the current stroke or the stroke of any selected objects.

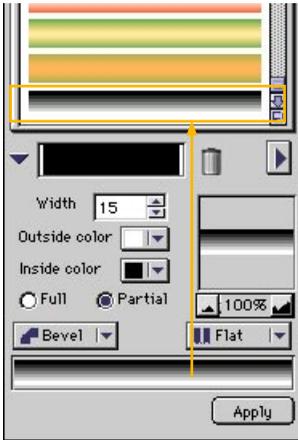
To apply custom settings to objects

You can apply custom settings from the Strokes palette to an object in two ways:

- Select one or more objects before you begin adjusting the settings in the configuration manager. To apply the settings to the selected objects, click **Apply**.
- If you customize the settings before selecting any objects, you can apply the settings to objects by dragging from the sample window at the bottom of the palette to an object.

✓ Important

If you adjust the settings in a configuration manager, and then select an object, the settings will change to reflect the object's settings. If you don't want to lose custom settings when no objects are selected, add them to the palette, or apply them to an object; see "Adding custom settings to the palette," next.



Drag from the sample window to the scroll list, as highlighted

Adding custom settings to the palette

You can add custom strokes, arrows, and dashes to the Strokes palette. When you add custom items, they become presets that you can use the same as default preset items. You can apply a customized preset to objects or make it the current stroke.

- ◆ **To add custom settings from the configuration manager to the palette:** Drag from the sample window at the bottom of the palette to the presets list at the top. The settings become a preset, with a graphic representation or description added to the end of the list.
- ◆ **To add settings from an object to the palette:** Select the object. Its settings appear in the appropriate configuration manager of the Strokes tab. Drag from the sample window at the bottom of the palette to the presets list at the top.

When you end a Canvas session, the program stores each tab's presets with the program. Because Canvas stores the preset strokes and inks, the same presets can always be available, whether you work with new documents, documents you created, or documents created by another Canvas user.

If you create a custom stroke and want to apply it to more than one object, and especially if you want to use it in a later work session, you should store the custom settings in the presets area of the palette.

Deleting presets from the palette

You can remove default and custom presets from the Strokes palette. When you delete a preset, Canvas permanently removes it from the palette, unless you save it to disk and load it again; see “Saving and loading strokes settings,” next.

- ◆ **To remove a preset from the palette:** Drag the preset to the trash can icon below the presets scroll list. The trash can appears only when the Strokes palette is floating.

Note: If you delete all arrowheads from the palette, dimension objects will not have arrows.

Saving and loading strokes settings

You can save preset strokes, arrows, and dashes in files on disk, and load the presets into the Strokes palette. You can use these strokes files to customize the Strokes palette for particular projects or types of documents, and to exchange custom settings with other Canvas users.



*Right-triangle button
pop-up menu*

Commands for saving and loading strokes files are in a pop-up menu on the Strokes palette. The menu icon appears only when the Strokes palette is separated from the toolbox.

To save strokes in a file

Use the following procedure to save the presets from one tab in the Strokes palette to a file on disk.

- 1** To open the Strokes palette, press the Strokes icon and drag the palette away from the toolbox. The Strokes palette opens as a floating palette.
- 2** Click the tab you want to use to bring it to the front.
- 3** Adjust the settings in the palette, if necessary, until you have the presets you want to save.
- 4** Press the right-triangle button on the right of the palette and choose Save Strokes in the pop-up menu. A directory dialog box opens.
- 5** Type a name for the palette file, select a location on a disk, and click Save.

To load strokes from a file

Use the following procedure to load presets from a strokes file on disk to a tab in the Strokes palette. When you load a strokes file, you can replace a tab's presets with the file's presets or add the presets saved in the strokes file to those currently in the palette.

- 1** To open the Strokes palette, press the Strokes icon and drag the palette away from the toolbox. The Strokes palette opens as a floating palette.
- 2** Click the tab you want to use to bring it to the front.
- 3** Press the right-triangle button on the right of the palette and do one of the following, depending on whether you want to replace the current presets:
 - To replace the tab's presets with those in the strokes file, choose Load Strokes.
 - To add the presets in the strokes file to those currently in the palette, choose Append Strokes.
- 4** A directory dialog box opens. Locate the strokes file you want to open and click Open.

Customizing pens

✓ Tip

You can choose millimeters, inches, or picas instead of points as the pen size unit using the Preferences command in the File menu. However, if you add a custom pen to the presets, Canvas converts the units to points.



Calligraphic pen stroke. Note the variations in height and width of the stroke.

In the Pen manager, you can choose from the following options:

- standard or calligraphic pen styles, or “nibs.” Standard pens have a uniform width. Calligraphic pens have a separate width, height, and angle setting.
- bevel, miter, or round line joins
- flat, round, or square end caps

For basic information about setting pen size, see “Using standard pen strokes” on page 148.

◆ **To create a custom pen width:** In the Pen manager, choose Standard in the pop-up menu, and set the width in the Width text box. The sample window at the bottom of the manager shows the current settings; drag from this window to the scroll list to add the pen width to the presets.

To create a calligraphic pen

The calligraphic option lets you create a pen stroke with a custom height, width, and angle. The shape of a calligraphic stroke varies depending on the stroke’s path.

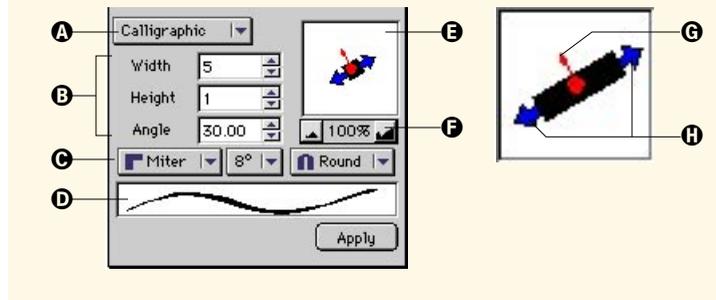
- 1 In the Pen manager, choose Calligraphic in the pop-up menu. Height, Width, and Angle text boxes and an editing box appear in the configuration manager.
- 2 To set the width of the pen, enter a value in the Width text box, or drag the thick blue arrows in the edit window. The width is the maximum thickness of the stroke when it is perpendicular to the pen angle.
- 3 To set the height of the pen, enter a value in the Height text box, or drag the thin red arrow in the edit window. The height is the maximum thickness of the stroke when it is parallel to the pen angle.
- 4 To set the pen angle, enter a value in the Angle text box or drag an arrow in the edit window.

For the most calligraphic effect, the height and width values should be dissimilar (at least by a factor of three or four) and the angle set to approximately 45 degrees.

Pen manager

These settings let you create your own pen types.

- A** Choose Calligraphic in the pop-up menu.
- B** Specify width, height, and angle of the pen nib. You can set the units of measure for these settings using the Preferences command in the File menu.
- C** Configure line joins and end caps using the pop-up menus; see the next section for information on these settings.
- D** Sample window of the current pen settings.



- E** Edit the size and angle of the nib interactively in this edit window (see inset).
- F** Use the zoom buttons to increase or reduce the size of the nib in the edit window. This does not affect the actual pen size.
- G** Drag to change the height and angle of the nib.
- H** Drag to change the width and angle of the nib.

Choosing line joins and end caps

Pop-up menus in the Pen manager let you specify the type of line joins and end caps. Line joins determine appearance of two path segments that meet at a corner. End caps specify the shape of the endpoints of an open path.

Line joins

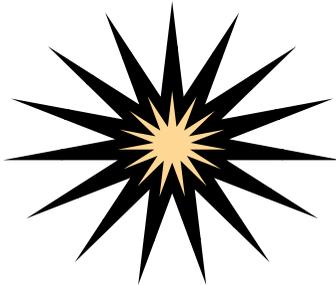
Canvas has three types of line joins: miter, round, and bevel. For preset pen strokes, Canvas indicates the type of line join in the scroll list on the Pen tab.

Miter Joins path segments with sharp corners that extend to a single point. When you choose miter joins, an additional pop-up menu lets you set the miter limit in degrees (2, 4, 6, 8, or 10 degrees).

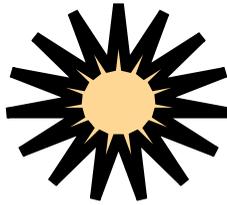
The miter limit setting tells Canvas which corners are too tight to miter; Canvas bevels these corners instead. In other words, if the miter limit is set to 6 degrees, and two path segments join at an angle of 5 degrees, Canvas bevels the corner rather than creating a miter join. The miter limit lets you prevent long, spiked corners that might result as a combination of a wide pen size and a small angle.

Round Smooths corners, so the joint is rounded instead of pointed or flat.

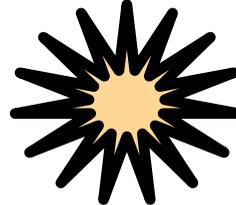
Bevel Squares off path segment corners, so that the joint appears flat rather than rounded or pointed.



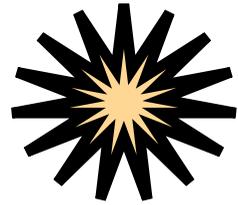
Miter join, miter limit = 2°



Bevel join



Round join



Miter join, miter limit = 10°

End caps

Canvas has three types of end caps. For preset pen strokes, Canvas indicates the type of end cap in the scroll list on the Pen tab.



Flush with endpoint



Rounded at endpoint



Square at endpoint

Flat The end of the stroke is flush and square with the end of an open path or dash. By default, end caps use this setting.

Round A semi-circular cap extends half the pen width beyond the endpoint of an open path or dash.

Square The stroke tip is square, similar to the Flat option, but extends half the line width beyond the endpoint, like the Round option.

Customizing arrows

You can create starting, ending, or double-sided arrowheads using the Arrow manager. You can create double-sided arrowheads that are identical or entirely different. Canvas has several preset arrowhead styles that you can use and edit, or you can use any vector, paint, or text object as an arrowhead.

To create a custom arrowhead

1 Create a vector, text, or paint object to use as an arrowhead. You can also edit a preset arrowhead or an arrowhead style of an existing object by selecting the preset or object.

- 2 With the Strokes palette floating, select the Arrow tab and roll down the Arrow manager, if necessary.
- 3 To choose whether you want to create a starting or ending arrowhead, or both, click a button at the top of the tab. The sample windows at the bottom of the configuration manager show or hide, depending on the button you click.
- 4 For double-sided arrowhead styles, click a sample window to choose which arrowhead you want to work with. To edit both sides simultaneously, turn Mirror on.
- 5 Drag the object you want to use as an arrowhead to the edit window in the configuration manager.
- 6 Configure the arrowhead settings described below.

Arrow manager

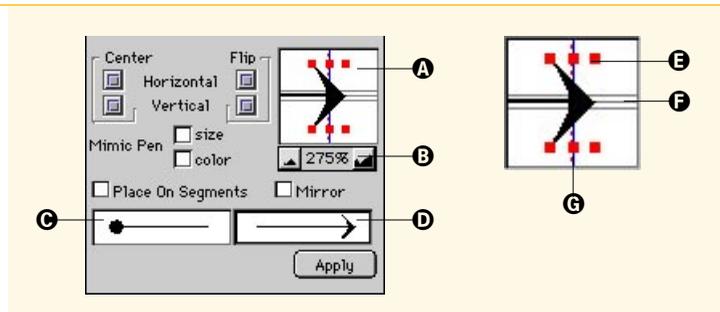
Use these options to create a custom arrowhead or edit a preset arrowhead.

A You can drag objects to this edit window to use them as arrowheads. A preview of selected presets or objects also appears here.

B Use these zoom buttons to magnify the edit window view. Changing views does not change the arrowhead's actual size.

C Shows the starting arrowhead, and isn't visible when using only ending arrowheads. When working with double-sided arrowheads, click this window to select the starting arrow.

D Previews the ending arrowhead and isn't visible when using only starting arrowheads. When working with double-sided arrowheads, click this window to select the ending arrow.



Arrow edit window

You can move and resize the object in the edit window to fine-tune the arrowhead.

E Drag these control points to resize the arrowhead.

F Indicates the horizontal axis of the path's endpoint.

G Indicates the vertical axis of the path's endpoint.

Center. Click the buttons to align the center of the arrowhead horizontally and vertically on the path's endpoint.

Flip. Click the buttons to flip the arrowhead horizontally and vertically.

Mimic Pen. Turn size and color on to apply the pen width and ink of the path to the arrowhead.

Place on segments. Turn this option on to add arrows to each segment of an object.

Mirror. Turn on to make double-sided arrowheads mirror images of each other.

Customizing dashes

Dashes are composed of alternating solid and blank segments. Using the Dash manager, you can customize the length of up to 13 segments to create new, complex dash sequences.

You can design dashes interactively using the edit window. To precisely set the length of each dash segment, you can also specify an exact length. The ruler in the Dash manager displays inches; however, you can enter dash lengths in inches, points, millimeters, or picas; see “Measurement unit preferences” on page 91 for details.

Dashes in the Strokes palette always appear as 1-point wide, black and white segments. However, when you apply these dashes to an object’s pen, the black segments adopt the color and size of the pen, and the white segments become transparent.

◆ **To create a custom dash sequence:** With the Strokes palette floating, select the Dash tab and open the Dash manager, if needed. Use the edit window and length text box to design the sequence, as described below.

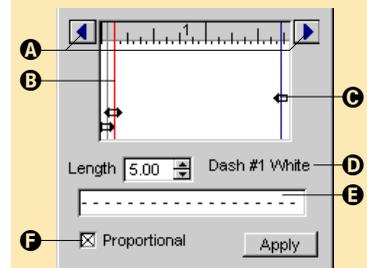
Dash manager

Use these controls to create custom dash sequences.

- A** Click the ruler scroll buttons to move the edit window view left and right.
- B** To change the length of a segment, drag a dash segment editor to the length you want. You can also type a number in the **Length** text box. When you select or drag a segment, Canvas highlights it.
- C** To add new segments, drag from this segment editor (appears blue on-screen) to the left. This segment editor remains at

the right of the window until you create the thirteenth segment. Because you can’t create more than 13 segments, this segment editor then acts like the others.

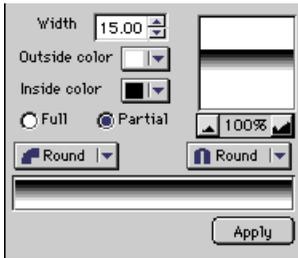
- D** Displays the segment’s number (its order in the sequence) and its color. “Black” indicates it will appear in the color of the pen ink, and “White” indicates it will be transparent.
- E** Displays a sample of the current settings.
- F** Turn **Proportional** on to tell Canvas to scale the length of the segments to match the pen



width of the object. The length of segments in the Dash manager are based on a 1-point line. Therefore, if the pen width is 6 points and Proportional is selected, Canvas multiplies the lengths by six.

Customizing neon strokes

You can create custom neon strokes using the Neon manager in the Strokes palette. You can specify the width, colors, line joins, and end caps for neon strokes.



To create custom neon strokes

- 1 With the Strokes palette floating, select the Neon tab and open the Neon manager, if necessary.
- 2 To specify the width of the neon stroke, enter a value in the Width text box. The preview windows reflect the current settings. You can use the magnification buttons below the preview window to get a close look at the neon effect. Keep in mind that low width settings might make it difficult to see the neon effect.
- 3 To specify colors for the neon stroke, use the Inside color and Outside color pop-up menus; see “Creating custom colors in pop-up palettes” on page 136 for more information. Canvas blends these colors together to create the neon effect. To make the stroke appear round, experiment with lighter inside colors and darker outside colors. The placement of the colors depend on the Full/Partial setting.
- 4 To place the inside color in the center of the stroke and the outside color on the edges, choose Full. To place the inside color on one side of the stroke, choose Partial.
- 5 To choose line join and end cap styles, use the pop-up menus above the sample window at the bottom of the manager; see “Choosing line joins and end caps” on page 157 for more information on these options.

Customizing parallel line strokes

You can create custom parallel line strokes using the Parallel manager in the Strokes palette. You can specify the number of lines, the color, dash pattern, and pen size of each line, and the spacing of lines.

- ◆ **To create custom parallel line strokes:** With the Strokes palette floating, click the Parallel tab to bring it to the front and open the Parallel manager, if necessary. Configure the settings in the manager, described below.

Parallel manager

Use these controls to create custom parallel line strokes.

- A** Enter the number of parallel lines you want.
- B** Choose a number in the pop-up menu to select a line to edit ("1" is the bottom line). You can also click a line in the preview window (**C**) to select it.
- C** Previews the current settings and indicates which line is selected by displaying handles.
- D** Use this row of pop-up menus to apply pen width (left), pen color (center), and dashes (right) to the selected line. The pop-up menus contain preset

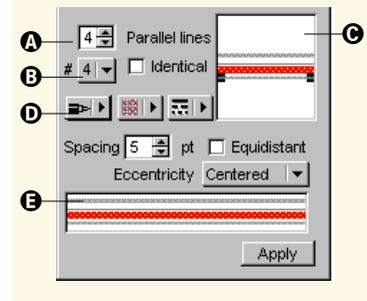
strokes and colors. You can also specify custom pen colors; see "Creating custom colors in pop-up palettes" on page 136.

- E** Displays a sample of the current settings.

Identical. Turn this option on to give all parallel lines the same pen size, color, and dash as the selected line.

Spacing. Enter a number to specify the distance between the selected line and the one below it. For Line #1, this setting defines the space between this line and Line #2.

Equidistant. Turn on this option to apply the spacing



setting for the selected line to all lines.

Eccentricity. Choose Centered, Above, or Below to specify the placement of parallel lines relative to the path of the object.

DRAWING & VECTOR EFFECTS



DRAWING BASICS

This chapter describes how to draw and resize vector objects. The Canvas drawing tools let you easily draw basic shapes — lines, rectangles, ovals, and arcs — and create precise squares, circles, and straight lines. Specialized tools let you draw grids, stars, polygons, concentric circles, spirals, and “smart” lines that link objects and stay connected even when you move the linked objects.

Drawing basic shapes

You can use the same basic technique with any Canvas drawing tool. See the table titled “Basic drawing procedures” on page 166 for the procedures you use to draw basic shapes. Instructions for the tools that let you draw grids, stars, polygons, concentric circles, spirals, and Smart Lines appear later in the chapter.

Applying inks and strokes

When you draw a vector object, Canvas applies the current ink and stroke settings to the objects you draw. The inks and stroke icons in the toolbox show a preview of the current settings. You can change these attributes before or after you draw an object. Refer to the chapters titled “Inks: colors and patterns” on page 127, and “Strokes: outline effects” on page 145, for more information.

Selecting tools in the toolbox

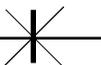
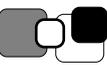
Tools for drawing lines, rectangles, ovals, and arcs are grouped in toolbars that pop out from the toolbox. The current tool is visible in the toolbox. To open a toolbar to select another tool, press the current tool icon. To keep a toolbar open while you work, drag it away from the toolbox.

Drawing objects from the center

You can draw many vector objects starting from the object’s center by pressing a modifier key as you draw. Position the pointer where you want the object’s center to be, press Option (Mac) or Ctrl (Windows) and drag away from the center to draw the object.

When you draw an object from the center, you can press Shift at the same time if you want to also constrain the object's bounding box to a square. You can use this technique to draw a perfect square or circle from the center outward.

Basic drawing procedures

Object	Tool	Procedure	
 Lines	Line tool	Drag from the starting point to the end point in any direction	
 Lines at a 45° angle (horizontal, vertical, or diagonal)	Line tool	Press Shift and drag from the starting point to the end point	
 Rectangles	Rectangle tool	Drag from one corner to the opposite corner	
 Squares	Rectangle tool	Press Shift and drag from one corner to the opposite corner	
 Rounded rectangles	Rounded Rectangle tool	Drag from one corner to the opposite corner	
 Rounded squares	Rounded Rectangle tool	Press Shift and drag from one corner to the opposite corner	
 Ovals	Oval tool	Drag from one corner to the opposite corner of the oval's bounding box	
 Circles	Oval tool	Press Shift and drag from one corner to the opposite corner of the circle's bounding box	
 Arcs	Arc tool	Drag from one corner to the opposite corner of the arc's bounding box	
 Circle-segment arcs	Arc tool	Press Shift and drag from one corner to the opposite corner of the arc's bounding box	

Resizing and reshaping vector objects

You can resize and reshape vector objects by changing the size and shape of an object's bounding box. You can also change the length of

arc segments and the corner radius of rounded rectangles. These techniques are described in the following section.

You can also edit most vector objects by changing the anchor points and segments that form their paths. For information on these editing techniques, see “Editing object paths” on page 180.

To resize an object’s bounding box

When you drag a handle on a vector object’s bounding box, you change the height or width (or both) of the bounding box. This also changes the size (and possibly the shape) of the object. For example, if you select a circle and drag a side handle to make the bounding box wider, the circle becomes an oval that is wider than it is tall.

- 1 Choose a Selection tool at the top-left of the toolbox.
 - Use the filled arrow to select a single object (including a group object)
 - Use the hollow arrow to select an individual object within a group object.
- 2 Click the object to select it. Handles appear on the object’s bounding box.
- 3 Drag a handle, as described below, to resize the object.

To change	Do this
Height	Drag the top or bottom handle
Width	Drag a side handle
Height and width	Drag a corner handle
Height and width proportionally	Press Shift and drag a corner handle
Symmetrically (from center)	Press Option (Mac) or Ctrl (Windows) and drag a handle
Symmetrically and proportionally	Press Option-Shift (Mac) or Ctrl-Shift (Windows) and drag a corner handle

Maintaining object proportions

When you resize vector objects and want to maintain the object’s height-to-width ratio, you have two options:

- If the object’s bounding box is a perfect square — which is true for circles, squares, and arcs of circles — press Shift and drag a corner handle to resize the object proportionally.
- If the bounding box is not a square, use the Scale command and specify the same horizontal and vertical scaling factor.

To change the length of an arc

- 1 Select the arc. Round handles appear near the beginning and end of the arc segment.
- 2 To shorten the arc, drag the round handle back over the arc. To lengthen the arc, drag the round handle to continue the arc segment.

You can also adjust the length of an arc by changing its Start angle and Delta values in the Object Specs palette.

To change the corner radius of a rounded rectangle

- 1 Select the rounded rectangle. A round handle appears near the lower-right of the rectangle.
- 2 Drag the handle to change the corner diameter. You can also use the Diag setting in the Object Specs palette to alter the shape.

Using specialized drawing tools

Several specialized drawing tools let you quickly create complex shapes in Canvas. You can draw grids, stars, polygons, concentric circles, spirals, and Smart Lines as easily as drawing a line or oval.

The shapes created by these tools are vector objects that you can move and resize the same as other objects. Some objects also have unique editing features. For example, you can twirl the points of a star, star outline, or framed star by dragging special handles. You can also specify the number of points for a star, the number of rows and columns in a grid, the number of rings in concentric circles, and the number of revolutions in a spiral.

You can also edit these objects by manipulating anchor points and segments, if you convert the objects to paths. For more information, see “Converting objects and text to paths” on page 191.

Drawing concentric circles

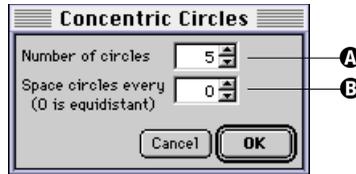
The Concentric Circles tool draws nested rings of ovals or circles. You can set the number and spacing of the rings before or after you draw concentric circles.

- 1 Select the Concentric Circles tool. The tool is in the pop-up toolbar with the oval and arc tools.
- 2 Drag diagonally to specify the size of the concentric circles. To draw rings that are perfect circles, press Shift and drag.
 - ◆ **To change a concentric circles object:** Double-click the concentric circles object to open the Concentric Circles dialog box. Adjust the settings (see below) and click OK.

To configure the Concentric Circles tool

Double-click the Concentric Circles tool icon to open the Concentric Circles dialog box. You can use the dialog box to change an existing concentric circles object and to configure the Concentric Circles tool before you draw with it.

- A Type the number of circles you want the tool to draw.
- B Type the number of pixels between each circle. Type zero to evenly space the circles.



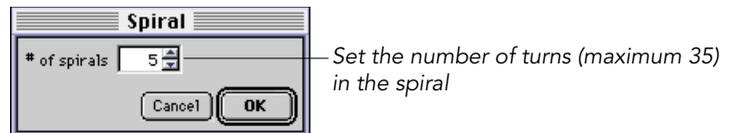
Drawing spirals

The Spiral tool draws a smooth, spiraling curve. You can set the number of spiral turns before or after you draw a spiral object.

- 1 Select the Spiral tool in the toolbox. The tool is in the toolbar with the Oval and Arc tools.
- 2 Drag diagonally to specify the size of the spiral curve. To create a circular spiral, press Shift and drag.

To configure the Spiral tool

Double-click the Spiral tool to open the Spiral dialog box. Set the number of spirals and click OK.



- ◆ **To change the number of spirals in an object:** Double-click the object to open the Spiral dialog box. Change the number of spirals and click OK.

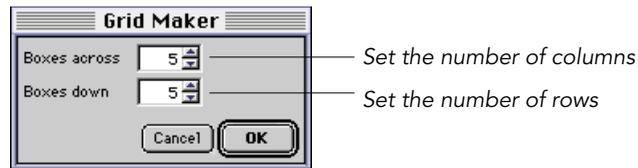
Drawing grids

The GridMaker tool draws grids of rows and columns. You can set the number of rows and columns before or after you draw a grid object.

- 1 Select the GridMaker tool in the toolbox. The GridMaker tool is in the toolbar with the Rectangle and Rounded Rectangle tools.
- 2 Drag diagonally to define the grid's bounding box. To create a square grid, press Shift and drag.

To configure the GridMaker tool

Double-click the GridMaker tool to open the GridMaker dialog box. Set the number of boxes comprising the grid and click OK.



If you set Boxes Across to 1, the grid has no vertical lines. If you set Boxes Down to 1, the grid has no horizontal lines.

- ◆ **To change the configuration of a grid object:** Double-click the grid object to open the GridMaker dialog box. Change the number of boxes and click OK.

To separate a grid into lines

You can adjust the individual lines that comprise a grid by converting it to a path and then ungrouping it.

- 1 Select the grid object and choose Path ► Convert to Path in the Object menu.
- 2 Choose Ungroup in the Object menu. The grid object separates into individual lines.

Drawing with the Multigon tool

You can use the Multigon tool to draw all types of multi-sided objects, including triangles, hexagons, pentagons, octagons, stars, circular starbursts, and similar shapes. To set the number of sides and the style of a multigon, configure the Multigon tool before you draw.

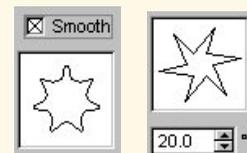
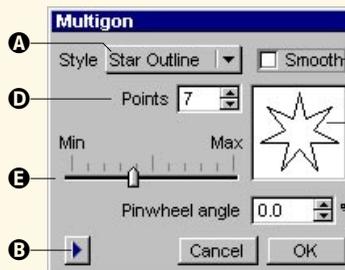
- ◆ **To draw with the Multigon tool:** Select the Multigon tool in the Object toolbar. Drag diagonally to define the multigon's bounding box. To make the bounding box square, press Shift and drag.
- ◆ **To configure the Multigon tool:** Double-click the Multigon tool icon. In the dialog box, set the multigon style and other options (described next) and click OK.

Style	Appearance
Frame	No interior lines
Framed Star	Combination of Frame and Star objects
Spoke	No sides connecting the spoke points
Star	Points connected by interior lines
Star Outline	Multiple points with no interior lines
Wheel	Combination of Frame and Spoke objects

Multigon dialog box

The available options depend on the selected multigon style.

- A** Choose a preset style in the pop-up menu.
- B** Click to choose a custom style or to save or delete one.
- C** Preview shows the style and other settings.
- D** For stars, framed stars, and star outlines, enter the number of star points from 3 to 100. For other styles, enter the number of sides from 3 to 100.



Smooth option (left) and Pinwheel Angle (right)

- E** Drag the slider to change the interior area of stars, framed stars, and star outlines.
- F** Turn this option on to smooth the object's angles.
- G** For stars, enter a value of more or less than 0 degrees to bend the points. Negative values bend the points counter-clockwise.

Saving custom Multigon settings

You can save Multigon tool settings so you can use them later. In the Multigon dialog box, press the triangle at the lower-left to save, select, and delete custom multigon styles.

- ◆ **To save multigon settings:** Choose Save Shape. Type a name for the shape and click OK. The name appears in the pop-up menu.
- ◆ **To delete a style:** Choose Delete Shape. In the dialog box, choose the shape name you want to delete and Click OK. You can't delete any of the built-in styles.

Note: When you save and delete styles, they remain saved or deleted whether you click OK or Cancel to close the Multigon dialog box.

Editing star multigons

You can interactively edit star multigons (framed star, star, and star outline styles) to adjust the twirl and radius of the object's points. The following procedures do not apply to frames, spokes, or wheels.

- 1 Double-click the star multigon to put it in interactive mode. An outer handle and an inner handle appear on one point of the star.
 - To change the length of the star points, drag the outer handle inward or outward from the center of the star.
 - To twirl the points, drag the handle clockwise or counterclockwise.
 - To change the position of the inner points, drag the inner handle inward or outward from the center.
- 2 To end interactive editing, press Enter (Mac) or Esc (Windows), or double-click outside the object.

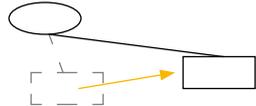
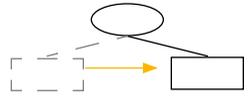
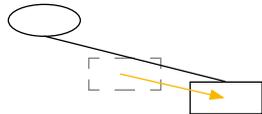
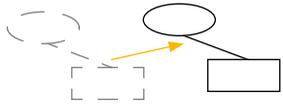
Connecting objects with Smart Lines

The Smart Lines tool draws dynamic links between objects. Smart Lines are useful for creating organizational charts, flow diagrams, and other illustrations with linked objects.

You can use Smart Lines to link one or more objects to a single object. You can draw multiple Smart Lines between objects and you can link Smart Lines to other Smart Lines. When you resize or move a Smart Line, the linked objects move according to the type of Smart Line used.

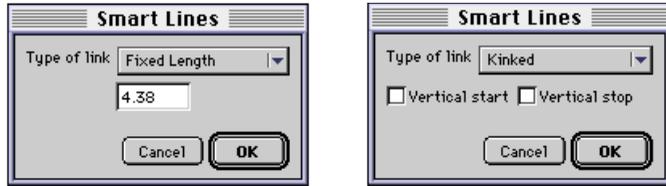
- 1 Select the Smart Lines tools in the toolbox. The Smart Lines tool is in a pop-out toolbar with the Line tool.

- 2 Press the Smart Lines tool to open the Smart Lines palette. You can drag the palette away from the toolbox to keep it open.
- 3 Select one of the Smart Lines types in the palette.

Type	Characteristics	
 <i>Basic</i>	Smart Lines change length and angle to maintain connection to the linked objects	
 <i>Fixed Length</i>	Maintains a set length and linked objects move to maintain the length	
 <i>Fixed Angle</i>	Maintains a set angle and linked objects move to maintain the angle	
 <i>Kinked</i>	Uses only horizontal and vertical segments. Linked objects move to maintain the segments. You can set the first and last segments to always be vertical.	
 <i>Locked</i>	Smart Lines do not change length or angle and linked objects move as a group	

- 4 Drag from one object to another object. When you release the mouse button, Canvas creates the Smart Line.

- ◆ **To change the type of an existing Smart Line:** Double-click the Smart Line to open the Smart Lines dialog box and choose a different type in the pop-up menu.



Type of link The link types correspond to the icons in the Smart Lines palette.

Length For Fixed Length Smart Lines, you can specify the length of the selected Smart Line by entering a number in this text box.

Fixed Angle For Fixed Angle Smart Lines, you can type an angle in degrees to specify the angle of the selected Smart Line.

Vertical Start/Vertical Stop For a Kinked link type, you can select Vertical Start to make the Smart Line start with a vertical segment and select Vertical Stop to make the Smart Line end with a vertical segment.

DRAWING AND EDITING PATHS

In addition to basic shape tools, Canvas provides tools that let you draw paths of any shape. This chapter explains how to

- draw paths with the Curve, Polygon, and Freehand tools
- edit paths by adding, deleting, and moving anchor points and segments
- adjust a curve segment using the control points that define curves

Drawing with the path tools



Curve tool



Freehand tool



Polygon tool



Path Tools toolbar

Press the current path tool to open the toolbar and select the tool you want to use. To keep the toolbar open while you work, drag it away from the toolbox.

You can use the Curve, Polygon, and Freehand tools to draw vector objects as open or closed paths. When you use the Curve and Polygon tools, you set anchor points to define the path segments. With the Freehand tool, you simply drag to draw a path. The three tools are grouped in a toolbar that pops out from the toolbox.

The Polygon tool draws paths with straight segments. The Curve tool can draw paths with straight and curved segments. Paths drawn with the Freehand tool generally are made of curved segments based on the movement of the pointer.

When you draw with the path tools, Canvas uses the current pen ink, fill ink, and stroke settings for the vector objects you create.

Drawing polygons

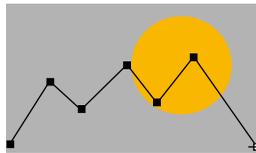
When you use the Polygon tool to draw an object, you set anchor points that define a path of straight line segments. As with any path object, you can later make the straight segments curved. For editing information, see “Editing object paths” on page 180.

- 1 Select the Polygon tool in the Path Tools toolbar.
- 2 Click to set the first anchor point, shown as a small square.

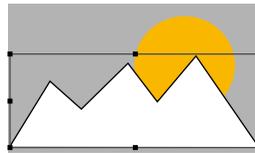
- 3 Click where you want to place the second anchor point.
 - You can press the pointer to display the segment, drag to position it, and then release the mouse button.
 - To constrain placement of a segment to 45-degree intervals, press Shift while drawing the segment.
- 4 Repeat the last step to draw more segments. To remove the last segment you drew, press Delete.
- 5 To complete the polygon:
 - For an open polygon, after you place the last anchor point, press Enter (Mac) or Esc (Windows), or double-click to place the last anchor point.
 - For a closed polygon, click the starting anchor point, and then press Enter (Mac) or Esc (Windows), or double-click the starting anchor point.



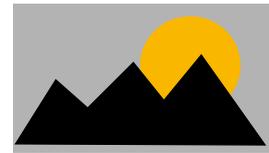
Click to place first point



Click additional points, double-click last point



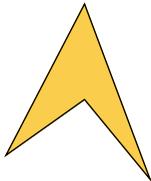
Completed polygon (selected)



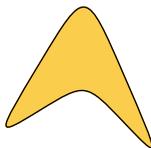
Polygon finished with solid black fill ink

Smoothing polygons

You can use the Smooth command to convert a polygon — a path made of straight segments — to a path with smooth curves. You can smooth any paths made of straight segments, including rectangles and paths drawn with the Curve tool, as long as they have only straight segments. The smooth command is a convenient way for those who haven't mastered curve drawing to create smooth shapes.



Polygon



Smoothed

- ◆ **To smooth a polygon:** Select the polygon and choose Path ► Smooth in the Object menu. Canvas converts the polygon’s corner points into smooth points, which changes the path’s straight line segments into curved segments. For more information about editing smooth points and curved segments, see “Reshaping paths by editing anchor points” on page 187.

You can use the Unsmooth command to restore the straight segments of a polygon that was smoothed with the Smooth command. However, you can use Unsmooth only if the smoothed polygon wasn’t edited after it was smoothed.

- ◆ **To unsmooth a smoothed polygon:** Select the smooth polygon and choose Path►Unsmooth in the Object menu. Canvas restores the polygon’s straight line segments.

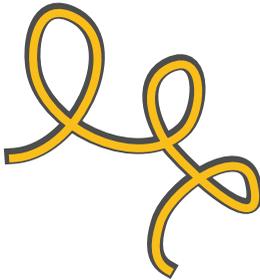
Drawing freehand paths



You can draw objects with the Freehand tool by simply dragging the pointer. The Freehand tool creates paths with curved segments based on the movement of the pointer.

As with any path object, you can later edit the path and reshape its segments; see “Editing object paths” on page 180.

- ◆ **To draw a freehand path:** Select the Freehand tool in the Path Tools toolbar. Position the pointer where you want the path to begin. Drag to create a path. To create a closed path, release the mouse button when the pointer is on the starting point.
- ◆ **To set the curve tolerance:** You can tell Canvas to use relatively more or fewer anchor points to represent a curve. Double-click the Freehand tool to open the Freehand Tolerance dialog box. In the text box, type a value from 1 to 5, where a value of 5 tells Canvas to use as few anchor points as possible.



Paths drawn with the Freehand tool

If you have difficulty drawing smooth curves with this tool, try lowering the speed setting in your system's Mouse (or other pointing device) Control Panel. See your system documentation for information on these settings.

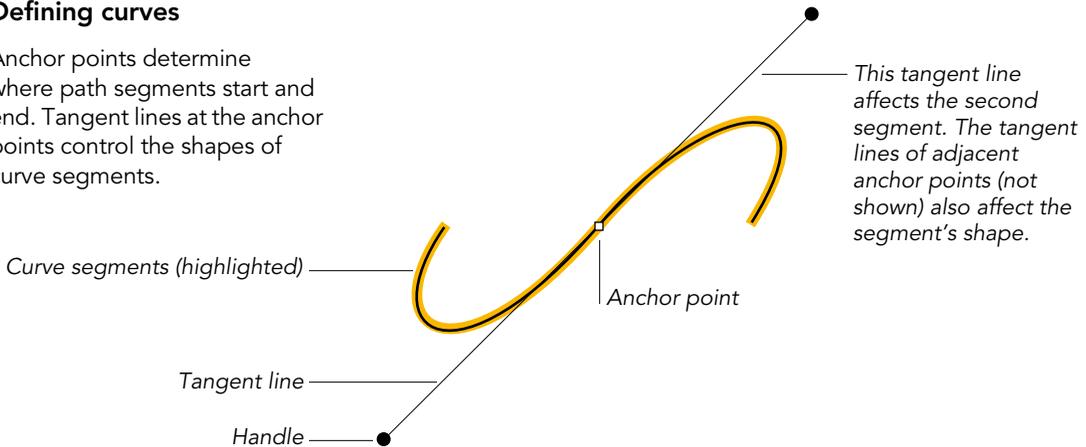


Drawing curved paths

 The Curve tool is the most versatile of the path tools. You can use it to draw precise paths with straight and curved segments. When you draw curved segments, you place an anchor point and a tangent line at the start of each segment. The position and length of the tangent line controls the shape of the curved segment.

Defining curves

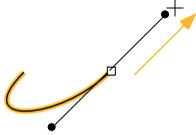
Anchor points determine where path segments start and end. Tangent lines at the anchor points control the shapes of curve segments.



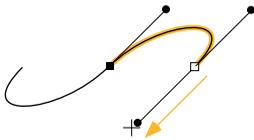
You can also draw straight paths by clicking with the Curve tool, similar to the way you use the Polygon tool; see "Drawing polygons" on page 175.



To draw the curve shown in gray, press and drag to set the first anchor point and tangent line.



Press and drag to set the next anchor point and tangent line. The first segment (highlighted) grows as you draw out the tangent line.



Press and drag to set the third anchor point; the second segment (highlighted) grows as you drag the tangent line.

To draw a path with curved segments

- 1 Select the Curve tool in the toolbox.
- 2 Where you want the path to begin, do one of the following:
 - Click to set the anchor point and, before releasing the mouse button, drag to position its tangent line.
 - Click to set the anchor point without creating a tangent line.

When you release the mouse button, the anchor point appears.

- 3 Where you want the segment to end, do one of the following:
 - Drag to simultaneously set an anchor point and position a tangent line.
 - Click to set the anchor point without creating a tangent line.

This finishes the first curve segment.

- 4 Repeat the previous step to draw additional segments.
- 5 To complete the path, use one of the following options:
 - For an open path, after you place the last anchor point, press Enter (Mac) or Esc (Windows). You can also double-click to place the last anchor point.
 - For a closed path, click the starting anchor point, and then press Enter (Mac) or Esc (Windows). You can also double-click the starting anchor point.

Shaping and editing segments as you draw

As you draw with the Curve tool, you can use modifier keys to constrain and edit the path segments.

- ◆ **To place an anchor point at a 45-degree interval relative to the previous one:** Press Shift as you set the second anchor point.
- ◆ **To create a straight segment:** Press Command (Mac) or Ctrl (Windows) as you click to set the segment's endpoint.
- ◆ **To remove the last segment:** Press Delete. You can continue to remove segments in the reverse order you created them, until you delete the entire object.
- ◆ **To create a corner point:** Press Option (Mac) or Alt (Windows) and click to set the anchor point.
- ◆ **To constrain a tangent line to 45-degree increments:** Press Shift as you drag the tangent line.
- ◆ **To move an anchor point as you place it:** When placing an anchor point, hold down the mouse button and press the Spacebar, then move the mouse. While the Spacebar is held down, the anchor point follows the mouse movement.

Editing object paths

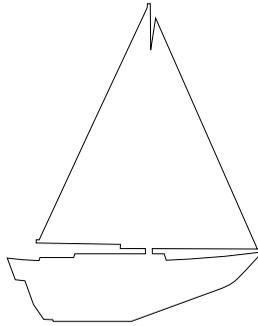
Most vector objects in Canvas are paths. Whether you draw with path tools (Curve, Freehand, or Polygon tools) or shape tools (Rectangle, Oval, Line, or Arc tools), you create paths, and you can use the same path-editing techniques to modify them.

Of course, you can also change a path object by using handles on the bounding box when the object is selected; see “To resize an object's bounding box” on page 167.

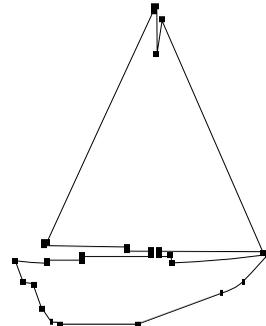
When you want to edit a path, you place the object in edit mode to display its anchor points. The following sections explain how to work in edit mode, edit anchor points, and reshape the segments of a path.

Working with objects in edit mode

To edit points and segments of a path, you place the path object in edit mode. When an object is in edit mode, its anchor points appear as small squares along the path; every path has at least two anchor points.



Object path drawn with Curve tool



Object in edit mode, with anchor points visible

When an object is in edit mode, you can select one or more anchor points. You can even select anchor points and segments on more than one object at once, as long as the objects are in edit mode.

To place an object in edit mode

Do one of the following to place a path object in edit mode:

- Double-click the object.
 - Select the object and choose Path ► Edit Path in the Object menu.
 - After you set the last anchor point when using the Curve or Polygon tools, select the Selection tool in the toolbox.
- ◆ **To place multiple objects in edit mode:** You can place two or more objects in edit mode by selecting them, then choosing Path ► Edit Path in the Object menu.
- ◆ **To return from edit mode:** When you finish editing an object, double-click outside the object, or press Enter (Mac) or Esc (Windows) to leave edit mode.

Modifying specialized objects as paths

Some Canvas drawing tools create specialized objects. When you double-click one of these objects to place it in edit mode, Canvas displays special editing handles or configuration options, rather than the anchor points and segments of a regular path object.

The tools that create special vector objects are the Concentric Circles, Grid Maker, Multi-gon, and Spiral tools.

Also, when you modify objects with the Envelope or Extrude commands, Canvas creates specialized objects.

If you want to use path-editing techniques to modify these objects, you can convert them to paths. This usually produces a group of objects. After you ungroup these objects, you will have regular paths that can be edited using the techniques in this chapter.

You can also convert text characters to paths so that you can edit the shapes of individual characters.

For more information on editing specialized objects as paths, see “Converting objects and text to paths” on page 191.



Most Canvas objects can be edited the same way, whether you use shape tools, path tools, or techniques like Combine to create them.

Using the path edit pop-up menu

When an object is in path edit mode, you can use the path edit pop-up menu to help you quickly add, delete, and change anchor points and tangent lines. To see this menu, Command-click (Mac) or right-click (Windows) with at least one object in path edit mode. The available options vary depending on the location of the pointer. Each option is described in greater detail later in this chapter.

Delete Point
Add Point
Break
Join Curves
Cusp/Smooth
Delete Handle
Add Handle
Straighten

The path edit pop-up menu

Delete Point Available when the pointer is on an anchor point and appears as a crosshair. Removes the anchor point from the path, and connects the adjacent anchor points with a path.

Add Point Available when the pointer is on a path segment and appears as a gray arrowhead. Inserts an anchor point with a tangent line at that location.

Break Available when the pointer is anywhere on a path. Splits the path segment at that location, and adds anchor points to the ends of the resulting segments.

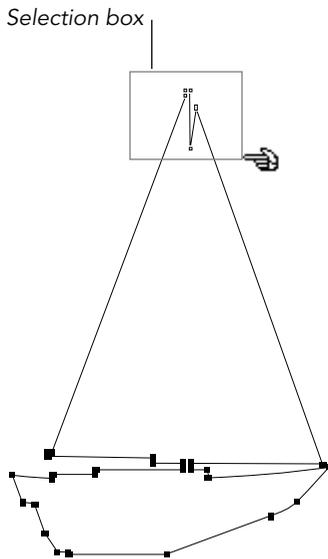
Join Curves Available when you select two anchor points that are not connected by a straight line (the anchor points can be joined by a curve, or not connected at all). Connects the selected points with a straight line.

Cusp Available when the pointer is on a tangent line handle or an anchor point. On anchor points, this option deletes the point's tangent lines. On tangent line handles, this option makes the path either smooth or cornered at the anchor point. To be smooth, the anchor point must have both sides of a tangent line. When smooth, the halves of the tangent line are always 180 degrees from each other and rotate around the anchor point like a propeller. When the anchor point is a corner, the tangent line segments can move independently around the anchor point, like the hands of a clock.

Delete Handle Available when the pointer is on a tangent line handle and appears as a crosshair. Removes the handle and the effects of the tangent line on the path.

Add Handle Available when the pointer is on an anchor point and there are fewer than two tangent line segments attached to the anchor point. Adds tangent line segments to the point.

Straighten Available when the pointer is on a path segment and appears as a gray arrowhead. Makes the path segment straight by removing tangent lines from the segment's anchor points.



When a path is in edit mode, you can use the Selection tool to drag a selection box around multiple anchor points to select them.

Selecting anchor points and segments

When you edit paths, you need to select particular anchor points or segments before you can delete, move, or reshape them. Before you can select anchor points and segments, a path object must be in edit mode (see “To place an object in edit mode,” above).

When a path is in edit mode and you point to an anchor point with the Selection tool, the pointer becomes a crosshair. When you point to a segment, the pointer becomes a gray arrowhead.

You can select points in more than one object. When you move any selected point, all points in the selection move the same way. This also works for segments belonging to separate objects.

- ◆ **To select anchor points and segments:** With the path object in edit mode, click an anchor point or segment to select it. To select multiple points or segments, use the Selection tool to drag a selection box around them, or Shift-click each point or segment.

- ◆ **To select all anchor points:** With the path object in edit mode, choose Select All in the Edit menu.

- ◆ **To select parts of separate paths:** Place the paths in edit mode, and Shift-click the point or segments.

When an anchor point is selected, it changes from a solid to hollow square. If the anchor point has tangent lines, they appear when the anchor point is selected. When you select a segment, the anchor point at each end is selected.

Adding and deleting points and segments

If a segment’s anchor points are too far apart for you to adjust the shape as needed, you can add more. If you create or add more anchor points than you need, you can delete unnecessary ones.

Keep in mind that the more points on a path, the more complex and system resource-intensive it becomes. In particular, too many anchor points can cause printing problems. It’s best to use the fewest possible anchor points placed as far apart as possible to create a path.

- ◆ **To add an anchor point:** With an object in edit mode, Command-click (Mac) or right-click (Windows) a segment to which you want to add an anchor point. In the path edit pop-up menu, choose Add Point. You can also Option-click (Mac) or Ctrl-click (Windows) a segment to add a point.

◆ **To delete an anchor point:** With an object in edit mode, Command-click (Mac) or right-click (Windows) the point you want to delete. In the path edit menu that appears, choose Delete Point. You can also Option+Shift-click (Mac) or Ctrl+Shift-click a point to delete it, or select points and press the Delete key.

◆ **To delete a segment:** Select a segment and press Delete. Deleting a segment of a closed path does not split the path open; the remaining segments are joined and the path remains closed.

To add segments to an open path

You can add segments to the end of an open path using the Curve tool or Polygon tool.

- 1 With the object in edit mode, select the endpoint where you want to add a segment.
- 2 Select the Curve tool (to add straight or curved segments) or the Polygon tool (to add straight segments) in the toolbox.
- 3 Click to add a straight segment beyond the selected endpoint. With the Curve tool, you can add a curved segment by pressing the mouse button to establish the new anchor point and then dragging to position the tangent line.
- 4 To add additional segments, repeat the previous step. When you finish, press Enter (Mac) or Esc (Windows) to leave edit mode.

Closing and opening paths

A closed path is one that starts and ends at the same anchor point. An open path has separate starting and ending points. You can close an open path by letting Canvas create a new segment to join the path's two endpoints. You can open a closed path by splitting the path.

◆ **To close an open path:** With the path in edit mode and the Curve or Polygon tool selected, click one of the endpoints. You can also Ctrl-click (Mac) or Alt-click (Windows) an endpoint with the Selection tool. Canvas closes the path by connecting the endpoints with a new segment. If the adjacent segments are curved, the new segment follows the curve.

◆ **To open a closed path:** With the object in edit mode, Command-click (Mac) or right-click (Windows) an anchor point or segment to open the path edit pop-up menu. In the menu, choose Break; Canvas inserts segment end points to open the object at that location.

Using the Scissors tool to open and divide paths



You can use the Scissors tool to open a closed path and to divide a path into two objects. Splitting a path opens the path at the point where the scissors clip the path.

- 1 Select the Scissors tool in the toolbox. The pointer changes to a pair of scissors.
- 2 Point to the path where you want to split it (you don't need to select the object first). The pointer becomes a crosshair when it is on a point or segment that can be split.
- 3 Click the path when the crosshair is displayed. Canvas adds two endpoints where you click the path and the path opens.
- 4 If the path is closed and you want to split it into two paths, click the path again where you want to split it.

Joining two paths

You can use the Join command to create one path from two separate, open path objects.

◆ **To join two paths:** Select the two open path objects that you want to join (they should not be in edit mode). Choose Path ► Join in the Object menu. Canvas connects the two paths by extending the existing segments or creating a new segment, depending on the distance between the objects.

When you use the Join command to connect two objects that are more than 15 pixels apart, Canvas creates a new line segment between the two closest endpoints. When you join objects whose endpoints are 15 or fewer pixels apart, Canvas extends the two objects to a midpoint between the two closest endpoints.

When the two endpoints on the paths to be joined are 15 or fewer screen pixels apart, you can add a segment by pressing Shift when you choose Join. When the distance between the endpoints is greater than 15 pixels, you can extend the existing segments by pressing Shift when you choose Join.

To join paths at selected endpoints

Canvas, by default, joins paths at the closest endpoints. However, you can select which endpoints to join.

- 1 Place an open object or multiple open objects in edit mode; see “To place an object in edit mode” on page 181.

- 2 Click an endpoint you want to join to another path. The endpoint becomes hollow to indicate that it is selected.
- 3 Shift-click another endpoint. The endpoint also becomes hollow to indicate that it is selected.
- 4 Choose Path > Join in the Object menu, or Command-click (Mac) or right-click (Windows) one of the selected points to open the path edit pop-up menu. In the pop-up menu, choose Join Curves.

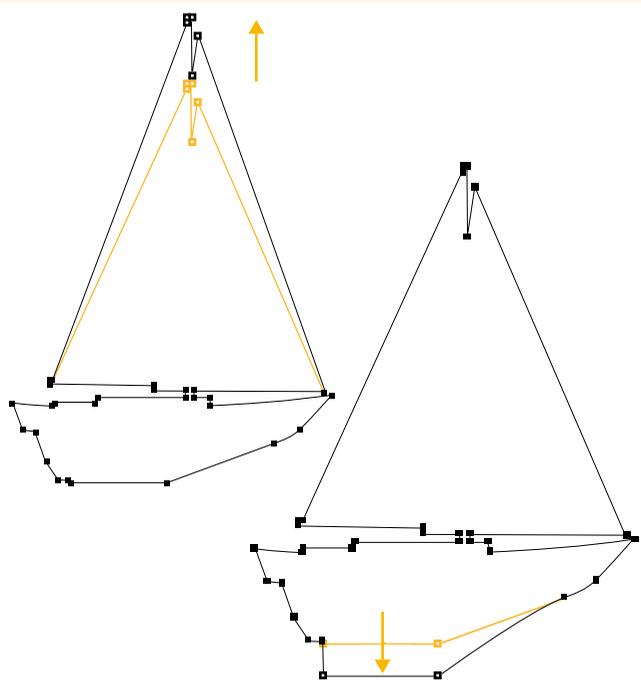
Moving anchor points and segments

With a path in edit mode, you can move points and segments to alter its shape.

Drag an anchor point or segment to move it to a new location. You can also use the keyboard arrow keys to move selected points and segments. Canvas reshapes the segments adjacent to the point.

Pressing Shift while dragging points or segments will constrain their movement to 45-degree intervals.

In these sailboat illustrations, the arrows show the movement of the selected points and segments.



Reshaping paths by editing anchor points

A path can contain two kinds of anchor points: smooth points and corner points.

Smooth point An anchor point that connects two curve segments where the curve flows smoothly through anchor point without a sharp change in direction. Circles and sine waves are examples of paths that have only smooth anchor points.

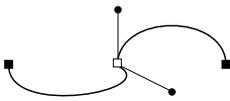
Corner point An anchor point where the path makes a sharp turn at the anchor point. Corner points can connect two straight segments, two curved segments, or one curved and one straight segment.

Tangent lines

All smooth points, and some corner points, have tangent lines passing through them. Canvas displays the tangent lines when a point is selected.

A corner point can have one, two, or no tangent lines. When you select a corner anchor point with two tangent lines, each tangent line can move independently of the other.

When you create paths with only straight segments (using the Polygon tool or the Curve tool), the path's anchor points are corner points. When you draw curved segments (using the Curve or Freehand tool), the anchor points are smooth points. In addition, any points that you add to segments are smooth points by default.



A corner anchor point with independent tangent lines

To change a smooth point to a corner point

You can edit, reshape, and resize two adjoining curve segments independently by converting their smooth anchor point to a corner point.

- 1 With the object in edit mode, click the anchor point to reveal its tangent lines.
- 2 Press Tab and drag one of the handles to move one of the tangent lines. The tangent line pivots at the anchor point and affects only one side of the anchor point.

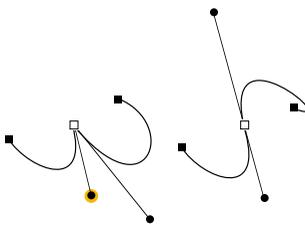
To change a corner point to a smooth point

To smooth out a sharp turn in curved segments, you can change the corner point between them to a smooth point.

Note: The corner point must have two tangent lines for this procedure. If it has fewer than two, first add tangent lines to the point.

- 1 With the object in edit mode, click the anchor point to display its tangent lines.
- 2 Tab-click the handle of the tangent line you want to keep in place; the other tangent line snaps into alignment.

◆ **To toggle between smooth and corner points using the path edit menu:** Select an anchor point and Command-click (Mac) or right-button click (Windows) a tangent line handle. In the path edit



Tab-click a handle of a corner point (highlighted); the other tangent line snaps into alignment and smooths the path

pop-up menu, choose Cusp/Smooth. A corner point becomes a smooth point, and a smooth point becomes a corner point.

Adding and removing tangent lines

An anchor point can have as many as two tangent line segments. Corner points can have one, two, or no tangent lines, and smooth points must have two. You can quickly convert a smooth point to a corner point by deleting one of its tangent lines. Also, to convert a corner point with one or no tangent lines to a smooth point, you must add tangent lines.

To add a tangent line

- 1 In path edit mode, select an anchor point with one or no tangent lines. The anchor point cannot be an endpoint with one tangent line, because endpoints can have only one tangent line.
- 2 Press Tab and drag away from the anchor point to place a new tangent line. You can also Command-click (Mac) or right-click (Windows) and choose Add Handle in the path edit pop-up menu.
- 3 Repeat the previous step to add a second tangent line.

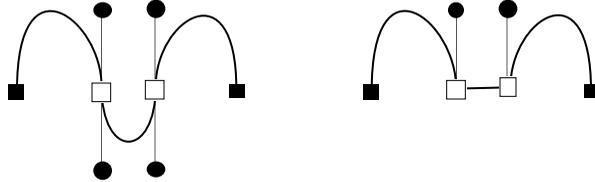
To delete tangent lines

- 1 In edit mode, click an anchor point to display its tangent lines.
- 2 Depending on how you want to edit the anchor point, do one of the following:
 - To delete one tangent line, Command-click (Mac) or right-click (Windows) the tangent line handle and choose Delete Handle in the pop-up menu. You must use this method for anchor points with only one tangent line, and to delete one of two tangent lines attached to an anchor point.
 - To delete an endpoint's tangent line, you can also Tab-click the anchor point.
 - To simultaneously delete both tangent lines of an anchor point, Tab-click the point.

Straightening curve segments

You can straighten a curved segment by selecting it and using the Straighten command in the path editing pop-up menu. This command deletes the tangent line(s) that are curving the segment.

Middle curve segment straightened; Canvas deleted the lower tangent line segments of both anchor points



◆ **To straighten a segment:** With the object in edit mode, Command-click (Mac) or right-button click (Windows) the curved segment that you want to straighten. Choose Straighten in the pop-up menu.

Reshaping curve segments

To adjust the shape of a curve, in addition to moving points and segments along the path itself, you can adjust the tangent lines that control the curve. The angle of the tangent line affects the curve shape, while the length of the tangent line affects the size of the segment.

At a smooth anchor point, adjusting the angle of a tangent line affects the curves on both sides of the anchor point. At a corner anchor point, you can reshape the segments on each side independently. For more information, see “Reshaping paths by editing anchor points” on page 187.

To reshape a curved segment

- 1 With the object in edit mode, click one of the segment’s anchor points to display its tangent lines.
- 2 Drag the handle of the tangent line to change the shape of the associated curve. In the case of a smooth point, the tangent line affects both adjacent curve segments.

Path editing modifier keys

You can use modifier keys in conjunction with mouse actions to help you reshape and edit paths quickly. The following table describes available modifier keys for Mac and Windows versions of Canvas.

Path editing modifier keys

To edit a path this way	Do this on Mac	Do this on Windows
Add an anchor point to a segment	Option-click a segment	Ctrl-click a segment
Delete an anchor point	Option+Shift-click an anchor point	Ctrl+Shift-click an anchor point
Move an anchor point as you place it	Hold down the mouse button, then press the Spacebar and move the mouse	Hold down the mouse button, then press the Spacebar and move the mouse
Change the length of the tangent lines on both sides of a smooth anchor point at the same time	Option-drag a tangent line handle	Ctrl-drag a tangent line handle
Constrain movement to 45-degree increments while changing the length of both tangent lines of a smooth anchor point	Option+Shift-drag a tangent line handle	Ctrl+Shift-drag a tangent line handle
Move one side of a smooth point's tangent line independently of the other side (changing the anchor point from smooth to cusp)	Tab-drag a tangent line handle	Tab-drag a tangent line handle
Make a corner point with two tangent lines into a smooth point	Tab-drag a tangent line handle	Tab-drag a tangent line handle
Constrain movement to 45-degree increments while changing an anchor point from smooth to cusp (or cusp to smooth)	Tab+Shift-drag a tangent line handle	Tab+Shift-drag a tangent line handle
Add a tangent line to an anchor point that has fewer than two tangent lines	Tab-drag an anchor point	Tab-drag an anchor point
Delete both tangent lines of an anchor point or the tangent line of an endpoint	Tab-click the anchor point or endpoint	Tab-click the anchor point or endpoint
Close an open path	Ctrl-click an endpoint	Alt-click an endpoint

Converting objects and text to paths

Some vector objects have specialized properties and unique edit modes instead of the standard path edit mode. For example, you cannot directly edit the path segments of macros, concentric circles, grids, multigons, spirals, and objects modified by the Envelope or Extrude commands. However, you can convert these objects to paths so you can edit them the same as any other vector object.

If you create paths from a specialized vector object, the new shape does not have the same unique editing capabilities as the original. For example, if you convert a multigon star object to paths, you can no longer use the edit handles that let you adjust the depth and twirl of

the points. Similarly, placed macros are no longer linked to their parent macros in the Gallery palette after you convert them to paths.

You can also convert text so you can reshape characters as vector objects. This has the benefit of making the characters independent of their fonts; the font is no longer required to view and print the characters properly. However, once you convert text to paths, you can no longer perform text operations, such as editing, spell-checking, and formatting, on the text. Also, characters with “holes” in them (such as a, b, d, e, g, o, p, r, and q) are converted to composite paths, which cannot be extruded.

◆ **To convert an object to paths:** Select the object you want to convert and choose Path►Convert To Paths in the Object menu. Canvas converts the object to one or more paths.

Ungrouping objects made of multiple paths

When you convert multiple objects, characters, or specialized vector objects to paths, Canvas creates a separate path for each shape and groups them. You can use the Ungroup command in the Object menu to separate them.

For example, if you convert a five-letter word to paths, the resulting object is a group of five paths. To edit just one of the five paths, first choose Ungroup in the Object menu. You can also use the Direct Selection tool to select one path without first ungrouping the object.

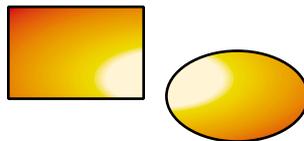
Making and breaking composite paths

You can create openings in a filled path by incorporating multiple paths into a single, composite path. Areas between the paths and areas where the paths intersect are transparent.

◆ **To create a composite path from multiple paths:** Select the paths you want to compose the composite path. Choose Path►Make Composite in the Object menu.

◆ **To separate a composite path:** Select the composite path and choose Path►Break Composite in the Object menu.

Gradient ink applied to a composite object



PRECISION DRAWING AND DIMENSIONING

This chapter describes precision drawing tools and techniques that can help you create scale drawings, floor plans, architectural designs, and other types of technical drawings. This chapter explains how to

- display size information as you draw
- set up the scale for scale drawings
- add dimension objects to illustrations
- use Smart Mouse to align objects

Some of the techniques described elsewhere in this book also apply to precision drawing. For information on document setup and using rulers, refer to Chapter 3, “Document Setup.”

Setting up a document’s measurement scale

Canvas offers a variety of options for creating scale drawings. You can set up a ruler to control the scale of an entire document. You can also customize scale settings for individual dimension objects. Other settings affect the format of measurement and position data.

The following settings affect the measurement of objects in a document:

Rulers You set up a document’s overall drawing scale using the Rulers command and Rulers dialog box. The ruler scale affects all object measurements, including those made with the dimensioning tools. The ruler scale also affects data in the Object Specs palette and status bar. See “Setting up rulers and the drawing scale” on page 41.

Number form A setting in the Preferences dialog box that affects the format of data in the status bar and other displays. This option controls the precision of data and the number format (decimal or fractions). See “Measurement unit preferences” on page 91.

Dimensions You can create custom scale settings for dimension objects using the Dimensioning dialog box. You can customize individual dimension objects, or set a custom scale for all dimension

objects created with a dimensioning tool. See “Customizing the dimensioning tools” on page 198 for more information.

Displaying dimensions as you draw

Canvas can display the horizontal and vertical dimensions of an object as you draw it. The Show Size command makes dimensions (in scale) appear at the pointer as you drag with any drawing tool. These dimensions do not remain in the document.

◆ **To display dimensions when you use drawing tools:** Choose Display ► Show Size in the Layout menu. When you select a drawing tool and drag the pointer in an illustration, the object’s vertical and horizontal measurements appear at the pointer.

When Show Size is on, the command changes to Hide Size.

◆ **To turn off the dimensions display:** Choose Display ► Hide Size in the Layout menu. This command only appears when Show Size is on.

Using the status bar display

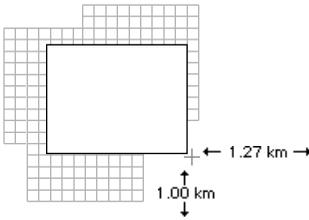
The status bar at the bottom of the screen displays dimensions and position data that can assist you when you draw objects.

The data in the status bar are based on the overall document scale as defined by the current ruler setting. When you draw a vector object, the status bar displays the horizontal and vertical dimensions for most objects. When you move an object by dragging it with the Selection tool, the status bar displays the horizontal and vertical distance that the object has moved. The measurements are based on the overall measurement scale as defined in the Rulers dialog box.

Using the dimensioning tools

You can easily add formatted dimensions to documents with the Canvas dimensioning tools. These tools can measure horizontal, vertical, oblique and perpendicular distances; diameter, radius, angle, area, and perimeter; and mark the centers of arcs and ovals.

Some dimensioning tools create a single dimension, while others let you create baseline and chain dimensions. Baseline dimensions are a series of measurements made from a common starting point. Chain dimensions are a series of measurements in a row.



When Show Size is active, Canvas displays the scaled size of the object as you draw.

 **Tip**

The Smart Mouse can help ensure precise measurements. You can set the Smart Mouse so the pointer snaps to corners and anchor points when you use dimensioning tools. See “Using Smart Mouse for precise alignment” on page 203.

You can create dimension objects that conform to industry standards, including the ANSI, DIN and JIS standards. You can also customize the standard settings — the size of lines, gaps, text, and tolerances. You can also save settings that you have customized as new standards.

The 17 dimensioning tools are grouped in a palette. To open the palette, press the dimensioning tool that appears in the Object tools palette. You can drag the palette away from the toolbox to keep it open while you work.

To add dimensions to an illustration

1 Select a dimensioning tool in the toolbox. When you move the pointer into the document, a prompt appears at the pointer.

2 To begin dimensioning, position the pointer and click as directed by the prompt. The prompt varies, depending on which dimensioning tool you use. For example, if you use the Horizontal dimensioning tool, the prompt says “Click 1st Point.”

Refer to the table “Dimensioning procedures” on page 197 for details on what you should do when each prompt appears.

3 When the “Anchor” prompt appears, move the pointer to position the dimension. If you drag away from the measurement points, the witness lines extend and the text follows the pointer.

4 To anchor the dimension in place, click once.

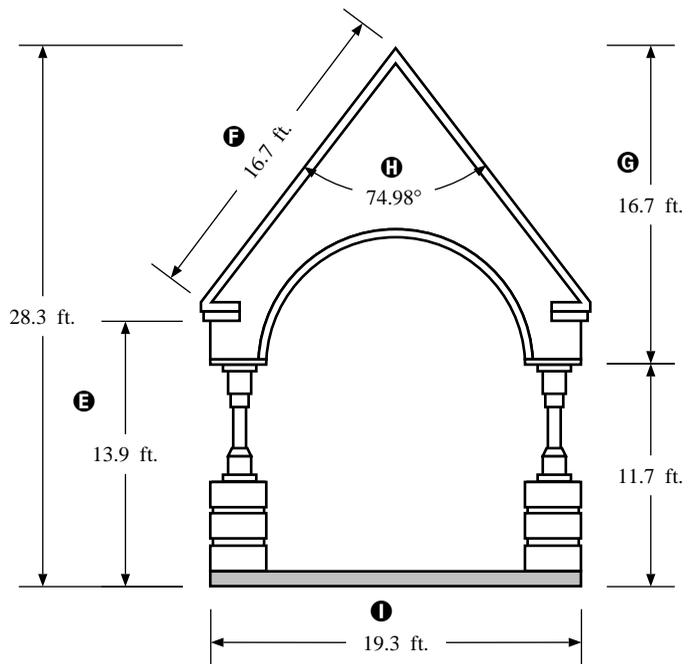
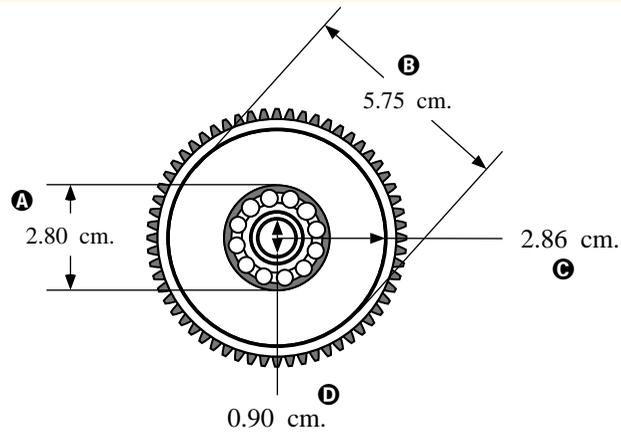
5 For chain and baseline dimensions, you can click additional measurement points and anchor each part of the dimension object. After you anchor the last part, press Enter (Mac) or Esc (Windows) to finish the object.

Types of dimensioning tools and measurements

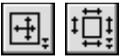
You use the dimensioning tools to add measurements to illustrations. Different tools let you create different types of dimension objects.

Baseline and chain dimensioning tools create groups of dimensions. Baseline dimensions contain several measurements from a common starting point. Chain dimensions are a series of measurements.

- A** Vertical
- B** Oblique
- C** Radius
- D** Diameter
- E** Vertical Baseline
- F** Oblique (with aligned text)
- G** Vertical Chain
- H** Angle
- I** Horizontal



Dimensioning procedures

Dimensioning tool	Prompts	Procedure
 <p>Horizontal, Oblique, and Vertical</p>	Click 1st Point, Click 2nd Point	Click the start point for the measurement, then click the end point and anchor the dimension object.
 <p>Baseline and Chain (Horizontal, Oblique, and Vertical)</p>	Click 1st Point, Click Next Point	Click the start point and then click the end point for the first measurement; anchor the first part of the dimension object. Click the next measurement point and anchor the next part of the dimension object. Continue until finished, then press Enter (Mac) or Esc (Windows).
 <p>Angle</p>	Click 1st Line, Click 2nd Line	Click the start point for the angular measurement, then click the end point.
 <p>Perpendicular</p>	Click Line, Click Point	Click the line to measure from, then click a point anywhere to take a perpendicular measurement from the line to the point.
 <p>Object Side</p>	Click Object Side	Click the side of the object to be measured.
 <p>Radius, Diameter, and Center</p>	Click Arc/Ellipse	Click anywhere on the arc or ellipse and then anchor the dimension object.
 <p>Area and Perimeter</p>	Click Object	Click anywhere on the object to be measured and then anchor the dimension object.

Linking dimensions to measured objects

Because dimension objects aren't attached to the objects they measure, dimensions do not change when you resize objects you have measured. However, you can group a dimension object and the object that it measures. When you do this and then you resize the object, the dimension changes accordingly.

◆ **To group an object and a dimension object:** Select the dimension object and the measured object and choose Group in the Object menu.

Attributes of dimension objects

When you create a dimension object, Canvas uses the current ink and stroke settings, which are shown by the pen ink, fill ink, and stroke

icons in the toolbox. The dimension text uses the current text settings, as indicated in the Text menu by a check mark.

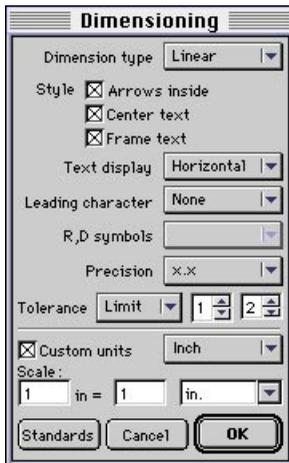
You can change the current ink, stroke, and text settings for new dimension objects, and you can change these settings for existing dimension objects.

- ◆ **To change the type attributes of a dimension object:** Select the dimension object and use the Text menu or the Type palette to choose the font, size, style, and other attributes of the text.
- ◆ **To change the appearance of a dimension object:** Select the object and use the Inks and Strokes palettes to select ink color, pen size, and arrows for the dimension object.
- ◆ **To change attributes for new dimension objects:** Make sure that no objects are selected in the document, and then use the Text menu (or the Type palette), and the Inks and Strokes palettes to change the current settings for new objects and text.

✓ Important

Dimension objects can not display arrows if all the preset arrows have been deleted from the Arrow tab in the Strokes palette.

Customizing the dimensioning tools



You can customize the measurement units, scale, arrow position, tolerance text, and other settings for dimension objects. You use the Dimensioning dialog box to configure these settings. You can set up different configurations for the three categories of dimensioning tools — angular, linear, and radial. You can also use the Dimensioning dialog box to change existing dimension objects.

Using the Dimensioning dialog box

You can open the Dimensioning dialog box by double-clicking a dimensioning tool icon or a dimension object, depending on whether you want to configure the tool or edit a dimension object. Use one of the following three methods to open the dialog box.

- ◆ **To change the properties of regular dimension objects:** Double-click the dimension object to open the Dimensioning dialog box. To change multiple dimension objects, select them and then double-click one of the objects.
- ◆ **To change the properties of chain and baseline dimension objects:** Select the dimension object and choose Ungroup in the Object menu. Then, double-click one of the dimension objects to open the Dimensioning dialog box. You can also double-click a dimension object with the Direct Selection tool to open the dialog box without ungrouping the objects first.

◆ **To change the settings for dimensioning tools:** Make sure that no dimension objects are selected, then double-click a dimensioning tool icon to open the Dimensioning dialog box.

1 Choose the type of dimensions you want to configure in the Dimension Type pop-up menu. (If a dimension object was selected, the object type appears in the pop-up menu).

Select this type	To configure these dimensioning tools
Angular	Angle
Radial	Radius, Diameter, Center
Linear	Horizontal, Vertical, Side, Horizontal Baseline, Vertical Baseline, Horizontal Chain, Vertical Chain, Perpendicular
Object Info	Area, Perimeter

2 In the Style area, adjust the settings for arrow placement, text position, and text framing.

3 Choose the text alignment method in the Text Display pop-up menu.

4 To configure leaders for linear and radial dimension objects, select one of the following options in the Leading Character pop-up menu:

None	Does not include a leader
Left	Includes a left-pointing leader
Right	Includes a right-pointing leader
Automatic	Applies to radial dimension objects only. Includes a leader pointing left when dimension object is left of the object's center, and a leader pointing right when dimension object is aligned with or right of the object's center.

5 To configure radius and diameter symbols for radial dimension objects, select one of the following options in the R,D Symbols pop-up menu:

None	Does not include any symbols.
Leading	Places symbols before the dimension text.
Trailing	Places symbols after the dimension text.

6 To set the dimension precision, choose an option in the Precision pop-up menu. The options tell Canvas to use fractions or the specified number of decimal places in dimension text.

7 To specify the format of tolerance data in dimension objects, choose one of the following options in the Tolerance pop-up menu. Type the tolerance numbers in the text boxes.

None	Does not include any tolerance amount.
One	Prints the tolerance amount from the first text box, with “± ” and the dimension text.
Two	Prints tolerance numbers from both text boxes. To use a negative number, type a minus sign (-) before the number.
Limit	Prints two dimensions, calculated from the actual dimensions and the two tolerance values.

8 To set a custom scale for dimension objects, turn Custom Units on. This overrides the measurement units specified for the document rulers. Choose a measurement unit in the adjacent pop-up menu and type the actual measure in the first text box. Type the scaled measurement in the second text box. Choose the scale measurement unit in the adjacent pop-up menu.

For example, if you want to use a scale of 1 centimeter equals 1 meter, do the following: turn on Custom Units; select Centimeter in the first pop-up menu; type “1” in the first and second text boxes; and choose “m.” in the second pop-up menu.

9 Click OK to close the dialog box and implement the settings.

Style and Text Display settings

Use the following style options in the Dimensioning dialog box to customize the appearance of dimension objects.

A Arrows Inside. Dimension arrows appear next to the dimension text when this option is on.

B Center Text. Must be off if you want to drag dimension text outside the witness lines.

C Frame Text. Turn this option on to frame the dimension text.

Use the following options in the Text Display pop-up menu to format the dimension text.

Horizontal. Text is always aligned horizontally in all dimension objects.

Option on



Option off



Horz/90°. Text is aligned horizontally, except text is rotated 90° vertically for vertical dimension objects.

Aligned. Text is always aligned with the angle of the dimen-

sion arrows.

Above. Text runs above the dimension arrows.

Below. Text runs below the dimension arrows.

Using industry standards for dimension objects

If you want to use industry standard settings for dimension objects, click the Standards button in the Dimensioning dialog box to open the Dimension Standards dialog box. You can choose several industry standards in the pop-up menu. You can also use the Dimension Standards dialog box to further customize dimension objects.

Dimension Standards settings

The settings in the Dimension Standards dialog box specify the length and position of various elements of dimension objects, based on industry standards.

Current standard. Choose from five standard measurement systems: ANSI (American National Standards Institute) DIN (Deutsches Institut für Normung), BS-380 (British Standards Institute), ISO (International Organization for Standardization), and JIS (Japanese Industrial Standard).

Settings you create also appear in this pop-up menu.

Units. Choose the measurement units you want to use for

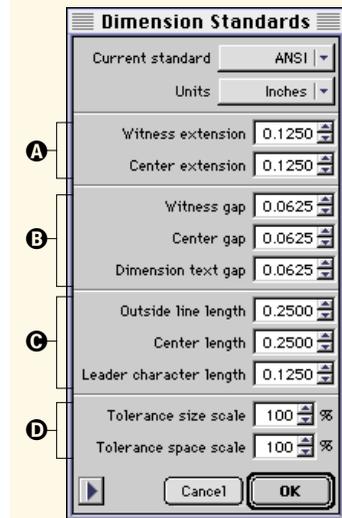
all settings in the dialog box.

A Extension. Set the length of the witness lines' extensions and the center line extension.

B Gap. Set the size of the gap between the witness lines and measurement points on objects; the gap between the center extension and center point mark; and the gap between the dimension text and dimension arrows.

C Length. Set the length of the arrow lines (applies only when arrows are outside the witness lines); the length of center extension lines' leader characters; and the length of the center extension line.

D Tolerance scale. The size of



tolerance text and space between tolerance text, as a percentage of the dimension text size and spacing.

Saving and deleting settings

If you customize the settings in the Dimension Standards dialog box, you can save the settings as a custom standard. Press the triangle button at the bottom-left corner of the Dimension Standards dialog box to display a menu for saving and deleting dimension standards.

When you save or delete standards, they remain saved or deleted whether you click OK or Cancel to close the Dimension Standards dialog box.

◆ **To save the settings as a new standard:** Press the triangle button at the bottom-left corner of the Dimension Standards dialog box. In the pop-up menu, choose “Save settings as.” Type a name for the custom standard in the dialog box that appears. Click OK. The new standard will appear in the Current Standard pop-up menu.

◆ **To delete a custom standard:** Press the triangle button at the bottom-left corner of the Dimension Standards dialog box. In the

pop-up menu, choose “Delete standard.” In the dialog box that appears, choose a custom standard in the pop-up menu and click OK.

Using Smart Mouse for precise alignment

Smart Mouse is a drawing aid that can help you align objects precisely. Smart Mouse is particularly useful when using dimensioning tools, because it can snap the pointer to the corners (and other points) of objects, so dimension objects are perfectly aligned.

You can use 12 types of Smart Mouse constraints. The constraints make the pointer (and objects that you draw or drag) snap to

- the corners or centers of objects
- even divisions (such as the midpoints) of object segments
- specified lengths or angles
- horizontal, vertical, or diagonal movement
- tangential or perpendicular alignment with objects
- the edges of vector objects

Types of Smart Mouse constraints

Relative constraints Indicate the relationship between the beginning position and current position when you draw or drag an object. These constraints can display pointers to indicate a constraint is met. The relative constraints are: Horizontal, Vertical, Diagonal, Angle, Multiple Angle, Length, and Tangent & Perpendicular.

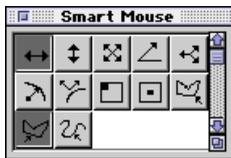
Absolute constraints Indicate the relationship between the pointer and objects. These constraints (except Object Edges) can display source lines and pointers to show a constraint is met. The absolute constraints are: Object Corners, Object Fractions, Polygon & Bézier Anchors, Polygon Fractions, and Object Edges.

To activate Smart Mouse constraints

To use the Smart Mouse, select the constraints and then turn on Snap To Smart Mouse. Refer to the table “Smart Mouse constraints” on page 204 to learn how each constraint works.

1 Choose Smart Mouse in the Layout menu. This opens the Smart Mouse palette, which contains icons for all constraints.

- To identify a constraint, press the icon and its name and current value (if any) pops up.



Constraint icons appear in the Smart Mouse palette. The active constraints are shaded.

- To activate or deactivate a constraint, click its icon. Active constraint icons are highlighted.

2 Choose Snap To ► Smart Mouse in the Layout menu to turn on the Smart Mouse. A check mark shows that Smart Mouse is active.

Note: Be sure Snap To Grid (in the Layout ► Snap To menu) is off when you use the Smart Mouse. If Snap To Grid is on, the pointer will snap to the grid and not to active Smart Mouse constraints.

Smart Mouse constraints

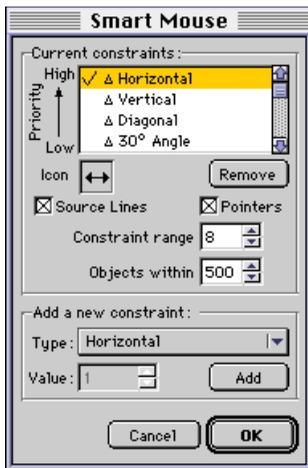
When this constraint is active	Smart Mouse snaps objects and constrains the pointer to
 Angle	A specified angle
 Diagonal	Straight diagonal movement — all multiples of 45°
 Horizontal	Straight horizontal movement— 90° and 270°, or 0° and 180°, depending on the current coordinate system
 Vertical	Straight vertical movement — 0° and 180°, or 90° and 270°, depending on the current coordinate system
 Length	A specified length in points (based on 100% magnification)
 Multiple Angle	All multiples of the specified angle
 Object Corners	The corners of the bounding boxes of vector objects
 Object Edges	Edges of the paths of vector objects (not their bounding boxes); when Object Edges is active, other constraints don't affect the pointer
 Object Fractions	A specified division of vector objects; for example, specify 1/2 to snap to the center of objects
 Object Points	Any anchor point on the paths of vector objects
 Object Segments	Specified divisions of the segments of vector objects; for example, the pointer snaps to the midpoints of segments if you specify 1/2
 Tangent & Perpendicular	Movement in a straight line, tangent or perpendicular to vector objects

Identifying multiple constraints

Up to two Smart Mouse constraints can be met at the same time. For example, you can drag an object in such a way that it triggers both the horizontal constraint and object corner constraint. Although you can activate several constraints, only two constraints can affect the pointer at once.

✓ Tip

To temporarily hide Smart Mouse pointers, press the Shift key. Smart Mouse pointers reappear when you release the Shift key.



Constraints are listed at the top of the Smart Mouse dialog box, from High to Low priority. A check mark indicates active constraints. Constraints preceded by a delta symbol (Δ) are relative constraints.

Smart Mouse can display special pointers to indicate that constraints are met. You can toggle the pointer display if more than one constraint is active. The Pointer option (see “Constraint settings,” next) must be active to see Smart Mouse pointers.

◆ **To toggle the Smart Mouse pointer:** Press Command (Mac) or Alt (Windows) when a constraint pointer is visible. If another pointer appears, both constraints are met. The symbols won’t change for different settings of one constraint type, such as two different values for the Angle constraint.

Customizing Smart Mouse constraints

You can activate constraints, change their values, and add and delete constraints in the Smart Mouse dialog box.

- 1 Choose Smart Mouse in the Layout menu to open the Smart Mouse palette if necessary, then double-click a constraint icon to open the Smart Mouse dialog box.
- 2 To activate or deactivate a constraint, click to the left of the constraint name in the scrolling list. You can activate multiple constraints, but only two can affect the pointer at once.
- 3 Configure the constraint settings described next and click OK.

Constraint settings

The settings in the Current Constraints area at the top of the Smart Mouse dialog box affect the behavior of all Smart Mouse constraints. Select a constraint in the list to see its symbol in the Icon box.

Priority When multiple constraints are active, those at the top of the scrolling list take precedence over those lower in the list. To change the priority of a constraint, drag it to a new position in the list.

Source Lines If checked, Canvas displays a line to show that the pointer, or an object you are moving, is aligned horizontally or vertically with a snap point — such as the corner of an object.

Pointers If checked, constraint symbols appear as you draw or drag objects to indicate that a constraint is met.

Constraint Range The maximum distance, horizontally or vertically, from a target point at which the constraint causes the pointer to snap to the target point.

Objects Within For absolute constraints only, specifies how close the pointer must be to an object for the object to trigger the constraint.

Adding and deleting constraints

You can add new Smart Mouse constraints and delete ones you don't need. When you add a constraint, it appears in the Smart Mouse window; constraints you remove no longer appear.

- 1 Double-click an icon in the Smart Mouse window to open the Smart Mouse dialog box. If the Smart Mouse Window isn't open, choose Smart Mouse in the Layout menu.
- 2 To add a constraint, choose one in the Type pop-up menu. For a relative constraint, enter the constraint value in the Value box, and then click the Add button.

For this Constraint	Enter this value
Object Fractions, Object Segments	The number of divisions. For example, type 2 if you want the constraint to snap to the middle (1/2 point) of an object or segment.
Angle	The angular measurement in degrees.
Length	The distance in pixels.

- 3 To delete a constraint, select the constraint in the scrolling list at the top of the dialog box, and then click the Remove button.
- 4 Click OK to implement any changes and close the Smart Mouse dialog box.

VECTOR EFFECTS

Canvas provides several special effects that let you develop complex illustrations from basic objects. You can apply the effects described in this chapter to any vector object; some can be applied to text objects, too. These commands help save time by quickly generating new objects and letting you easily modify the appearance of existing objects.

This chapter explains how to use these menu commands:

Mask Uses a vector or text object to block out another vector, text, or paint object.

Transform The commands in the Transform submenu let you colorize and fractalize objects, and create offset shadows.

Combine Creates new objects from two or more objects. You can outline, merge, subtract, and divide overlapping objects.

Blend Creates a series of objects that merge one shape into another. You can use Blend to create subtle shading and to generate chains of gradually changing shapes.

Envelope Lets you distort objects using preset envelopes and lets you create custom envelopes for reshaping objects.

Extrude Adds a third dimension and lighting effects to vector objects. You can manipulate extruded objects interactively in three-dimensional space.

As you apply effects to objects, keep in mind that some of these operations are system memory-intensive and might significantly increase the resource and storage requirements of a document.

Masking objects

In Canvas, you can use text and vector objects to selectively show portions of other text, vector, or paint objects behind it. This is called *masking*, and the front object is a mask object. Mask objects are like

windows in a wall; through the transparent mask, you can see what's behind it, but the rest is blocked from view.



Text object in front of an image of a clam shell



The Mask command lets you hide portions of the image that are not directly behind the text

You can mask multiple objects with one object. Canvas does not group these objects, letting you move the mask object or any of the background objects independently to get the perfect arrangement. In addition, you can choose to display or hide the outline of the mask object, or remove the mask effect entirely.

- ◆ **To mask objects:** Select at least two overlapping objects; the front object will become the mask object, and must be a vector or text object. Choose Mask>Make in the Object menu.
- ◆ **To hide or show the outline of a mask object:** Select a mask object and choose Mask>Hide/Show in the Object menu.
- ◆ **To remove a mask effect:** Select a mask object and choose Mask>Release Mask in the Object menu.

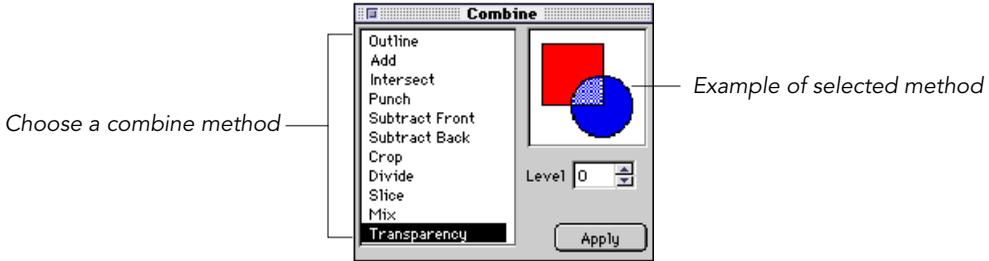
Combining objects

The Combine command makes new objects from the intersection of two or more vector objects. You can outline the overlapping objects, delete all except the overlapping area, subtract the overlapping area, and perform other combinations.

To combine objects

- 1 Select two or more objects that you want to combine. Each selected object must overlap at least one other selected object.
- 2 Choose Combine in the Effects menu to open the Combine palette, if necessary.

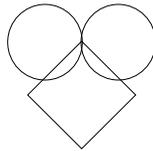
- 3 In the Combine palette, choose a combine method from the list (the methods are described below). An example of the selected combine method appears on the right.
- 4 Click Apply to implement the current settings.



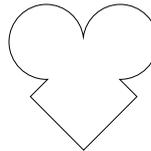
Selecting a combine method

In the Combine palette, you can choose various methods for combining objects. Some methods require that the paths of overlapping objects intersect for the effect to be visible or work properly. In addition, some methods work only with closed vector objects, and not with lines and open curves.

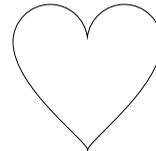
Outline Creates one path around the selected objects and fills the interior of the new shape with the ink of the front object.



*Original objects:
two circles and a
rotated square*



*Objects combined
with the Outline
method*



*Outline shape smoothed
into a heart using path-
editing techniques*

Add Joins two objects where they overlap to create a compound path, and fills the new shape with the ink of the front object. Compound paths can include multiple closed shapes that have holes in them, unlike objects created with the Outline option.

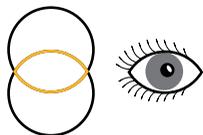
With the Add method, Canvas merges the handle to the cup where they overlap, leaving a hole inside the handle



Original objects



Combined with Add method



The Intersect method helps you create some useful, basic shapes. Here, the intersection of two circles (highlighted) results in an eye shape.

Intersect Creates a new object from the intersection of all selected objects and fills the new object with the ink of the front object. All selected objects must be closed paths and share a common area.

Punch Removes the area where selected objects intersect and fills the new object with the ink of the front object. If you select more than two objects, Canvas starts with the back object and continues forward through the stacking order.

Subtract Front Removes from the back object the areas of overlapping objects in front. The back object retains its ink attributes.

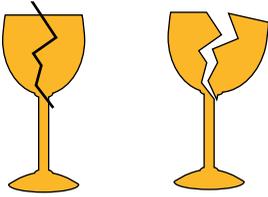
Subtract Back Removes from the front object the areas of overlapping objects behind it. The front object retains its ink attributes.

Crop Removes areas of objects that are not behind the top object.

The Crop method can produce effects similar to “masking” an illustration. However, cropping actually removes areas, where masking only hides areas.

For this illustration, the artist used an oval to crop a vector drawing of pine trees. Another gradient-filled oval provides a background for the completed drawing.





Using the Divide method, the artist “broke” the wine glass with a jagged line.

Divide Creates new objects where selected objects overlap. This option lets you use lines to “cut” other objects in pieces.

Slice Cuts the path of an object where it intersects with objects in front of it in the stacking order. Unlike other combine methods, slice results in open-ended paths. For example, slicing a circle in half with a line produces two arcs, as opposed to two closed semicircles.

Mix Creates new objects where selected objects overlap, similar to the Divide option. However, Canvas fills overlapping areas with a new color (the original colors must be solid). To determine the new color, Canvas compares the CMYK values of all the overlapping objects and uses the highest value of each color. (If you are using RGB colors, Canvas first converts the colors to CMYK.) For example:

	Cyan	Magenta	Yellow	Black
Color 1	50	30	25	5
Color 2	25	40	20	0
New Color	50	40	25	5

Transparency Creates new objects where selected objects overlap, and fills overlapping areas with a new RGB color (the original colors must be solid). However, transparency lets you specify the level of transparency. When you select the Transparency option, enter a percentage in the text box that appears; 100 percent is completely transparent, and zero is opaque.



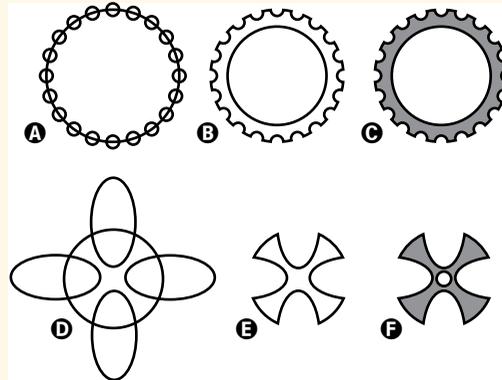
Using the Transparency method, the artist created the illusion that you can see through the wine glass. Where the glass overlaps the wine bottle, you can faintly see the bottle’s label and shape.

Note: If multiple overlapping objects are grouped, Canvas treats the group as a single object and doesn’t apply the transparency or mix effect within the group.

Building complex shapes

Combine makes it easy to create complex shapes such as gears.

- A** Small circles were distributed around the large circle using the Blend command (described in this chapter), then ungrouped.
- B** The Subtract Front method removed the small circles to create the teeth of the gear.
- C** The Punch method removed the center of the gear.
- D** To create the spokes of the gear, Subtract Back was used to remove the four ovals from the circle.
- E** Completed spokes of the gear.
- F** Punch was again used to create the hole for the axle.



Completed gear



Blending objects

Using the Blend effect, you can create gradual transitions in shape, color, and stroke width between two or more objects. Canvas generates a series of objects (from back-to-front through the stacking order) that appear to transform one object into another.

Artists often use blends to create highlights and shadows in vector drawings that provide the illusion of roundness and lighting. In addition, you can use blends to copy and evenly distribute objects around shapes to create borders.

Canvas can blend solid color inks only. If you blend objects with hatches, symbols, textures, or gradients, Canvas generates the blend objects but doesn't fill them with an ink.

To blend objects

Select two or more vector objects. If necessary, choose Blend in the Effects menu to open the palette. Configure the settings and click Apply.

of shapes. The number of objects Canvas creates for the blend. Higher numbers result in smoother blends.

Rainbow colors. Creates a rainbow-like blend of colors between objects. This introduces more color variations than a standard blend, which uses only combinations of the original colors. When you turn on this option, two buttons appear; choose a clockwise or counter-clockwise path around the color wheel.

Bind to a path. Turn on to use the path of an object (not in the current selection) to arrange blend objects. When you click Apply, Canvas prompts you to *Choose Path*; click the object to which you want to bind the blend objects.

Point to point. Available when blending two objects. This option lets you rotate blend objects, creating the illusion that one object is twisting into another. When you click Apply, Canvas prompts you to *Choose 1st Point*; click an anchor point on one object. Canvas then prompts you to *Choose 2nd Point*; click an anchor point on the other object. To reverse the blend direction, Option-



click (Mac) or Ctrl-click (Windows) when you choose the two points.

Dynamic. Lets you use the Direct Selection tool (hollow arrow) to accelerate, decelerate, expand, contract, and redirect the blend after Canvas creates it. Dynamic blends aren't available for specialized objects, such as multigons, spirals, concentric circles, and grids.

✓ Tip

To ensure that blended objects have the same number of anchor points, copy an object, edit its shape, and blend between these objects.

Using blends for dimensional effects

By specifying a high number of blend objects, you can create gradual transitions between shapes and colors. With the appropriate settings, colors seem to fade and mix into each other, and the blend objects do not appear as distinct objects. This effect is often used to add realistic highlights and shadows to objects so they appear three-dimensional.

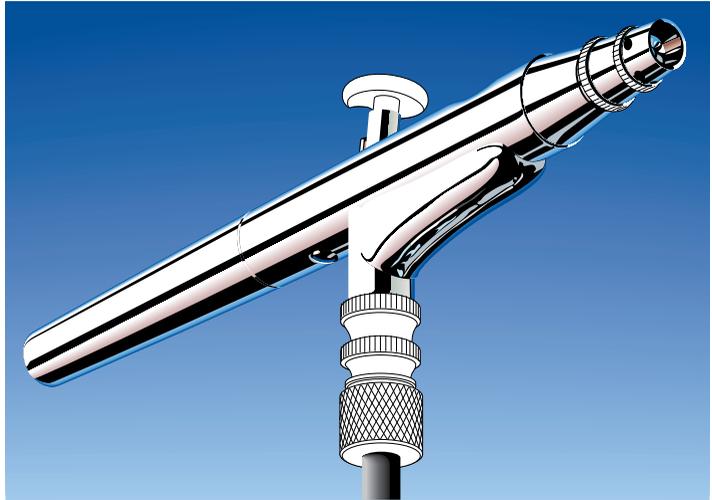
When configuring the blend settings, keep in mind that the size of the final output affects the number of shapes required to make the blend appear smooth. For large posters, you might need to use a lot of shapes, but fewer shapes are required for small illustrations.

In addition, objects that you blend must have the same number of anchor points for the blend to appear smooth. Canvas uses the anchor points to calculate the steps and shapes in a blend; an inconsistent number of anchor points can cause unwanted twists and distortions.

Shading with blends

By choosing the right shape and color combinations, you can use the Blend effect to create realistic three-dimensional effects, such as chroming.

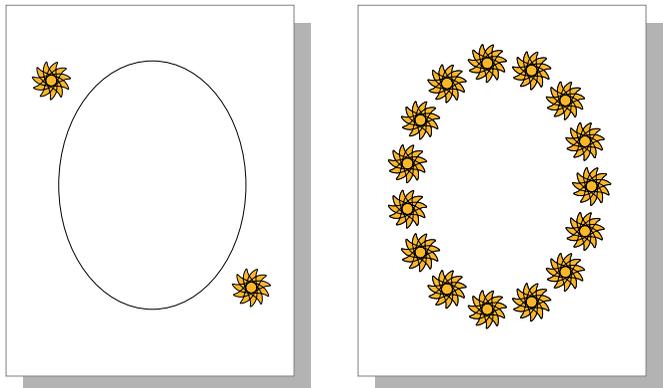
The airbrush shown here is a very complex application of blends, using high numbers of shapes to create subtle transitions that give the impression of roundness and reflectiveness.



Using blends to create patterns

Although blends are often used to create gradual, smooth transitions between shapes and colors, you can also use the Blend command to create and evenly space a pattern across a layout. By specifying a low number of shapes and widely spacing the front and back objects, you can make each blend object a distinct object. This effect can be useful for creating borders and other patterns.

The artist created this border by first creating a flower-like multigon, copying it, and drawing an oval. To distribute the flowers evenly around the oval, the artist selected the two multigons, turned on the "Bind to a path" option in the Blend palette, specified a relatively low number of shapes (15) for the blend, and chose the oval as the binding path.

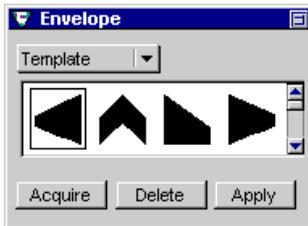
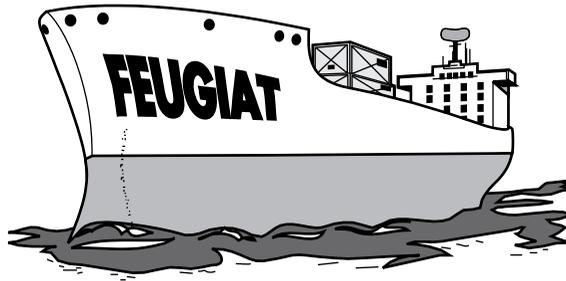


Distorting shapes

The Envelope command lets you distort shapes and text, as if an illustration was drawn on a rubber sheet and then stretched.

When an object is in envelope edit mode, its bounding box acts like the rubber sheet. Canvas includes several envelope styles that offer various handles you can use to stretch an object's bounding box. Using this effect, you can create new shapes, add a sense of motion to an illustration, or arrange text so it appears to be painted on a three-dimensional object.

Using the Envelope command, the artist distorted the type for the ship's name to match the contour of the ship's hull, giving the impression that the name was painted on the side.



Using envelope templates

Canvas has several envelope templates that you can use to instantly distort shapes. The silhouettes in the template scroll list show the distortion created by each template.

In addition, you can create your own envelope templates. After you apply the envelope effect to an object, you can acquire the shape of the envelope as a template.

To apply an envelope template

- 1 Select a vector object.
- 2 Choose Envelope in the Effects menu to open the Envelope palette, if necessary.
- 3 In the palette, choose Template in the pop-up menu.
- 4 Click a preview shape in the scroll list to select it, and click Apply.

To save an envelope as a template

To store an object's envelope as a template, you must first have used the envelope effect on the object. (See "To apply an envelope effect," next.) You can't acquire a standard vector shape, such as a circle, unless you first apply the envelope effect

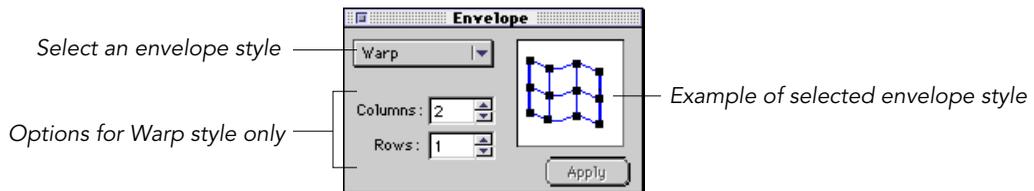
- 1 Select an object that has been edited using the envelope effect. The object cannot be in envelope edit mode.
 - 2 Choose Envelope in the Effects menu to open the Envelope palette, if necessary.
 - 3 In the pop-up menu, choose Template.
 - 4 Click Acquire; a preview of the envelope shape appears in the scroll box.
- ◆ **To delete an envelope template:** In the Envelope palette, choose Template in the pop-up menu. Click a preview shape in the scroll box to select it, and click Delete.

Using envelope styles

In addition to envelope templates, Canvas has six envelope styles that let you edit shapes in different ways. Each style moves and changes the bounding box in a particular way. See the table below for information on the attributes of each style.

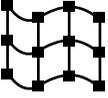
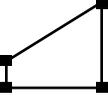
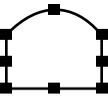
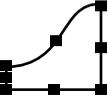
To apply an envelope effect

- 1 Select a vector object.
- 2 If necessary, choose Envelope in the Effects menu to open the Envelope palette.



- 3 In the palette, choose an envelope style in the pop-up menu and click Apply.
- 4 Drag the envelope handles that appear on the bounding box of the object to edit the shape.

Envelope styles and editing options

Example	Style	Number of handles	Envelope behavior
	Warp	Enter the number of horizontal and vertical handles in the text boxes.	Each handle behaves like a path anchor point and can move in any direction.
	Distort	Four	Each side of the envelope edit box is a straight line; handles can move in all directions. This style is useful for creating perspective.
	Straight Line	Eight	All handles are connected by straight lines. Corner handles are constrained to right-angle movements; side handles can move in all directions.
	Single Cusp	Eight	Side handles form convex or concave curves between corner handles. Side handles can move in any direction; corner handles are constrained to right-angle movements.
	Double Cusp	Eight	Side handles form S-shaped curves between corner handles. Side handles can move in any direction; corner handles are constrained to right-angle movements.
	Bézier	Eight	All handles behave like smooth anchor points and can move in any direction.

Extruding objects

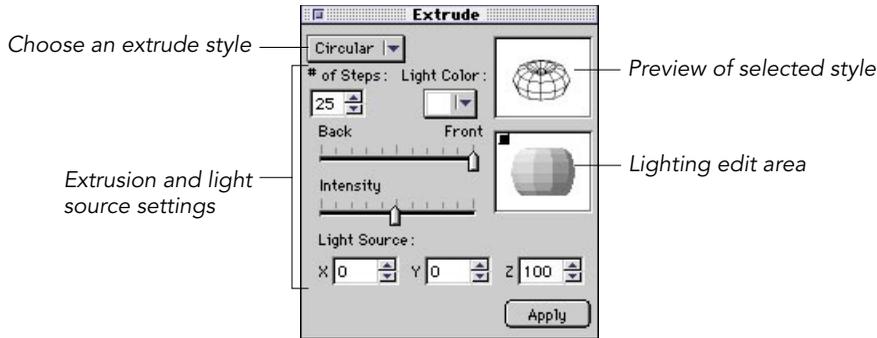
The Extrude command lets you create objects that appear to have three dimensions. Canvas can create parallel, circular, and semi-circular using vector objects, and parallel extrusions using text objects.

You can rotate and scale extruded objects in three-dimensional space. In addition, you can set the placement, intensity, and color of a simulated light source and Canvas applies appropriate shading to the extruded object.

Although Canvas extrusions appear similar to QuickDraw 3D objects, they do not require installation of the QuickDraw 3D shared libraries, and do not use the 3DMF (3D metafile) file format. However, if you have QuickDraw 3D installed, you can save an extruded object in 3DMF format.

Note: Canvas uses only solid fill colors for extruded objects, and ignores stroke attributes, pen inks, gradients, hatches, symbols, and textures.

◆ **To extrude objects:** With a text or vector object selected, choose Extrude in the Effects menu. In the Extrude palette, choose the style of extrusion, the lighting color, and the position of the light source. Click Apply to implement the settings.



Choosing an Extrude style

The pop-up menu at the top of the Extrude palette displays extrude styles. When you select a style, an example appears at the upper right. You can choose one of three extrude styles.

Extrude styles

Preview	Style	Result
	Parallel	Adds thickness to a shape, as though the shape were cut out of a slab of clay. You can create parallel extrusions with text objects and closed vector objects.
	Circular	Extrudes a shape in a circular path. You can set the diameter of the extrusion path and the number of steps (6-60) used to complete the extrusion (see "Completing a circular or sweep extrusion," below). You can apply circular extrusions to open and closed vector objects, but not text.
	Sweep	Extrudes a shape along a circular path, and lets you specify the number of degrees (10 to 360) to extrude. You can also set the diameter of the extrusion path and the number of steps (6-60) used to complete the extrusion (see "Completing a circular or sweep extrusion," below). You can apply sweep extrusions to open and closed vector objects, but not text.

Completing a circular or sweep extrusion

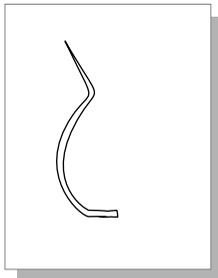
When configuring a circular or sweep extrusion, you can specify the number of steps you want Canvas to use. The more steps, the smoother and less “blocky” the extrusion appears.

◆ **To specify the number of steps for a circular or sweep extrusion:** In the Extrude palette, enter a number between six and 60 in the “# of Steps” text box.

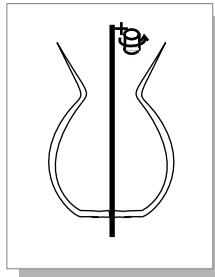
After you apply a circular or sweep extrusion to an object, you also need to set the diameter of the extrusion path. Canvas displays a black bar to mark the center of the extrusion. Canvas also shows a mirror image of the original object to show the position of the extrusion at 180 degrees.

◆ **To set the extrusion diameter:** Drag the black bar right, left, up, or down, depending on the direction you want to extrude. The mirror image of the original object moves as you drag the black bar. When the diameter is the right length, press Enter (Mac), Esc (Windows), or double-click. Canvas completes the extrusion.

Circular and sweep extrusions



Original shape

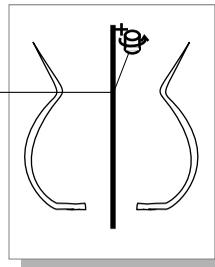


Position the black bar like this...



...for an extrusion with no gap in the middle

Circular extrusion pointer



Position the black bar like this...



...for an extrusion with a gap in the middle

Creating lighting effects

You can add lighting to extruded objects to enhance the three-dimensional appearance. You can control the color and position of the light source to get the exact effect you want. Canvas uses shades of gray to create highlights and shadows. Canvas then mixes the highlights and shadows with the color of the light source and the fill color of the object.

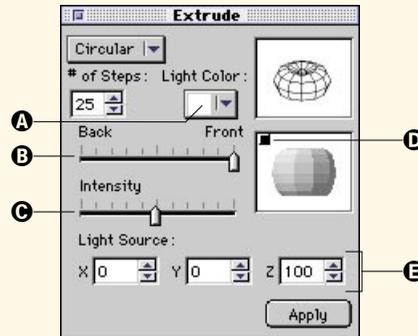
Extrusion lighting

Use the following options to configure lighting effects for extruded objects.

A Choose a light source color from the pop-up palette, or create a custom color; see “Creating custom colors in pop-up palettes” on page 136.

B Drag the Back/Front slider to specify the depth of the light source in three-dimensional space (the z-position).

C Drag the Intensity slider to the right make the light source brighter.



D Drag the handle to set the horizontal and vertical (x- and y-position) of the light source and preview the lighting effect.

E Instead of dragging the Back/Front slider and light source handle, you can enter x-, y-, and z-positions in the text boxes.

Editing extruded objects

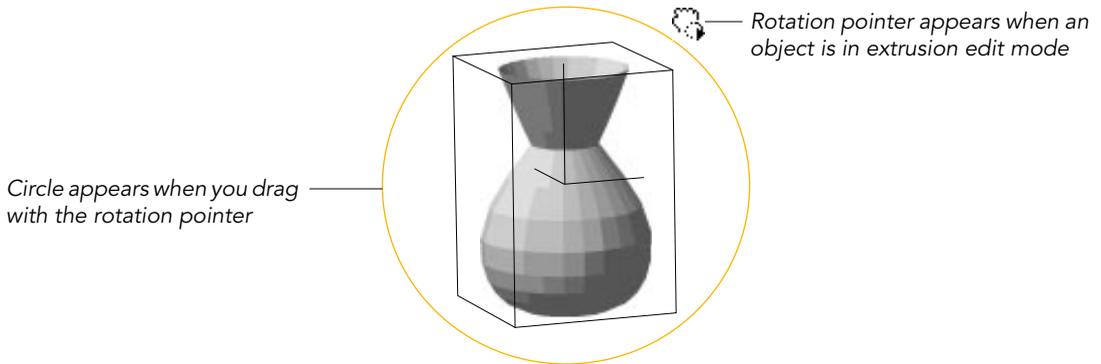
Canvas lets you rotate and scale extruded objects interactively. To rotate and scale extruded objects, the object must be in extrusion edit mode. Immediately after you apply the Extrude effect, the object is in edit mode; to exit this mode, double-click outside the object or press Enter (Mac) or Esc (Windows).

◆ **To place an extruded object in edit mode:** Double-click the extruded object.

In edit mode, Canvas displays three axes, representing the three dimensions. Each axis has a handle, and when you roll the pointer over a handle, it changes to an extrusion pointer. Otherwise, the pointer appears as a rotation pointer.

To rotate an extruded object

When you first apply the Extrude effect, the object appears solid gray and flat because it is facing you (the z-axis points directly at you). To see all dimensions, rotate an edge of the object toward you. With the rotation pointer, drag a side in the direction you want to rotate the object. As you drag, Canvas displays a circle to show the space in which the object can rotate. Dragging inside the circle rotates the object in all three dimensions; dragging outside the circle rotates the object on the plane that is facing you.



You can also rotate an extruded object in two dimensions, like other vector objects, using the Rotate or Freeform commands in the Effects menu. The object can't be in extrusion edit mode to use these commands. When you use the Rotate and Freeform commands, Canvas does not reapply lighting effects as with three-dimensional rotation. In other words, the light source appears to move with the object, instead of remaining in the same place as the object rotates.

Changing the shape of extruded objects

When an extruded object is not in edit mode, you can resize and reshape it like other two-dimensional vector objects. You can

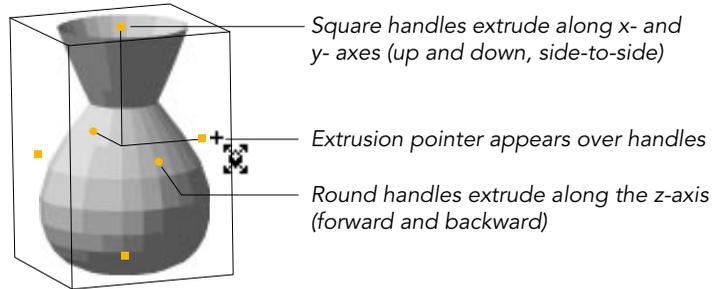
- drag a handle on the bounding box to resize the object
- place the object in freeform mode to skew the object
- use the Scale or Object Info commands to resize the object
- apply the Envelope effect to warp and distort the object

In addition to these two-dimensional editing functions, extruded objects have unique, three-dimensional properties. When an object is

in extrusion edit mode, you can make it thicker, wider, or taller, and Canvas redraws the object to account for lighting changes.

Editing extruded objects

When you drag a handle, Canvas extrudes the object outward from the center, along the corresponding axis. In other words, dragging a square handle to the right extrudes the object to the right and the left simultaneously.



Changing the color of extruded objects

When you extrude a vector object, Canvas uses combinations of a solid-color fill ink, shades of gray, and the light-source color to create a three-dimensional appearance. After you extrude an object, you can apply solid color fill inks (not gradients, hatches, symbols, or textures) and change the color of the light source in the Extrude palette. When you change colors, Canvas redraws the object to show the interaction of the new colors with the object's shape and shading.

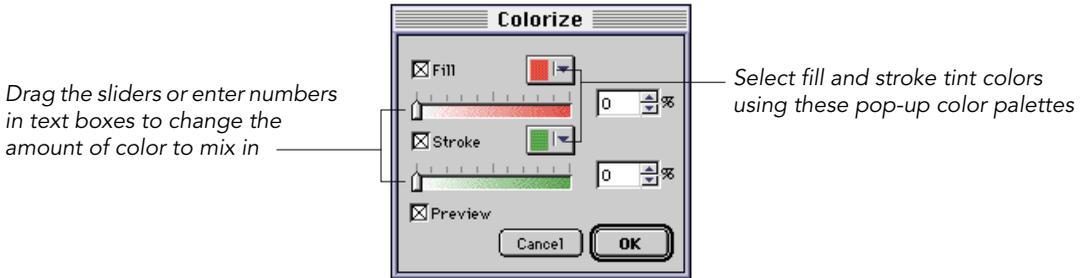
Colorizing objects

You can use the Colorize command to tint vector objects with solid color fill or pen inks when you want to mix two colors, or shade one color with another. Doing this in the Inks palette can be complicated, because you have to create a custom color and set the correct values to approximate a two-color mixture. The Colorize command lets you simply select two colors and choose the percentage of each.

To colorize a vector object

- 1 Select at least one vector object that has a solid color fill or pen ink. Colorize has no effect on gradient, hatch, texture, and symbol inks.
- 2 Choose Transform►Colorize in the Effects menu.
- 3 In the Colorize dialog box, turn on the Fill and Stroke options to colorize both, or select the one ink you want to colorize.
- 4 In the pop-up color palettes, select the colors you want to add to the inks of the selected objects.

- 5 Use the sliders or enter a percentage in the text boxes to set the amount of color to mix with the object's color.
- 6 Turn on Preview to see the effect or click OK to colorize the object.



How colorization works

Canvas uses the percentages you specify to determine the new color values for the selected object. For each color value (for example, Red, Green, and Blue in the RGB color model), Canvas finds the difference between the tint and the original color. Then, Canvas multiplies the differences by the percentage you specify, and adds these values to the original color values.

Colorization calculations

If an object's color has a red value of 40%, to tint 50% with a color that has a red value of 100%, Canvas calculates a new red value of 70%. The same calculations apply to the green and blue values for an RGB color.

Original		Tint color		Result
	R=40%		R=100%	 R=70%

Difference in red values: $100 - 40 = 60$

*Value difference multiplied by tint percentage: $60 * 50\% = 30$*

Original color value plus tint value is new value: $40 + 30 = 70\%$ red

Fractalizing objects

Fractals are mathematical transformations that simulate the irregularities and patterns in natural shapes, such as coastlines and mountain ranges. When you fractalize a vector object, its outline becomes jagged. You can use the Fractalize command to add a fractal effect to any vector object except dimension objects and Smart Lines.

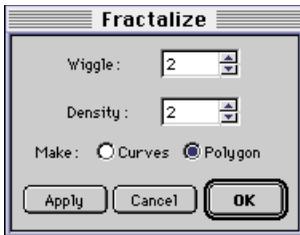


Illustration using vector objects



Same illustration, after fractalizing the mountains

◆ **To fractalize an object:** Select at least one object and choose Transform►Fractalize in the Effects menu to open the Fractalize dialog box. Set the amount of wiggle and density you want to use, and choose Bézier or Polygon fractals. Click Apply to preview the effect on the selected object. Click OK to accept the settings and close the dialog box.



Wiggle The amount a fractalized path can deviate from the original path. Enter a number between 0 and 20; higher numbers increase the amount of wiggle.

Density The smoothness of the fractalized path. Enter a number between 0 and 5. Higher values increase the number of anchor points Canvas add to the path. Lower densities result in sharper angles.

Curves or Polygon Polygon fractals can be jagged and use many anchor points, while curves fractals are smoother and require fewer additional anchor points.

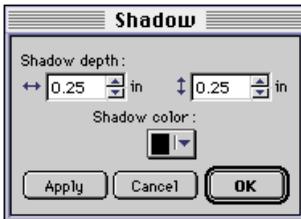
Note: Canvas fractalizes objects by adding several anchor points to an object's path. High wiggle and density settings and polygon fractals can add numerous anchor points, which require more memory to print. Lower settings and curves fractals can help to conserve system resources and eliminate problems you might have while printing.

Creating shadows for objects

The Shadow command copies selected objects, applies a color to the new objects, and offsets them from the original objects by an amount you specify. Canvas places the shadow object directly behind the original in the stacking order. If you apply a shadow to a group of objects, Canvas groups the shadow objects and places the shadow behind the original group.

You can apply shadow effects to any vector or text object except dimension objects and Smart Lines.

◆ **To create an offset shadow:** Select a vector object and choose Shadow in the Effects menu to open the Shadow dialog box. Configure the options, and click Apply to see the effect. To accept the settings and close the dialog box, click OK.



Shadow depth The horizontal and vertical distance by which the shadow object is offset from the original object.

Shadow color The pen and fill color of the shadow object.

Because shadow objects are vector objects, you can edit them the same as other objects. You can skew them to create oblique shadows, or convert them to paint objects and use blur filters to soften them. Remember that the original object and the shadow object are not grouped, so editing or moving one doesn't affect the other.

Examples of shadows

By combining Canvas vector and image-editing capabilities, you can create different styles of shadows.



Standard offset shadow with gray fill ink



Original shadow reduced in height, then skewed



Shadow converted to paint object using Image > Area > Render command. Gaussian blur filter with radius 6.3 applied to shadow

IV



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TEXT EDITING AND LAYOUT

Canvas has a full range of word processing features that let you integrate text with your illustrations and images. You can create, format, edit, and layout text in Canvas. You can also import files in a number of different formats and methods, including file conversion, cut and paste, and Object Linking and Embedding (OLE). To help you edit and proof text, Canvas also provides tools such as spell checking and search and replace. This chapter describes how to

- work with text objects
- move through text
- select, cut, copy, and paste text
- add headers and footers
- insert page numbers and the current date and time
- import text
- proof text

Typing new text in a document



Text, Path Text, and Text Object tools

In Canvas, you add text to documents by first creating text objects. Canvas lets you create text objects in several ways with different properties and uses. You can

- define text columns using the Text or Text Object tools
- insert header and footer text objects
- create linked flows between text objects using the Flow Text pointer
- type text along a path with the Path Text tool
- wrap text inside a vector object.

This section describes the different ways to create text objects.

Creating text layouts

The Text Object tool lets you add empty text blocks to page layouts. Columns created with the Text Object tool keep their width and length (unlike Text tool columns, which shrink and expand to fit the number of lines of text). This tool is especially useful for designing

templates and master pages, because you can define text areas in a page layout and add type later.

If you type more text than can fit in a column created with the Text Object tool, Canvas hides the excess text and displays the overflow indicator. See “Placing overflow text in another column” on page 234.

Note: You cannot use the Text Object tool to select text or place an existing text object in edit mode. For these functions, use the Text tool.

◆ **To create a text layout:** Select the Text Object tool. With the I-beam, drag to define the width and length of the column. You can begin typing in the new text object immediately, or drag the I-beam in another location to create more text columns.

◆ **To create a text layout in a publication document:** You can use the Text Object tool as described above, and you can also simply click with the I-beam between column guides. Clicking with the I-beam creates a column that runs the full width of the column guides and extends from the position where you click to the bottom margin of the page. If the column guides are outside the printable area, the column remains inside the printable area.

✓ Tip

When the bounding boxes of text objects are visible, you can hide them by choosing Display►Hide Text Boxes in the Layout menu. To show text boxes again, choose Display►Show Text Boxes in the Layout menu.

Using the Text tool

When you create text objects with the Text tool, you can choose whether or not to set the column width before typing.

- If you set the column width before typing, text will wrap to the next line when it reaches the right boundary of the text object.
- If you don't set the column width before typing, the right margin expands indefinitely (except in publication documents) to accommodate the amount of text you type.

In either case, you can change the size of the text object by selecting the Selection tool and dragging a selection handle.

Whether you should set the column width before or after typing depends on the amount of text you want to type. For short captions or callouts, you might find it easier to simply type and let Canvas adjust the right margin. However, for paragraphs or newsletter columns, it's probably easier to set the column width first.

To set column width before typing

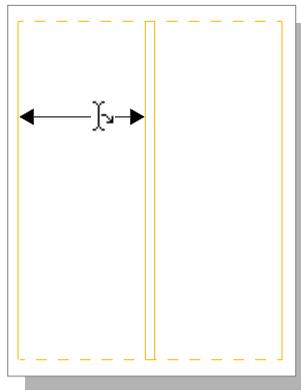
- 1 Select the Text tool in the toolbox. The pointer becomes an I-beam.
- 2 Drag the I-beam to specify the width of the column you want to create, and begin typing. Text wraps to the next line when it reaches the right margin. You don't need to set the length of the column, because Canvas contracts and expands the bottom margin of the text object to fit the text you type.
- 3 To exit text editing mode, press Enter (Mac) or Esc (Windows) or select another tool.

To type without setting column width

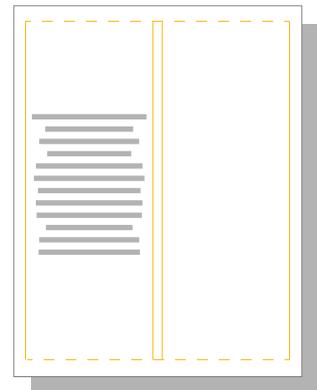
- 1 Select the Text tool in the toolbox. The pointer becomes an I-beam.
- 2 Click the I-beam in the document and begin typing. Canvas expands the right margin to fit the widest line of text you type.
- 3 To exit text editing mode, press Enter (Mac) or Esc (Windows) or select another tool.

In publication documents, you can click the I-beam in a column and Canvas will align text to the column guides (within the printable area) at the vertical position that you click. For example, if the current alignment setting is center-justification, Canvas centers the insertion point between the column guides when you click the I-beam. As you type, Canvas wraps text to the next line when it reaches the right column guide. Canvas also sets the length of the column to the bottom margin of the page.

To help you align the tops of columns, Canvas snaps the column to the top margin if you click within 10 pixels of it.



Click I-beam anywhere between column guides



Canvas aligns and wraps text between column guides

Typing on a path

Using the Path text tool, you can type text on the path of a vector object; the text baseline follows the contours of the object. You can align existing text using the Bind command in the Effects menu. For more information, see “Binding text to vector objects” on page 289.

- ◆ **To type text on a path:** Select the Path Text tool in the Text tool palette. Click the path of a vector object and begin typing. Text you type follows the path of the object.

Typing inside an object

You can type text inside the boundaries of almost any object. This creates text with margins that fit within the sides of the object. Text typed inside an object is the same as wrapping text inside an object. See “Wrapping text inside an object” on page 285.

- ◆ **To type text in an object:** Select the object and begin typing. Text you type stays inside the left and right boundaries of the object. If you type more text than can fit in the object, the text object expands to accommodate it. You can resize the object to fit the text, or shorten the text object and flow extra text to another text object; see “Flowing text between columns” on page 235.

Adding headers and footers

In Canvas publication documents, you can add header and footer text objects using Insert submenu commands in the Text menu. Headers and footers are special text objects that can contain codes for the current date, time, and page number, in addition to text you type. Canvas updates the date, time, and page number codes each time the screen is redrawn.

Canvas inserts headers at the top of the printable area (the top of the onscreen page layout) and footers at the bottom of the printable area. Both types of objects initially span the width of the page, but you can resize and move them just like other text objects.

- ◆ **To create header and footer text objects:** You can’t add headers and footers while in text edit mode; press Enter (Mac) or Esc (Windows) to exit text edit mode, if necessary. Choose Insert>Header or Insert>Footer in the Text menu. Canvas creates the object, and places it in text edit mode so you can begin typing.

Inserting dates, times, and page numbers

In publication documents, you can insert date, time and page number codes in header and footer text objects that Canvas will update each time it redraws the screen. You can also insert the current date and time in standard text objects, however, Canvas does not update this text; they are “stamped” into the document and become regular text.

You can format the codes or stamps (for example, change fonts, sizes, or justification) the same way you apply formatting to normal text; simply select the codes or text and choose the formatting you want to use.

Canvas uses the date and time information as set by your operating system. Refer to your system documentation for information on setting the current date and time.

◆ **To insert the date, time, or page number in a publication document:** With a text object in edit mode, choose an option in the Insert submenu in the Text menu; see the table below for descriptions of the commands.

Date, time, and page number commands

To insert	In this type of object	Do this
Updating date code	Header or footer	Choose Insert►Date, or type \$d
Date stamp	Any text object	Choose Insert►Date Stamp
Updating time code	Header or footer	Choose Insert►Time, or type \$e
Time stamp	Any text object	Choose Insert►Time Stamp
Current page number	Header or footer (page count is static in normal text objects)	Choose Insert►Page #, or type \$p
Total page count	Header or footer (page count is static in normal text objects)	Choose Insert►Total Page #, or type \$t

Typing special characters

You can insert special characters using keystrokes specified in Key-caps (Mac) or Character Map (Windows). The following table provides keystrokes for some common characters. For more information, refer to your operating system manual.

Keystrokes for common characters

Character	Mac Keystroke	Windows keystroke
– (em dash)	Option + -	Alt + 0151
™	Option + 2	Alt + 0153
£	Option + 3	Alt + 0163
§	Option + 6	Alt + 0167
¶	Option + 7	Alt + 0182
•	Option + 8	Alt + 0149
®	Option + r	Alt + 0174
©	Option + g	Alt + 0169

Arranging text objects

You can arrange text objects on the page the same way you arrange other types of objects. You can drag text objects with the mouse, resize them by dragging a selection handle, “nudge” text objects with keyboard arrow keys, and set coordinates and dimensions in the Object Specs palette in the Object menu. See “Object data and styles” on page 114.

You can also cut and copy text objects, send overflow text to new columns, and link existing columns.

Copying and removing text objects

You can use the Copy, Cut, Clear, Paste, Duplicate, and Replicate commands in the Edit menu to copy and delete text objects. These commands perform the same functions on text objects as they do for vector objects. In addition, pasting, duplicating, or replicating a text object within Canvas preserves all character and paragraph attributes. For more information on these commands, see “Copying, cutting, pasting, and deleting objects” on page 100.

Placing overflow text in another column

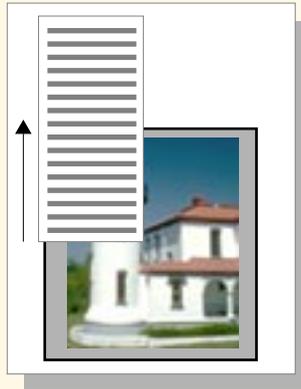
Canvas lets you flow text between text objects. You can flow text by reducing the area of an existing text object. Canvas truncates the text to fit the smaller bounding box, and lets you flow the excess text to another text object.

Flowing text between columns

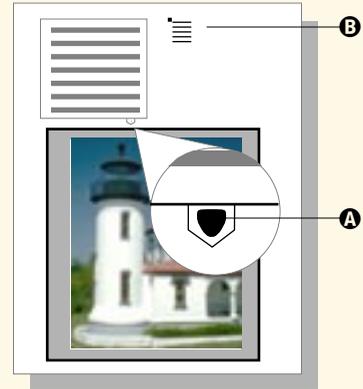
To flow text, first add a column of text to a document. The text should all be in one column to start.

- 1 Reduce the area of the text column by dragging a selection handle. Canvas hides the text that does not fit in the new column size and displays an overflow indicator.
- 2 Click the overflow indicator to change the pointer to a text flow pointer.
- 3 To flow text into a column with the same margins as the original column, click the text flow pointer where you want the upper-left corner of the new column to appear.
- 4 To flow text into a column with different margins than the original column, you can drag the text flow pointer to specify the column width.

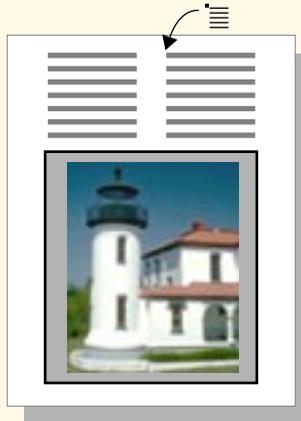
You can flow text between as many columns as you want.



Resize a text column



Click the overflow indicator (A) to get the text flow pointer (B).



Click the text flow pointer to place overflow text in a column with the same margins as the original column. The overflow indicator changes to a plus sign to indicate that text has been flowed.

Linking text objects in a layout



After you create text columns using the Text or Text Object tools, you can use the Text Link tool to create a text flow.

When text you type reaches the bottom of a column, text flows to the linked text object. The linked text object can be on the same page or another page in the document. You can chain together several columns to create a multi-page layout, such as a newsletter. This tool is especially useful in creating Canvas document templates.

✓ **Tip**

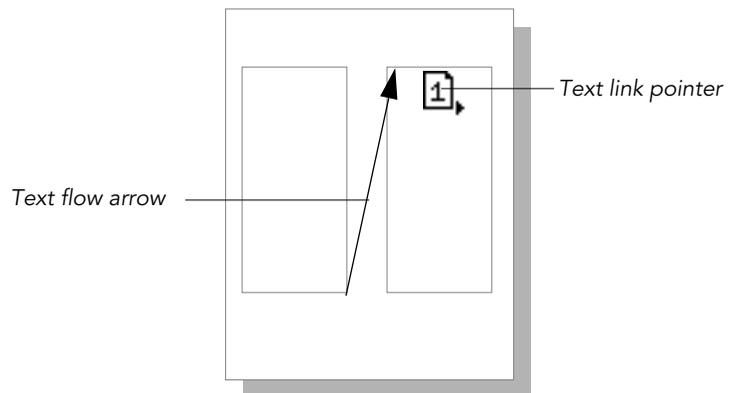
If text boxes aren't visible, choose Display ► Show Text Boxes in the Layout menu; this makes it easier to find and link empty text objects.

Note: If you link text objects created with the Text tool, the text object no longer shrinks or expands to fit the text in the object. It remains a fixed length, like objects created with the Text Object tool.

To link text objects

- 1 With the Text or Text Object tool, create at least two text objects. The columns can be on different pages or slides.
 - 2 Select the Text Link tool in the toolbox. It is in a pop-out toolbar with the other text tools. The pointer becomes the text link pointer with the number “1” in it; this is text linking mode.
 - 3 Click the first text object — the object you want to flow *from*. The text link pointer changes to the number “2”.
 - 4 Click the next text object — the object you want to flow *to*. (If you click anything but a text object, Canvas cancels the linking operation.) Canvas flashes an arrow to show the flow direction.
 - 5 To add another text object to the chain, click the last text object in the chain, then click the text object you want to add.
 - 6 When you're done, double-click an empty area of the layout, or press Enter (Mac) or Esc (Windows) to end text linking mode.
- ◆ **To temporarily display text flow arrows:** Select the Text Link tool and press a text object; if the text object is linked, arrows appear to show the flow direction. The arrows disappear when you release the mouse button.

With the text link pointer, press a text object. If the text object is linked, a text flow arrow appears.



Editing text

In Canvas, you can insert, search, replace, move, delete, copy, and spell check text. To edit text, you need to be familiar with the different ways you can navigate through and select text. Some editing functions require that you first put a text object in edit mode or select some text.

Text edit mode

When a text object is in text edit mode, you can revise, delete, insert, and select specific text. Only one object is in text edit mode at a time. You can put a text object in edit mode with a Text or a Selection tool.

- ◆ **To put a text object in edit mode with a Text tool:** Select the Text tool in the toolbox, and click a text object with the I-beam. An insertion point appears where you click.
- ◆ **To edit text that is bound to a path:** Use the Path Text tool (in a pop-out toolbar with the Text tool) and click the text or vector object with the crosshair pointer. An insertion point appears in the bound text.
- ◆ **To use a Selection tool to put a text object in edit mode:** Select a Selection tool in the toolbox, and double-click a text object. The pointer becomes an I-beam and an insertion point appears.

Text selection and navigation methods

You can move the insertion point and select a continuous block of characters, words, lines, or paragraphs using the mouse or the keyboard. The mouse lets you quickly select text or text objects and move the insertion point. However, if you work with a lot of text, you might find that the keyboard techniques allow you to edit faster and move the insertion point with more precision than a mouse.

Using the keyboard

In text edit mode, you can use the following key combinations to move the insertion point and select text.

✓ Tip

To help you edit and select text, you can display text symbols for spaces, paragraph breaks, and indents. Choose Display►Show Text Invisibles in the Layout menu to display these symbols. To hide them, choose Display►Hide Text Invisibles.

Text editing keys

Modifier Key	Cursor key	Result
None	Up, Down, Right, Left arrow	Moves insertion point one space in the specified direction
	Page Up, Page Down	Moves insertion point up three lines on the left margin (Page Up) or down three lines on the right margin (Page Down)
Option (Mac), Ctrl (Windows)	Right, Left arrow	Moves insertion point to end (Right) or beginning (Left) of word
	Up, Down arrow	Moves insertion point to beginning (Up) or end (Down) of line; if the insertion point is already at the beginning or end of a line, it moves up one line
Shift	Right, Left arrow	Extends selection one space in the specified direction
Shift	Up arrow, Page Up	Extends the selection above the insertion point one line (Up) or three lines (Page Up)
Shift	Down arrow, Page Down	Extends the selection below the insertion point one line (Down) or three lines (Page Down)
Shift + Option (Mac) Shift + Ctrl (Windows)	Up, Down, Right, Left arrow, Page Up, Page Down	Moves the same way as an Option-modified arrow key, but also selects all text between the original insertion point and the new position

Using the mouse

Using the mouse and modifier keys, you can quickly place the insertion point, select specific words, and highlight large blocks of text.

- ◆ **To place the insertion point in a text object:** Select the Text tool in the toolbox to change the pointer to an I-beam. Click the I-beam in a text object where you want to place the insertion point.
- ◆ **To select text:** Place a text object in edit mode (see “Text edit mode,” page 237). Use the following methods to select text.

To	Do this
Select a continuous block of text	Drag the I-beam over text.

To	Do this
Select all text between the insertion point and another location	Press the Shift key and click where you want the selection to end. Windows users can also use the right mouse button like the Shift key; hold down the right button and left-click.
Deselect text between the insertion point and another location within the selection	Press the Shift key and click within the highlighted text.
Select a word	Double-click the word with the I-beam pointer.
Select a line of text	Triple-click the line with the I-beam pointer.
Select all text in the text object	Choose Select All in the Edit menu.

◆ **To deselect all highlighted text:** Click anywhere in the text object or layout. (Clicking outside the selected text object creates another text object at that location.)

◆ **To exit edit mode:** Press the Enter key (Mac) or the Esc key (Windows), or select another tool in the toolbox.

Copying, deleting, and moving selected text

You can cut, copy, and paste selected text within the same document, in another Canvas document, or to and from a non-Canvas document using the Clipboard. Depending on the operating system and the source of the text in the Clipboard, pasted text will retain or discard formatting information. For example, on Mac OS, text in the Clipboard that originated in another application will be formatted with the current Canvas presets when pasted in a Canvas document, regardless of formatting applied in another application. However, in Windows, text pasted from another application can be embedded in a Canvas document, using Object Linking and Embedding (OLE). See “Embedded text objects and editions containing text” on page 245.

If you copy and paste selected text (and not an entire text object) within Canvas, the text retains its character attributes, but not its paragraph-level formatting.

◆ **To remove text:** Select the text you want to remove.

- To move the selection to the Clipboard, choose Cut in the Edit menu.

- To delete text from a document without saving it to the Clipboard, choose Clear in the Edit menu or press Delete.
- ◆ **To type over selected text:** You can replace existing text by selecting it and typing or pasting text. This saves the extra step of deleting text before replacing it.
- ◆ **To replace all text in a text object:** Select a text object and begin typing. The text you type will have the same formatting attributes of the text you replaced.

To copy selected text

When you copy and paste selected text, you can create a new text object or insert the text in an existing text object.

- 1 While in text edit mode, drag the I-beam pointer to highlight the text you want to copy.
- 2 Choose Copy in the Edit menu. Canvas copies the selection to the Clipboard.
- 3 Depending how you want to paste the selection, do one of the following:
 - To paste text into an existing text object, place the insertion point where you want to insert the text.
 - To paste text in a new text object, first be sure no objects are in text edit mode by pressing Enter (Mac) or Esc (Windows). You can set the width of the column before pasting text by selecting the Text tool and dragging horizontally. Otherwise, text will be pasted in one long line, and long selections might extend off the screen.
- 4 Choose Paste in the Edit menu. Canvas inserts the contents of the Clipboard in the current document.

Proofreading text

Canvas has Find/Change and Spell Checking tools to help you find particular words or characters, make global text changes, and correct spelling.

Finding and changing text

You can search and replace character strings that you specify using the Find dialog box. In addition, Canvas lets you minimize “false matches” by specifying exact capitalization and word matches.

To find and change text

Choose Find in the Edit menu to open the Find palette. If necessary, click the Text tab to bring it to the front.

Find What. Type the text you want to find.

Change To. To replace text that Canvas finds with different text, type the new text here. To delete occurrences of the text, leave this box blank.

Match: Whole word. Turn on to specify that the text string in “Find What” is an entire word. For example, if you type *time* in the text box and turn on “Match: Whole Word,” Canvas will not find words like *times*, *untimely*, and *timer*.

Match: Case. Turn on to tell

Canvas to find only text that has the same capitalization as the text you typed in “Find What.” For example, if you type *Time* in the text box and turn on “Match: Case,” Canvas will not find *TIME* or *time*.

Search all visible layers. (Illustration and presentation documents only) Turn on to make Canvas look for the specified text string on visible layers.

Search all pages/slides. (Publication and presentation documents only) Turn on to make Canvas search the entire document instead of just the visible page or slide.

Find next. Searches for the next occurrence of the text you specified.



Replace. To change an occurrence of the text you typed in “Find What” to the text in “Change To,” click this button.

Replace All. Click to change all occurrences of the text you typed in “Find What” to the text in “Change To.” Canvas changes all occurrences without stopping at each instance.

Spell checking text

You can spell check specific words, selections, and entire documents using the Canvas spell checker. The spell checking feature can also watch for misspellings as you type, alerting you immediately to words not in its dictionary. In addition to the 100,000-word English dictionary, you can add your own words to a user dictionary.

To check the spelling of a word

You can use the Suggest Spelling option to verify the spelling of a specific word.

1 Highlight the word you want to check and choose Spell Checker ► Suggest Spelling in the Text menu. The Suggest Spelling menu appears with a list of suggested words and options. If the highlighted word appears in the list of suggestions, the word is spelled correctly, and you can click Cancel to close the Suggest Spelling menu.

2 If the highlighted word is not in the list of suggested spellings, and the correct spelling appears in the list, you can click the correct word to replace the misspelled word in the document.

3 If the highlighted word is not in the list of suggested spellings, but you want to use the word anyway, you can choose Add Word to update the user dictionary (to allow the word in all documents) or Ignore Word (to allow the word in the current document).

To check spelling interactively

The interactive spell checking feature alerts you as soon as you type a word that is not in the Canvas or User dictionaries. (Canvas recognizes a string of characters as a word when you press the Space bar.) You can select a sound in your operating system's Sound Control Panel. Please consult your system software manual for instructions on selecting sounds.

◆ **To turn interactive spell checking on or off:** Open the Spell Checker submenu in the Text menu. If a check mark appears next to Interactive, choosing Interactive will turn this feature off. Otherwise, choosing Interactive will turn this feature on.

Spell checking a selection or document

You can check the spelling of highlighted blocks of text, a selected text object, or an entire document.

1 To limit the spell checking to specific text or text objects, select the text or text objects. To spell check an entire document, you don't have to select anything.

2 To begin spell checking, choose Spell Checker ► Spell Check Selection or Spell Check Document in the Text menu. If Canvas finds an unrecognized word, the Spelling Checker dialog box appears (see below).

Spelling Checker

The Spelling Checker dialog box only appears when Canvas finds a word in a document that is not in the dictionaries.

- A** Canvas displays unrecognized words here. You cannot edit the text in this box.
- B** You can type a new spelling in this text box, or click the down-arrow to choose from the list of suggested spellings.

Replace. Click this button to replace the unrecognized word with the contents of the text

box and continue to spell check the document.

Add. If Canvas doesn't recognize a word that is actually spelled correctly, you can add the word to the user dictionary so that Canvas will recognize it in all future documents. After saving the word, Canvas continues to spell check.

Ignore. Allows an unrecognized word in the current document without adding the word to the dictionary. Canvas ignores all instances of the



word until you close Canvas.

Skip. Allows the current instance of an unrecognized word, but Canvas alerts you the next time this word occurs.

Cancel. Interrupts the spell check and closes the dialog box.

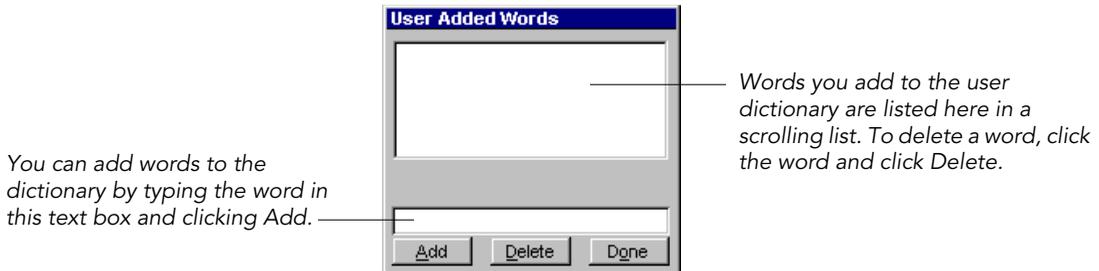
Continuing a spelling check

If you cancel a spell check, you can choose Continue Spell Check in the Spell Checker submenu to pick up where you left off. Canvas remembers the words you chose to ignore.

Modifying the user dictionary

In addition to over 100,000 words in the Canvas dictionary, you can store an unlimited number of words in a personal user dictionary. By adding words to a user dictionary, you can “teach” Canvas new words and special terms, and prevent Canvas from stopping unnecessarily while checking spelling.

- ◆ **To add or delete words in the user dictionary:** Choose Spell Checker ► Show Added Words in the Text menu. In the dialog box, type new words to add or choose words to delete.



Importing text from other applications

You can import text created in other applications into Canvas. This capability is especially useful if you are compiling documents from different applications into a Canvas layout. For example, you might need to assemble a publication with contributions from several writers who each use different word processors.

Canvas has several methods of importing text: opening, placing, pasting from the Clipboard, and object embedding (Windows only). Opening a text file creates a new Canvas publication document for the imported file. Placing, pasting, and embedding text inserts the text in the current document window. For information on pasting text from the Clipboard, see “Copying, deleting, and moving selected text” on page 239.

The formatting of imported text might differ from the formatting of the original text in its native application. Although some software products might have similar capabilities, the methods used can vary significantly. It might be necessary to reformat text using the typographic tools in Canvas.

Note: In addition to the file filters described in “File and data exchange” on page 57, Canvas uses Claris XTND file translators (Mac only) to open and place files. The file types you can import into Canvas depend on your system configuration and software.

✓ Tip

If you have difficulty opening or placing a text document because of the formatting, try converting the file to plain text before importing the file.

Also, try copying and pasting the text you want to import. This removes formatting that Canvas doesn't understand.

To import a text file into a new Canvas document

- 1 Choose Open in the File menu.
- 2 In the Format (Mac) or “Files of Type” (Windows) pop-up menu, choose a text file format.
- 3 In the list of files, select a file to import and click Open or double-click the file name. Canvas opens a new publication document with approximately the same margins as the original text file.

To place a text file in an existing Canvas document

- 1 Choose Place in the File menu. In the Format (Mac) or “Files of Type” (Windows) pop-up menu, choose a text file format .
- 2 In the list of files, select a file to import and click Place, or double-click a file name. The pointer changes to the Place icon.
- 3 To place text using the same margins as the original file, click the Place icon in the document. If the file you are importing contains text only (no images or objects), you can also drag the Place pointer to simultaneously import and set margins for the text. However, if the file you want to import has images or objects, dragging the place icon scales the text, images, and objects as a group.

Embedded text objects and editions containing text

In Windows, you can use Object Linking and Embedding (OLE) to insert text in a Canvas document. You can also use Publish and Subscribe in the Mac OS to subscribe to an edition that contains text.

However, Canvas treats embedded text objects and editions as objects, not text. You cannot apply effects, such as wraps or binds, to text in these objects. In addition, Canvas cannot spell check, hyphenate, or format this text. All formatting and effects must be performed in the original application or publisher.

For more details and procedures, see “Using Object Linking and Embedding” on page 78 and “Sharing information through Publish and Subscribe” on page 81.

Exporting text to other applications

In addition to copying text from Canvas into other applications, you can use the Canvas file filters to save selections and documents in other file formats; see “File and data exchange” on page 57. For raster-only file formats, Canvas rasterizes text before saving, and you lose the ability to edit the text after conversion. However, a few application-specific filters that recognize text, such as the Canvas 3.5 filter, let you convert text.

Tip

Always save a copy in Canvas format of files you want to export, in case the file conversion does not come out exactly right.

Canvas also supports Claris XTND file filters (Mac only). However, several Canvas typographic capabilities aren’t available in other applications. For example, character inks and strokes, text typed on a path, and wrapped text are unlikely to convert reliably. In some cases, such as rotated text, the export filters might rasterize the characters, and you will not be able to edit them as text.

To export text to other file formats

- 1 Choose Save As in the File menu.
- 2 In the File Format pop-up menu, choose a format to export to.
- 3 Type a name for the file, and click Save. Canvas warns you that saving files in other formats might result in a loss of some information. Click Save to export the file.

FORMATTING TEXT

You can control all aspects of text formatting in Canvas. This chapter explains how to specify font, font styles, type size, character position and scaling, kerning, letter and word spacing, paragraph alignment and spacing, and hyphenation. This chapter also explains how to select text for formatting and how to apply format settings.

You can also save format settings as named character and paragraph styles so you can use them again. The procedure for using these type styles is covered in the following chapter.

Selecting text and objects

The following section is a review of some basic selection techniques used to format text.

To select and deselect text objects

You can select text objects the same way you select other objects in Canvas.

- To select a single object, use a Selection tool to click the text object or drag a selection rectangle around the object.
- To select multiple objects, hold down the shift key and click text objects with a Selection tool. You can also drag a selection rectangle around all the objects you want to select.
- To deselect an object, press the Shift key and click the object. Other objects remain selected.
- To deselect all objects, press the Enter key (Mac) or Esc key (Windows) twice, or click an area of the screen where there are no objects.

To select all text objects

To select all text objects with a single command, select the Text tool in the toolbox and then choose Select All in the Edit menu.

- In an illustration document, this procedure selects all text objects on the current layer.
- In a publication document, this procedure selects all text objects on the current page or current two-page spread.
- In a presentation document, this procedure selects all text objects on the current layer of the current slide.

To select text within a text object

Before you can select specific characters, words, lines, or paragraphs, the text object must be in edit mode.

1 To place an object in edit mode, use one of these methods:

- With a Selection tool, double-click the text object. The pointer becomes an I-beam and an insertion point appears in the text.
- Click the Text tool in the toolbox. The pointer becomes an I-beam. Click the I-beam within the text. An insertion point appears.
- For bound text only, click the Path Text tool. The Path Text tool is in a pop-out toolbar with the Text tool.

2 Use one of the following methods to highlight the text you want to select.

To	Do this
Select a continuous block of text	Drag the I-beam over text.
Select all text between the insertion point and another location	Press the Shift key and click where you want the selection to end.
Deselect text between the insertion point and another location within the selection	Press the Shift key and click within the highlighted text.
Select a word	Double-click the word with the I-beam pointer.
Select a line of text	Triple-click the line with the I-beam pointer.

To	Do this
Select all text in the text object	Choose Select All in the Edit menu.
Deselect all highlighted text	Click anywhere in the text object or layout. Clicking outside the selected text object creates another text object at that location. Choosing another tool in the toolbox deactivates the text edit mode.

3 To exit edit mode, press the Enter key (Mac) or the Esc key (Windows).

Applying text formats

Canvas provides three ways to format text: the Text menu, the Text Ruler, and the floating Type palette. The Text menu and Text Ruler provide basic formatting options, while the Type palette provides advanced controls and features. You might find that the Type palette and Text Ruler are easier to use because you can keep them open as you edit a document. However, using menu commands can help to familiarize you with the hot-key command shortcuts and make text formatting quicker.

When you use menu commands or the Text Ruler to apply formatting, the settings you choose affect the document immediately. However, when you use the Type palette, the settings take effect when you click Apply. You do not have to click Apply before switching to another tab within the Type palette; Canvas remembers all changes and applies them simultaneously with one click. However, you must apply or save the new settings *before clicking the pointer anywhere outside the Type palette*. If you don't, the settings will be lost.

Depending on the text selection you make, the format settings you choose can be applied to existing text, stored as the preset for new text objects, or applied to text you are about to type.

To format existing text

You can change the formatting of existing text by selecting a text object or a portion of text within the object.

◆ **To apply character formatting to existing text:** Select the characters you want to change. Using Text menu commands, the Type palette, or the Text Ruler, choose the formatting you want to apply.

◆ **To apply paragraph formatting to existing text:** Select text in the paragraph you want to change, or place the insertion point anywhere in the paragraph. Using Text menu commands, the Type palette, or the Text Ruler, choose the formatting you want to apply.

Text menu commands and Text Ruler options affect the selection as soon as you choose them; Type palette changes take effect when you click Apply.

To establish formatting for new text objects

When you create a new text object, Canvas applies a preset format to text you type. You can define the preset format for new text objects. To establish or modify the preset, follow these steps:

- 1** Be sure you have not selected any text or text objects, and no text objects are in edit mode. To deselect all objects, press Enter (Mac) or Esc (Windows) twice.
- 2** To change format settings, use Text menu commands, the Type palette, or the Text Ruler. If you use the Type palette, be sure to click the Apply button after making changes.

Canvas uses the specified settings to format new text objects that you create. Existing text objects retain their formatting. Also, when you paste text from the Clipboard, it retains its formatting.

To change formatting before typing new text

You can set the format for text you are about to type — without changing the preset format for new text objects.

- 1** Place the text object in edit mode (see “To select text within a text object,” page 248). The pointer should appear as an I-beam and an insertion point (a flashing vertical line) should appear in the text.
- 2** Place the insertion point by clicking the I-beam where you want the new formatting to begin.
- 3** Use the Text menu commands, the Type palette, or the Text Ruler to choose formatting options. If you use the Type palette, be sure to click the Apply button after making changes.
- 4** Begin typing. The text will appear with the formatting you chose.

Choosing a formatting method

You can use Text menu commands, the Text Ruler, or the Type palette to format text. Depending on the circumstances, you might find that one is easier to use than the other, or one provides additional control. This section describes the general capabilities of the three formatting methods, and provides some guidelines to help you decide when to use each method.

Text menu commands

The Text menu commands let you control basic text properties, including font, font style, type size, justification, leading, and kerning. The submenus for these properties contain standard settings. The Kerning, Leading, and Size submenus also let you make incremental adjustments to current settings.

The Text Ruler

The Text Ruler lets you set basic paragraph-level formatting, including justification, indents, tab stops, and leading. You can edit and place tabs and indents by dragging markers with the mouse, allowing you to visually adjust settings.

The Type palette

The Type palette lets you manage all typographic settings, including those provided by the Text menu. In the Type palette, you can enter numeric values to set custom point sizes, kerning, leading, and superscript and subscript elevations. In addition, the Type palette provides options for indents, drop caps, letter and word spacing, and hyphenation.

You can also use the Type palette to save settings as type styles, as explained in the following chapter, “Using type styles.”

When to use Text menu commands

Menu commands can be quicker and more practical for some formatting than the other methods.

- New Canvas users might want to use menu commands whenever possible to become familiar with the hot-key shortcuts. Canvas has shortcuts for many basic formatting options. Learning these shortcuts can make text formatting quicker.
- For relatively infrequent formatting, the Type palette might not be practical or convenient. Depending on the speed of your system, opening the Type palette, choosing formatting, and applying the settings might take longer than simply choosing the same menu command.
- In some circumstances, the Type palette might provide more control than necessary. For example, to apply standard subscript using the Text menu, you can simply choose Subscript in the Style submenu and let Canvas lower the baseline by the standard amount. With the Type palette, however, you must specify the exact number of points to lower the baseline.

When to use the Text Ruler

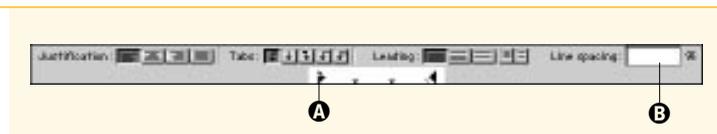
The Text Ruler lets you set basic paragraph formatting, and provides some options not available with the other methods.

Text Ruler options

To display the Text Ruler, choose Show Text Ruler in the Layout►Display submenu. To hide the ruler, choose Hide Text Ruler.

Justification. You can click a button to choose paragraph alignment.

Tabs. You can set tabs only in the Text Ruler. Canvas has left, center, right, decimal, and



comma tabs. You can also specify a leader character to fill the tab space.

A Indents. You can interactively adjust right, left, or first line indents by dragging an indent marker. This method might be more intuitive than specifying indents in measurement

units as you do in the Type palette.

B Format information. The Text Ruler shows the current indent, tab, and leading settings. As you click on different options in the ruler, the text box shows the current setting for the option.

When to use the Type palette

Follow these guidelines to determine if the Type palette is the appropriate formatting method.

- In general, to perform advanced text formatting, you should use the Type palette. Many Type palette options and controls aren't available in the Text menu or Text Ruler.
- To create, edit, delete, and apply type styles, you must use the Type palette. You can use the Text menu and Text Ruler in the process of designing the type style, but only the Type palette lets you save and apply the styles.
- If you are making frequent formatting changes, you might want to use the Type palette. You can change several attributes and apply them all at once, saving you the trouble of pulling down the Text menu repeatedly.
- You can monitor format settings of a selection if you keep the Type palette open. If you select text with multiple formats applied, Canvas alerts you by “blanking” the option in the Type palette. For example, if you select a block of text that has some plain and some bold typeface characters, the Character tab Style button for Bold appears “blanked,” or white, inside.



Blanked Bold button

How to use the Type palette

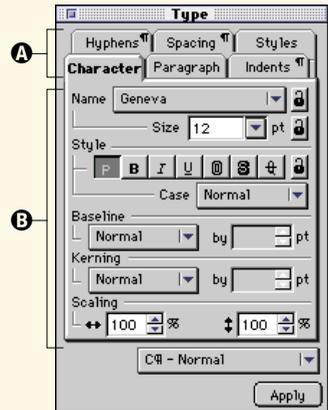
When you adjust settings in the Type palette, the new settings don't take effect until you click Apply. Be sure that you don't click outside the palette before applying the settings, or they will be lost.

To open the Type palette, choose Type in the Text menu. The Type palette contains six tabs: Character, Hyphens, Indents, Paragraph, Spacing,

and Styles.

A Click a tab to bring it to the front. The paragraph symbol (¶) on some tabs indicates that these are paragraph-level options.

B Configure the settings you want and click Apply to implement them.



Applying character formatting

Canvas gives you precise control over the appearance of each character. You can set the font, type size, font style, kerning, capitalization style, scale, and baseline position using menu commands or the Character tab in the Type palette.

Character attributes are applied by selecting the specific characters that you want to modify. You can select any portion of text — from one character to entire text objects. For selection techniques, see “Selecting text and objects” on page 247.

Setting attributes in the Character tab

The Character tab lets you control all character attributes.

Some attributes, such as type face, type size, font style, baseline, and kerning, are also available in the Text menu.

Name. Choose a typeface in the pop-up menu.

Size. Choose a type size in the pop-up menu, or type a number in the text box.

Style. Click a button to select a font style.

Case. Choose a capitalization style in the pop-up menu.

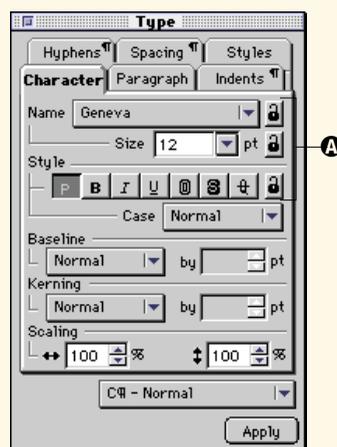
Baseline. Specify subscript or

superscript settings to one hundredth of a point precision.

Kerning. Tighten and loosen kerning by hundredths of a point.

Scaling. Specify percentages by which you want to scale the current type size. You can set individual horizontal and vertical scaling percentages.

Locks. To prevent accidental or unwanted changes to the type face, type size, or font style of specific text, you can set these locks. If you want to change locked text, you must first unlock the text.



Specifying fonts

You can use the Font submenu in the Text menu or the Character tab in the Type palette to choose any of the fonts installed on your system. For more information, see the sidebar on font usage below.

To choose a font using menu commands

- 1 Depending on how you want the font to apply, do one of the following:
 - To change existing text, select the text or text objects.
 - To set the font before typing, place the insertion point where you want the font to change.
 - To apply the font to the preset format, deselect all objects.
- 2 Choose Font in the Text menu to open the Font submenu. A check appears next to the current font.
- 3 Choose a font in the submenu. The font setting changes.

Tips for font installation and use

On Mac OS systems, Canvas uses fonts installed in the Fonts folder of the System Folder. Fonts should be installed by dragging the font files to the closed System Folder icon. The system puts the fonts in the correct folder.

On Windows systems, Canvas uses fonts installed in the Fonts folder of the Windows folder. You can also access the Fonts folder by the Fonts shortcut icon in the Control Panel. Use the Install New Font command in the File menu to add fonts to your system. You can also drag and drop font files or font file shortcuts to the Fonts folder. To specify that you want to see only TrueType fonts in your programs, you can use the Options command in the Views menu.

Canvas can only use fonts that are properly installed in the above locations. If fonts that you use in another application are not available in Canvas, that application probably stores its fonts in a different location and has its own font management capabilities.

Guidelines for choosing fonts

There are three types of fonts widely available: bit-mapped (or screen), PostScript, and TrueType. You cannot distinguish the three

types in the Canvas menus. However, you should be aware of the different types of fonts you have, because each font is best suited for particular purposes.

Bit-mapped fonts are used by your computer to display text onscreen. A bit-mapped font is optimized for a particular point size, and appears jagged at other sizes. These fonts are not scalable for printing.

PostScript Type 1 fonts are the standard for imagesetting. PostScript produces high-quality printed text. For onscreen display, however, PostScript needs screen fonts. If the screen font for a particular point size is not installed, the text appears jagged onscreen. To compensate for this, you can use Adobe Type Manager (ATM) software. If a screen font is unavailable, ATM uses the PostScript printer font for both screen display and printing. In addition, ATM lets you print PostScript fonts to non-PostScript printers.

TrueType fonts are suitable for most desktop publishing purposes when you are printing in-house. TrueType fonts produce good quality printed text, and their onscreen appearance closely resembles the printed output, even when the screen font is unavailable.

To choose a font using the Type palette

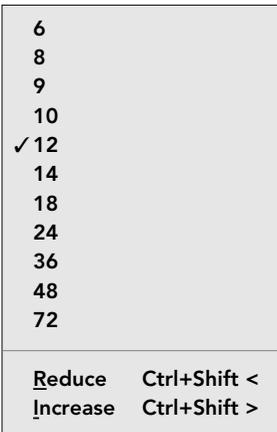
- 1 Depending on how you want to apply the font, do one of the following:
 - To format existing text, select the text or text objects.
 - To set the font before typing, place the insertion point where you want the font to change.
 - To apply the font to the preset format, deselect all objects.
- 2 If necessary, open the Type palette by choosing Type in the Text menu, and click the Character tab to bring it to the front.
- 3 Choose a font in the Name pop-up menu and click Apply.

Specifying type size

You set the type size in either the Size submenu of the Text menu or the Character tab of the Type palette. You can choose from standard type sizes using either method. Using the Size submenu, you can also reduce or increase the size in 1-point increments. Using the Character tab, you can enter any type size with precision to one-hundredth of a point.

To set type size using menu commands

- 1 Depending on how you want the type size to apply, do one of the following:
 - To change existing text, select the text or text objects.
 - To set the type size before typing, place the insertion point where you want the size to change.
 - To set the type size of the preset format, deselect all objects.
- 2 Choose Size in the Text menu to open the Size submenu. A checkmark appears next to the current type size.
- 3 Choose one of the sizes in the submenu, or choose the Reduce or Increase commands to change the type size in 1-point increments. The size setting applies immediately.



Size submenu

To set the type size using the Type palette

- 1 Depending on how you want the type size to apply, do one of the following:
 - To change existing text, select the text or text objects.

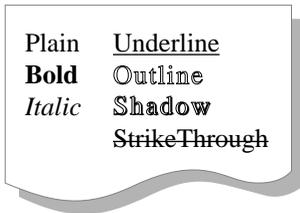
- To set the type size before typing, place the insertion point where you want the size to change.
 - To set the type size of the preset format, deselect all objects.
- 2 If necessary, open the Type palette by choosing Type in the Text menu, and click the Character tab to bring it to the front.
 - 3 Choose one of the sizes in the Size pop-up menu, or enter a number in the box to specify a type size.
 - 4 Click Apply to implement the type size setting.

Applying font styles

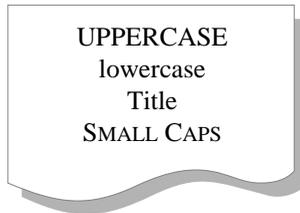
Font styles are different character types, such as bold, italic, or superscript, as well as capitalization modes. You can apply font styles in the Style submenu in the Text menu or the Character tab in the Type palette.

Font styles can be categorized into three groups: appearance, capitalization, and baseline position. To the same text, you can apply multiple appearance styles, but only one each of capitalization and baseline styles.

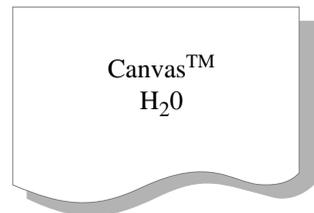
Types of font styles



Appearance styles



Capitalization styles



Baseline shift:
"™" superscripted
"₂" subscripted

Appearance styles

Appearance styles include plain, bold, italic, underline, outline, shadow, small caps, and strikethrough. With the exception of the Plain option, you can use as many of these appearances as you like on the same text. Applying the Plain setting removes other font styles that have been applied so that text reverts to its standard appearance. Depending on the typeface, using certain styles might not have the desired effect, and can even make text appear ugly when printed. For example, applying bold to a heavy weight typeface can make characters look too thick. Similarly, applying italic to an already italicized font might exaggerate the slant of the characters.

Capitalization styles

Capitalization styles format text as uppercase, lowercase, or title (first letter of each word capitalized) styles. You can apply one of these capitalization styles to the same text: Normal, Upper, Lower, and Title.

Baseline position

The baseline of text is the imaginary horizontal line on which characters sit. To position characters above (superscript) or below (subscript) the normal baseline, you can shift the baseline position.

Canvas does not change the type size of superscript and subscript text. Unless you reduce the type size of shifted text, the line size increases by the amount of the baseline shift. As a result, the line spacing might change, depending on the leading setting. If you don't want the line spacing to change, you can reduce the type size of shifted text by the same amount (or more) of the baseline shift, or you can specify leading in points (see "Setting line and paragraph spacing," page 264).

If you use the Style submenu to change baseline position, you can choose either Superscript or Subscript to shift text the baseline by roughly 27 to 33 percent of point size of the line. For example, superscript text in a line of 12-point text appears 4.0 points above the normal baseline.

If you use the Character tab of the Type palette to change the baseline position, you can specify the exact distance (in points) of the text above or below the normal baseline.

To apply font styles using menu commands

- 1 Depending on how you want the font style to apply, do one of the following:
 - To change existing text, select the text or text objects.
 - To set the font style before typing, place the insertion point where you want the style to change.
 - To apply the font style to the preset format, deselect all objects.
- 2 Choose Style in the Text menu to open the Style submenu. Canvas places checkmarks next to the active styles in the submenu.
- 3 Choose the font style you want to apply. Choosing an active style turns off the style. Canvas implements the setting immediately.

To apply font styles using the Type palette

- 1 Depending on how you want the font style to apply, do one of the following:
 - To change existing text, select the text or text objects.
 - To set the font style before typing, place the insertion point where you want the style to change.
 - To apply the font style to the preset format, deselect all objects.
- 2 If necessary, open the Type palette by choosing Type in the Text menu, and click the Character tab to bring it to the front.
- 3 To change appearance styles, click the Style buttons. Clicking the Plain button turns off all active appearance styles. Clicking an active appearance style button turns the style off.
- 4 To change the capitalization style, choose Upper, Lower, Normal, Title or Small Caps in the Case pop-up menu.
- 5 To change the baseline elevation, choose Normal, Superscript, or Subscript in the Baseline pop-up menu. If you are applying superscript or subscript, specify the distance from the baseline (in points) in the text box. Normal baseline always has an elevation of zero points.
- 6 Click Apply to implement the font style settings.

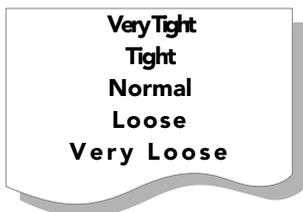
Specifying spacing between characters

The space between characters is defined by font designers. In Canvas, the Kerning option lets you adjust the amount of space to the right of each character, so you can bring characters closer together (tighten) or spread them farther apart (loosen).



Some combinations of letters might have too much or too little space between them when typed. For example, the first line of Roman numerals is unevenly spaced. Using kerning controls, we adjusted the spacing to make the second line appear more even.

Canvas can also adjust letter and word spacing for paragraphs following minimum, maximum, and desired guidelines that you set. See “Adjusting letter and word spacing” on page 273.



These five lines of text demonstrate the kerning options in the Kerning submenu in the Text menu.

The Kerning submenu lets you choose a standard kerning amount: Very Tight, Tight, Normal, Loose, or Very Loose. You can interactively kern characters in half-point increments using the Tighten and Loosen commands. You can also set a fine kerning amount using the Configure Fine Kern command, then use the Tighten Fine and Loosen Fine commands to kern characters by the specified amount.

On the Character tab of the Type palette, you can use the Kerning option to tighten or loosen kerning by an amount you specify.

To change character spacing using menu commands

1 Depending on how you want kerning to apply, do one of the following:

- To change existing text, select the text or text objects.
- To set the kerning before typing, place the insertion point where you want the kerning to change.
- To apply the kerning setting to the preset format, deselect all objects.

2 Choose **Kerning** in the **Text** menu to open the **Kerning** sub-menu and choose one of the following options.

Option	Result
Tight	8% less space than normal between characters
Very Tight	14% less space than normal between characters
Normal	Standard spacing as defined by the font's designers
Loose	8% more space than normal between characters
Very Loose	14% more space than normal between characters
Tighten	Reduce kerning by 0.5 points. You cannot tighten kerning to less than the width of one character
Loosen	Increase kerning by 0.5 points
Tighten Fine	Reduce kerning by amount specified in the Kerning Specifications dialog box
Loosen Fine	Increase kerning by amount specified in the Kerning Specifications dialog box



◆ **To set the fine kerning amount:** Choose **Kerning** ► **Configure Fine Kern** in the **Text** menu. In the **Kerning Specifications** dialog box, specify the amount of kerning (in points) you want the **Tighten Fine** and **Loosen Fine** commands to apply.

To kern characters using the Type palette

1 Depending on how you want kerning to apply, do one of the following:

- To change existing text, select the text or text objects.
- To set the kerning before typing, place the insertion point where you want the kerning to change.
- To apply the kerning setting to the preset format, deselect all objects.

- 2 If necessary, open the Type palette by choosing Type in the Text menu, and click the Character tab to bring it to the front.
- 3 To set the kerning, choose Normal, Tighten, or Loosen in the Kerning pop-up menu and specify the kerning amount (in points) in the text box. Normal always has a setting of zero.
- 4 Click Apply to implement the kerning setting.

Preventing changes to character attributes

Using the Character tab in the Type palette, you can lock the current font, type size, and font style to prevent accidental changes. This feature is especially useful when several people are using the same Canvas document. In addition, you can also use this feature to selectively exempt sections of text from global formatting changes. Once you lock a setting, no one can change it without first unlocking it.

To lock character attributes

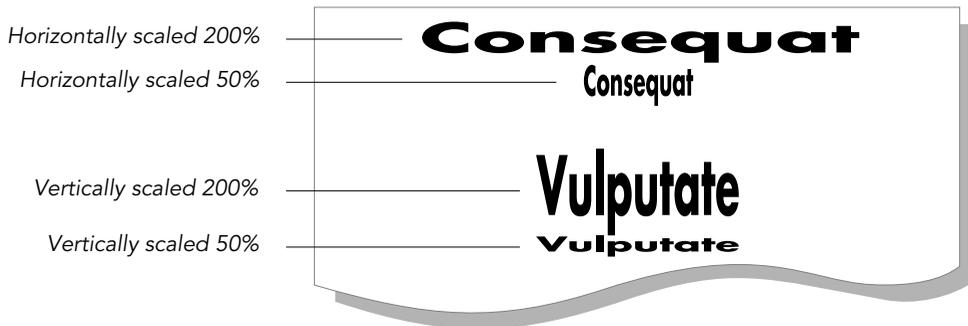
- 1 Depending on how you want locks to apply, do one of the following:
 - To change the lock setting of existing text, select the text or text objects.
 - To change the lock setting before typing, place the insertion point where you want the locking to change.
 - To apply a lock setting to the preset format, deselect all objects.
- 2 If necessary, open the Type palette by choosing Type in the Text menu, and click the Character tab to bring it to the front.
- 3 To lock an attribute, click the Lock button to the right of it. You can also change font attributes in this step. When you click Apply, Canvas first applies the new font attributes, *then* locks the new attributes. Click Apply to implement the lock settings.



The lock button

Horizontal and vertical text scaling

Canvas provides independent control of horizontal and vertical scaling of text. Using this feature, you can stretch characters to create extended and condensed letterforms.



To scale an entire text object, you can also select the text object, press Command (Mac) or Alt (Windows), and drag a selection handle. Depending on the direction of the drag, Canvas scales text horizontally or vertically.

To scale characters using the Type palette

1 Depending on how you want scaling to apply, do one of the following:

- To change existing text, select the text or text objects.
- To set the scale of text before you type it, place the insertion point where you want the scale to change.
- To apply scaling to the preset format, deselect all objects.

2 If necessary, open the Type palette by choosing Type in the Text menu, and click the Character tab to bring it to the front.

3 To specify the vertical and horizontal scale of characters, enter percentages in the Scale boxes. If you enter the same percentage in both boxes, Canvas scales the text proportionately. Canvas will apply these percentages to the point size displayed in the Size box.

Canvas does not limit the percentage you can scale characters, however, extremely high and low settings can distort some fonts and make them unreadable. In addition, scaling requires significant amounts of memory for text display, which might cause performance problems for some systems.

4 Click Apply to implement the scaling settings.

Applying paragraph formatting

In Canvas, you can control paragraph attributes, such as justification and leading. Paragraph attributes affect entire paragraphs, even if you select a single character, or place the insertion point anywhere in the paragraph. If you select text in multiple paragraphs, all the paragraphs will be affected.

Paragraph-level formatting includes the following:

- leading and paragraph spacing
- indents
- tabs
- alignment (justification)
- automatic letter and word spacing
- hyphenation
- widow and orphan controls

Setting line and paragraph spacing

Using the Text menu, Text Ruler, or Type palette, you can adjust the spacing, or leading, between lines of text. You can also insert extra space before and after paragraphs using the Type palette.

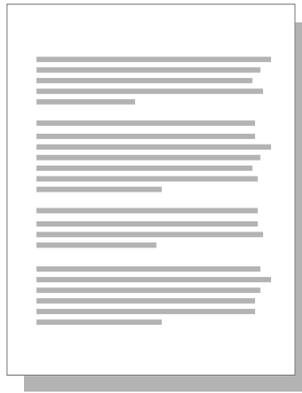
Canvas provides two methods of specifying leading: ratio (or percentage) and point size.

- Ratio and percentage leading are based on the normal leading of the largest type size in the preceding line. The normal leading is usually designed to be slightly larger than the point size of the type. For example, a single line of 12-point text usually occupies about 15 points of vertical space when you specify 100 percent or Single Space leading. Therefore, double spaced, or 200 percent, leading for 12-point text increases the line spacing to about 30 points.
- Leading specified in points is independent of the type size and normal leading of the typeface. The space from baseline to baseline is exactly the number of points specified, regardless of the size of the type. Using point size leading lets you maintain consistent line spacing, and fit text to specific space requirements. For example, you have 10 lines of text, and exactly 120 points of vertical space to place the text. To make the text fit, set the leading to 12 points.

The Leading submenu of the Text menu lets you set Single, 1½, or Double Space leading. You can also choose the Tighten or Loosen commands to fine-tune the current leading in 0.5-point increments. You can tighten and loosen the leading repeatedly, but the line spacing cannot be less than zero. The Text Ruler provides the same options as the Leading submenu.

The Paragraph tab of the Type palette lets you adjust the leading by a percentage or point size that you specify.

You can also add space between paragraphs by specifying additional spacing in points on the Paragraph tab of the Type palette.



A page of text with "after paragraph" spacing



A page of text that does not have paragraph spacing, but uses both "before" and "after paragraph" spacing for block quotes

To set leading using menu commands

1 Depending on how you want the leading to apply, do one of the following:

- To change existing text, select the paragraphs or text objects. To set leading for only one paragraph, place the insertion point anywhere in the paragraph.
- To set the leading before typing a new paragraph, place the insertion point at the beginning of the paragraph.
- To apply the leading setting to the preset format, deselect all objects.

2 Choose Leading in the Text menu to open the Leading submenu. Canvas places a checkmark next to the current leading setting.

3 Choose a standard leading in the submenu, or choose Tighten or Loosen. Canvas applies the setting immediately.

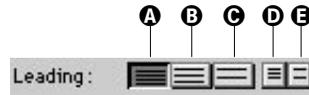
To set leading using the Text Ruler

1 Depending on how you want the leading to apply, do one of the following:

- To change existing text, select the paragraphs or text objects. To set leading for only one paragraph, place the insertion point anywhere in the paragraph.
- To set the leading before typing a new paragraph, place the insertion point at the beginning of the paragraph.
- To apply the leading setting to the preset format, deselect all objects.

2 If necessary, open the Text Ruler by choosing Show Text Ruler in the Layout►Display submenu.

- A** Single spacing
- B** 1.5 spacing
- C** Double spacing
- D** Tighten leading
- E** Loosen leading



3 Click a leading button, or click the tighten or loosen buttons. The text box on the ruler shows the current leading setting. Canvas applies the leading setting immediately.

To set leading using the Type palette

1 Depending on how you want the leading to apply, do one of the following:

- To change existing text, select the paragraphs or entire text objects. To set leading for only one paragraph, place the insertion point anywhere in the paragraph.
- To set the leading before typing a new paragraph, place the insertion point at the beginning of the paragraph.
- To apply the leading settings to the preset format, deselect all objects.

2 Configure the leading settings as described below.

Setting leading in the Type palette

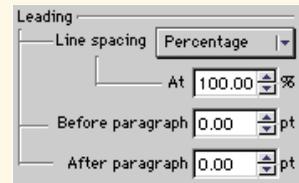
Open the Type palette by choosing Type in the Text menu, if necessary. Click the Paragraph tab to bring it to the front. After configuring the settings, click Apply to implement them.

Percentage leading. To set the leading using a percentage of the line size, choose Percentage in the Line Spacing pop-up menu and enter an amount in the At box. A leading of 100% is the same as the Normal setting in the Leading submenu of the Text menu. Double space is 200%, and

1.5 space is 150%.

Point size leading. To specify leading in points, choose Points in the Line Spacing pop-up menu and enter an amount in the At box. Although each font's standard leading might be different, normal leading is generally between 110% and 125% of the largest type size on the line. Therefore, for 10-point type, normal leading is approximately 12 points.

Before paragraph. To insert space before the first line of a paragraph, specify the number



of points in the Before Paragraph box. Before paragraph spacing does not apply to the first paragraph in a column.

After paragraph. To insert space after the last line of a paragraph, specify the number of points in the After Paragraph box. Canvas inserts space after every paragraph, including the last paragraph in a column.

Setting indents

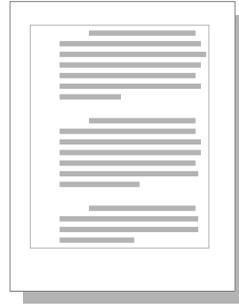
You can set the amount of space between the left and right borders of a text object and the edges of each paragraph using the Indents tab of the Type palette or the Text Ruler. For text wrapped around an object, you can also use the Indents tab to set the distance between the edge of the object and the text.



Left = 1 inch



Left = 1 inch
Right = 1 inch



First line = 1.5 inches
Left = 1 inch



First line = 1 inch
Left = 1.5 inches

Note: The Text Ruler shows indent positions for one selected object at a time. Therefore, you cannot use the Text Ruler to set indents for the preset format or for multiple selected objects.

To set indents using the Text Ruler

1 Depending on how you want the indent settings to apply, do one of the following:

- To change existing text, select the paragraphs or text objects. To set indents for only one paragraph, place the insertion point anywhere in the paragraph.
- To set the indents before typing a new paragraph, place the insertion point at the beginning of the paragraph.

2 If necessary, open the Text Ruler by choosing Show Text Ruler in the Layout ► Display submenu.

3 To set the distance between the left border of a text object and the left margin of a paragraph, drag the left indent marker to the desired position. Canvas applies the indent setting immediately. The Indent Position box shows the distance between the left border of a text object and left indent of a paragraph.

4 To set the distance between the right border of the text object and the right edge of a paragraph, drag the right indent marker to the desired position. Canvas applies the indent setting immediately. The Indent Position box shows the distance between the left border of a text object and the right indent of a paragraph.

To set indents using the Type palette

1 Depending on how you want the indent settings to apply, do one of the following:

- To change existing text, select the paragraphs or text objects. To set indents for only one paragraph, place the insertion point anywhere in the paragraph.
- To set the indents before typing a new paragraph, place the insertion point at the beginning of the paragraph.
- To apply the indent settings to the preset format, deselect all objects.

2 Configure the indent settings as described below.

Settings on the Indents tab

If necessary, open the Type palette by choosing Type in the Text menu. Click the Indents tab to bring it to the front.

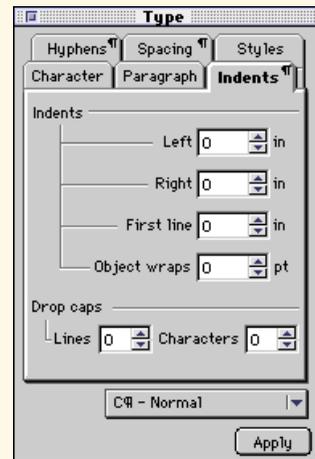
Left. To specify the distance between the left border of a text object and the left indent of a paragraph, enter the distance in the Left box.

Right. To specify the distance between the right border of a text object and the right indent of a paragraph, enter the distance in the Right box.

First Line. To specify a different indent for the first line of a paragraph, enter the distance in the First Line box. Canvas measures the first line indent from the left border of the bounding box.

Object Wraps. To specify the distance between an object and the edge of text wrapped around or inside that object, enter the number of points in the Object Wrap box.

Click Apply to implement the indent settings.



Positioning tab stops

In Canvas, a new text object has tab stops at half-inch intervals beginning at the left border of the text object. You can move the insertion point to each of these tab positions by pressing the Tab key. You can also set new tab stops using the Text Ruler. Canvas lets you position five types of tabs.

Left The left edge of text is flush with the tab position.

Center Text is centered around the tab position.

Right The right edge of text is flush with the tab position.

Decimal The first decimal (or period) in a string of text aligns directly under the tab position. For example, if you align “123.45.678” to a decimal tab, the decimal between the “3” and “4” will fall under the tab position.

Comma The first comma in a string of text aligns directly under the tab position.

In addition, you can specify a leader character. A leader character (typically a period) fills the space inserted by a tab. Leader characters are often used in a table of contents to separate chapter headings from page numbers and make them easier to read.

Note: The Text Ruler shows tab positions for one selected object at a time. Therefore, you cannot use the Text Ruler to set tabs for the pre-set format or for multiple selected objects.

To set tab stops

1 Depending on how you want the tab settings to apply, do one of the following:

- To change tab settings for existing text, select the paragraphs or text objects. To set tab stops for only one paragraph, place the insertion point anywhere in the paragraph.
- To set the tab stops before typing a new paragraph, place the insertion point at the beginning of the paragraph.

2 If necessary, open the Text Ruler by choosing Show Text Ruler in the Layout►Display submenu. Configure the tab settings as described below.

Tab settings

Tabs. Click a button to choose a tab alignment: left, center, right, decimal, or comma.

A Click the ruler to place the tab stop. Canvas removes any default tab stops to the left of tabs you set.

To move an existing tab stop, drag a tab position marker to a new location within the left and right borders of the text object. Text aligned to the tab stop adjusts to the new position.

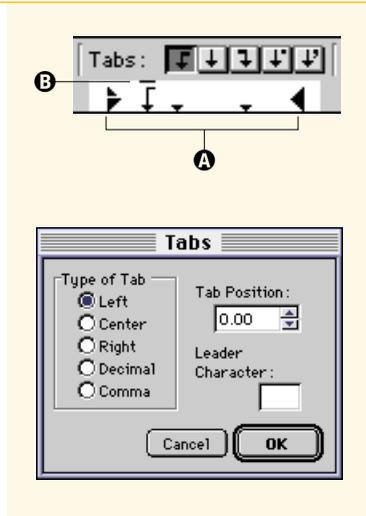
B This line indicates the current tab is selected. Click a tab position marker to select the tab; double click a marker to

open the Tabs dialog box.

Tab Position. Specify the distance between the tab and the left border of the text object.

Type of Tab. You can change the alignment setting of a tab by choosing one of these options.

Leader Character. You can use a character to fill tabbed space. To adjust the spacing of the leader character, you can use kerning options. See “Specifying spacing between characters” on page 260, for more information.



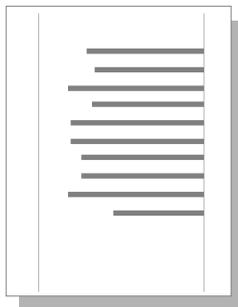
Click OK to implement the tab settings.

Paragraph alignment

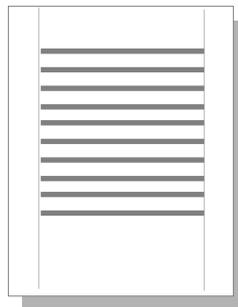
Canvas aligns text to the indents of a text object. Canvas has four alignment, or justification, settings: flush right, flush left, full (flush with both right and left indents), or centered. You can set alignment in either the Justification submenu of the Text menu, the Text Ruler, or the Paragraph tab of the Type palette.



Left-justified



Right-justified



Full-justified



Center-justified

Note: Full justification may create wide letter or word spacing, especially in narrow text columns. Other justification settings (without hyphenation) might appear too ragged on one or both sides. You can set letter- and word-spacing parameters to improve the appearance of text. For more information, see “Adjusting letter and word spacing,” next.

To set justification using menu commands

1 Depending on how you want the justification settings to apply, do one of the following:

- To change existing text, select the paragraphs or text objects. To set justification for only one paragraph, place the insertion point anywhere in the paragraph.
- To set the justification before typing a new paragraph, place the insertion point at the beginning of the paragraph.
- To apply justification settings to the preset format, deselect all objects.

2 Choose Justification in the Text menu to open the Justification submenu. Canvas places a checkmark next to the current justification setting.

3 Choose an alignment option in the submenu. Canvas applies the justification setting immediately.

To set justification using the Text Ruler

1 Depending on how you want the justification settings to apply, do one of the following:

- To change existing text, select the paragraphs or text objects. To set justification for only one paragraph, place the insertion point anywhere in the paragraph.
- To set the justification before typing a new paragraph, place the insertion point at the beginning of the paragraph.
- To apply the justification settings to the preset format, deselect all objects.

2 If necessary, open the Text Ruler by choosing Show Text Ruler in the Layout ► Display submenu.

3 Click a justification button. Canvas applies the justification setting immediately.



Justification buttons on the Text Ruler

To set justification using the Type palette

1 Depending on how you want the justification settings to apply, do one of the following:

- To change existing text, select the paragraphs or text objects. To set justification for only one paragraph, place the insertion point anywhere in the paragraph.
- To set the justification before a new paragraph, place the insertion point at the beginning of the paragraph.
- To apply justification settings to the preset format, deselect all objects.

2 If necessary, open the Type palette by choosing Type in the Text menu, and click the Paragraph tab to bring it to the front.

3 Click a Justification button.

4 Click apply to implement the justification setting.

Adjusting letter and word spacing

Depending on the type of justification you choose, you might want to adjust letter and word spacing to reduce raggedness or eliminate unusual spacing. For example, left-justified paragraphs might appear too ragged on the right edge, and full-justified paragraphs might have large spaces between characters and words.

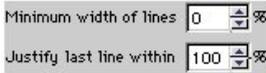
You can specify a minimum line width for a paragraph to reduce raggedness. In addition, Canvas has letter- and word-spacing parameters to let you specify minimum, maximum, and desired spacing guidelines.

To adjust letter- and word-spacing

1 Depending on how you want the letter- and word-spacing settings to apply, do one of the following:

- To change existing text, select the paragraphs or text objects. To set spacing for only one paragraph, place the insertion point anywhere in the paragraph.
- To set the spacing before typing a new paragraph, place the insertion point at the beginning of the paragraph.
- To apply the spacing settings to the preset format, deselect all objects.

- 2 If necessary, open the Type palette by choosing Type in the Text menu.
- 3 To set line-width options, click the Paragraph tab to bring it to the front, if necessary.
- 4 Depending on the type of justification applied to the text, use the following options on the Paragraph tab:

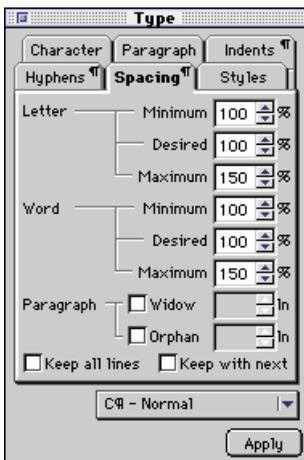


Spacing settings are on the Paragraph tab.

- For right-, left-, and center-justified text: To set the “Minimum Width of Lines,” enter a percentage in the text box. The percentage tells Canvas to adjust letter and word spacing so that each line is at least as wide as you specify. For example, if you create a two-inch wide, left-justified paragraph and set the minimum line width to 75%, Canvas adjusts the spacing so that each line is at least 1.5 inches wide. Only the last line in a paragraph is unaffected by the “Minimum Width of Lines” setting.
- For full-justified text: To tell Canvas when the last line of a paragraph is wide enough to be justified (flush with both right and left margins), enter a percentage in the “Justify Last Line Within” box. For example, you create a two-inch wide, full-justified paragraph and tell Canvas to justify the last line within 75%. If the last line is less than 1.5 inches wide, Canvas does not justify the line. However, if the last line is wider than 1.5 inches, Canvas justifies the line.

- 5 To set letter and word spacing parameters, click the Spacing tab to bring it to the front, if necessary. Set the minimum, desired, and maximum spacing in the Letter and Word areas. Specify each setting as a percentage of the current spacing. The desired spacing must be greater than the minimum and less than the maximum. The maximum spacing cannot be less than the minimum.

Canvas will try to adjust spacing to the desired percentage, but might not be able to depending on minimum line width and justification settings. In these cases, Canvas will then try to adjust the spacing within the minimum and maximum percentages you specify. However, if the minimum and maximum spacing parameters are still in conflict with minimum line width or full justification settings, Canvas will ignore the spacing parameters.



To change the spacing of a paragraph by a set amount, you can set the minimum, desired, and maximum percentages to the same value. This has a similar effect to kerning the entire paragraph.

Note: If you applied kerning to characters within the selection, Canvas adjusts the spacing as a percentage of the kerning.

6 Click Apply to implement the settings.

Automatic hyphenation

Canvas can insert a hyphen in the last word of a line to give text objects a more balanced, even appearance. You can also control the hyphenation properties so that Canvas only hyphenates under specific circumstances.

Note: Hyphenation settings apply to entire paragraphs. To hyphenate a specific word, you can manually insert a hyphen.

To set hyphenation for paragraphs

1 Depending on how you want the hyphenation settings to apply, do one of the following:

- To change existing text, select the paragraphs or text objects. To set hyphenation for only one paragraph, place the insertion point anywhere in the paragraph.
- To allow Canvas to insert hyphens as you type a new paragraph, place the insertion point at the beginning of the paragraph.
- To apply hyphenation settings to the preset format, deselect all objects.

2 Configure the hyphenation settings as described below.

Hyphenation settings

If necessary, open the Type palette by choosing Type in the Text menu. Click the Hyphens tab to bring it to the front. Turn hyphenation on and configure the following settings.

After word beginning. Specify the minimum number of letters that must precede a hyphen.

Before word ending. Specify the minimum number of letters that must follow a hyphen.

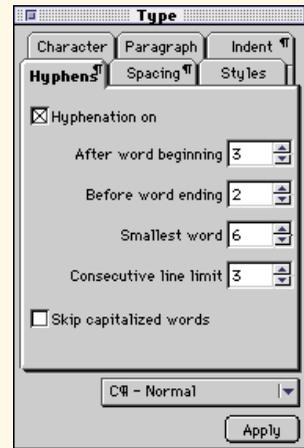
Smallest word. Specify the minimum number of letters

that a word must have to be hyphenated.

Consecutive line limit. Specify the number of consecutive lines that can end in hyphens. For example, if four consecutive lines could end in hyphens but the limit is three, Canvas does not hyphenate the last word of the fourth line.

Skip capitalized words. Turn this option on to prevent proper names and other words beginning with a capital letter from being hyphenated.

Click Apply to implement the hyphenation settings.



Specifying text flow options

You can set text flow options to avoid leaving just a few lines at the top or bottom of a column of flowed text. The term *widow* describes the last line of a paragraph that falls at the top of a column, and *orphan* refers to the first line of a paragraph that falls at the bottom of a column. Canvas can prevent widows and orphans in a text flow by moving the page or column break higher and sending lines to the next page or column. In addition, you can specify that all lines in a paragraph stay together, or that certain pairs of paragraphs always remain together in the same column.

Note: Although you can specify widow and orphan settings for individual paragraphs, you should apply these settings to entire objects or to the preset format. This way, as you edit and move paragraphs, the location of the column break can change without causing widows and orphans.

However, to modify a column break in a particular paragraph, keep all lines in a paragraph together, or keep two paragraphs together, you should change the text flow settings for the specific paragraph only. In most cases, you won't want these settings to apply to every column break.

To prevent widows and orphans

1 Depending on how you want the text flow settings to apply, do one of the following:

- To change text flow settings for existing text, select the text objects or paragraphs. To change only one paragraph, place the insertion point anywhere in the paragraph.
- To apply the text flow settings to the preset format, deselect all objects.

2 If necessary, open the Type palette by choosing Type in the Text menu, and click the Spacing tab to bring it to the front.

3 Configure the widows and orphans settings, as described below.

Widow and Orphan settings

Use the Paragraph area of the Spacing tab to configure widows and orphans protection properties.

Widow. Turn on to activate widow protection.

If widow protection is on, you can specify the minimum number of lines that can appear at the top of a column in a linked flow.

Orphan. Turn on to activate orphan protection.

If orphan protection is on, you can specify the minimum number of lines that can appear in the last paragraph of a column in a linked flow.

Keep all lines. To prevent Canvas from inserting a column break in a paragraph, turn on this option. This prevents widows and orphans, but might leave a lot of blank space at the bottom of a column.



Keep with next. To prevent two paragraphs from being separated by a column break, turn on this option. This option is useful for keeping a one-line paragraph, such as a heading, together with its section.

Click Apply to implement the text flow settings.

Setting drop caps



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Drop caps are large characters that extend below the normal baseline of the first line of an opening paragraph. Canvas indents the text below the first line to make room for the drop caps. Canvas can format drop caps for just the first paragraph of an object or any selected paragraphs.

To set up a drop cap

1 Depending on how you want the drop cap to apply, do one of the following:

To apply to	Do this
First paragraph in a text object	Select the object or place the insertion point anywhere in the first paragraph
All other paragraphs	Place the insertion point in a paragraph, or select a paragraph. You can also select multiple consecutive paragraphs.
A new paragraph you are about to type	Place the insertion point at the beginning of the paragraph.
The preset format	Deselect all objects. Canvas will apply drop caps to the first paragraph of all new text objects you create with the Text tool.

2 Configure the drop cap options as described below.

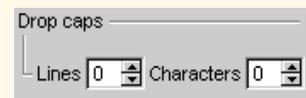
Drop Cap settings

If necessary, open the Type palette by choosing Type in the Text menu. Click the Indents tab to bring it to the front.

Lines. Specify the number of lines you want the drop caps to

occupy. This determines the vertical height of the drop cap.

Characters. Specify the number of characters to enlarge for drop caps. Canvas always applies this setting beginning with the first character in a paragraph.



Click Apply to implement the drop cap settings.

USING TYPE STYLES

You can save type formatting settings as named character and paragraph type styles using the Styles tab in the Type palette. Canvas stores type styles with documents. When you open a document, Canvas loads the associated styles so you can apply them.

Type styles make it easy to apply formats and maintain consistency throughout a document. You can base styles on each other to form a “family” of styles, so that styles inherit the character and paragraph attributes of a parent style. Organizing styles in this manner makes global style changes a simple matter of changing the parent style.

When you change a style, text using the style also changes. In the case of style families, when a parent style changes, Canvas updates the entire style family and all text using styles in the family.

Creating new type styles

You can create two kinds of styles, character and paragraph, which incorporate different formatting attributes. After establishing character and paragraph styles, you can apply them independently to create new combinations.

Character style attributes

Font

Type size

Font style

Capitalization style

Baseline position

Kerning

Colors (optional)

Paragraph style attributes

Leading

Indents

Justification

Drop caps

Hyphens

Letter and word spacing

Text flow settings

Character attributes and colors (optional)

To create a new type style

To save the attributes of existing text as a style, place the insertion point in the text and choose Type in the Text menu to open the Type palette. You can also save current Type palette, Text menu, and Text Ruler settings as a style, without first applying them to text.

After you choose settings for a type style, click the Styles tab in the Type palette to bring it to the front.

Example. Displays a sample of text with the current formatting settings applied.

Description. Lists the current character or paragraph attributes. The **C** and ¶ buttons toggle between descriptions of character and paragraph attributes.

To save a type style, click Create to open the Create Type Style dialog box. Configure the following settings.

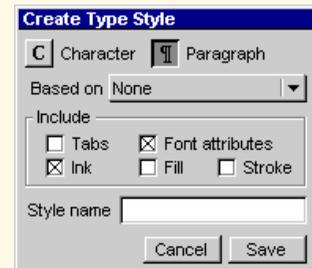
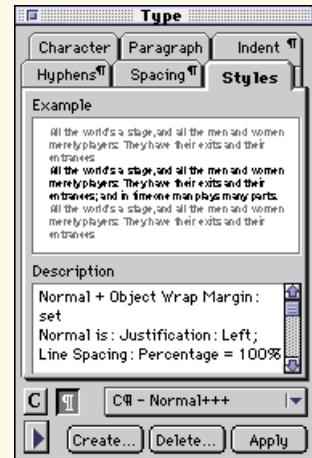
Character or Paragraph. Click one of these buttons to specify what kind of style you want to create.

Based on. Choose a style name in this pop-up menu to base the style you are creating on an existing style. To disable this feature, choose None. See “Using style families,” page 280, for more information.

Include. Select the attributes you want to save as part of the style. You can include ink settings (fill and stroke attributes that have been applied to existing text) in character and paragraph styles. For paragraph styles, you can also include font attributes and tab settings.

Style name. Type a name for the style.

Click Save to store the style and close the dialog box.



Using style families

When you base a style on another, the style “inherits” the attributes of the parent style. When the parent style changes, Canvas also updates all related styles. In addition to inherited attributes, the style possesses its own attributes, which you specify. A style’s own attributes always take precedence over attributes inherited from the parent style.

For example, you create a style, Body2, based on a parent style, Body1. The fonts are the same, but the type sizes are different. Body2 uses 10 point type, while Body1 uses 12 point. If you change the font

for the parent style, the font also changes for Body2. However, if the *point size* changes for the parent style, Body2 does not change, because Body2's own attributes take precedence. To make Body2 always use the same point size as Body1, you must set the point sizes equal, base Body2 on Body1, and save the style again.

In addition, if you later change Body2's *font*, this style will no longer inherit fonts from the parent style. Body2's font will override Body1's font setting.

Careful planning will save you from time-consuming corrections when basing styles on each other. In some cases, changing a parent style's attributes may cause unwanted changes throughout the style family. For example, if you base ten styles on Body1, and later decide that you want Body1 (but not the whole family of styles) to be double spaced, you must first change the leading for Body1, then *remove* the leading setting from each of the other ten styles.

Saving and loading type styles

You can save type styles to files on disk and then load them into other documents. This feature helps maintain consistency between documents, and lets you share type styles with other Canvas users.

◆ **To save a type style to disk:** Press the triangle at the bottom-left of the Styles tab and choose Save Style in the pop-up menu. In the directory dialog box, type a filename and specify a location to save the file, then click Save.

◆ **To load a type style:** Press the triangle at the bottom-left of the Styles tab and choose Load Style in the pop-up menu. In the directory dialog box, locate and select the style, then click Open.

Copying type styles between documents

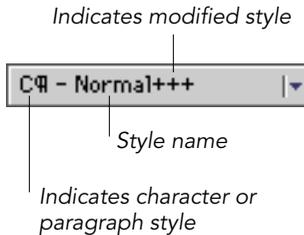
You can copy named type styles from one Canvas document to another by copying text that uses the style and pasting it into a different document. Canvas transfers the style with the text. When you save the document, Canvas also stores the transferred style.

A type style based on another style cannot inherit attributes across documents. For example, Body2 is based on a parent style, Body1, and you copy only Body2 to a new document. Body2 in the new document no longer inherits attributes from Body1, which is still in the original document.

However, if you copy both Body1 and Body2 to a new document, the relationship is preserved, and Body2 will inherit attributes from its parent style.

Applying type styles

Applying type styles is similar to applying individual character or paragraph formats using the Type palette. However, instead of configuring settings on each of the tabs in the palette, you can simply choose style names in the pop-up menu at the bottom-right corner of the Type palette.



The pop-up menu displays the current type style name. The **C** and **¶** indicate if the style is a character or paragraph style, or both. If “+++” appears to the right of a style name, the style has been modified but not saved. If you choose a style in the pop-up menu when “+++” appears next to the current style, you will lose the modifications to the style. Therefore, if you want to use the settings again, you should save the modified style with a new name before applying other styles.

◆ **To apply a style to selected text or text objects:** Select the text or text object(s) to which you want to apply a style. Choose a style in the pop-up menu at the bottom-right of the Type palette. Click Apply to implement the style.

If the text you selected already had a style applied, Canvas replaces the style with the style you choose. In addition, if you apply a paragraph style with font attributes to highlighted text, the font attributes affect the selection only, and the paragraph attributes affect the entire paragraph.

◆ **To use a type style as the current format setting:** If necessary, deselect all text objects by pressing Enter (Mac) or Esc (Windows). Choose a style in the pop-up menu on the bottom-right corner of the Type palette and click Apply. Canvas formats new text objects with the specified style.

Tip

To set current inks (other than black) for new text, save the inks as a type style attribute and use the type style as the current text format. These inks don't affect the current inks for vector objects.

Modifying type styles

You can change the attributes of a type style and save the style with the same name. When you change a style's attributes, all styles in the family automatically inherit the new attributes and Canvas updates any existing text that uses the family of styles.

To modify a type style

- 1 In the Type palette, choose the style you want to edit in the pop-up menu at the bottom of the palette.
- 2 Use the Type palette to change the style's attributes. Canvas displays “+++” after the style name at the bottom of the palette to indicate that changes were made to the style.
- 3 Click the Styles tab to bring it to the front, and click Create.
- 4 In the Create Type Styles dialog box, Canvas displays the current style name in the Based On pop-up menu and Style Name box. To replace the style, do not change these settings.
- 5 If you want, you can include ink settings. For paragraph styles, you can also include font attributes.
- 6 Click Save. Canvas asks you to confirm that you want to replace the existing style with the new style. Click OK.

Deleting type styles

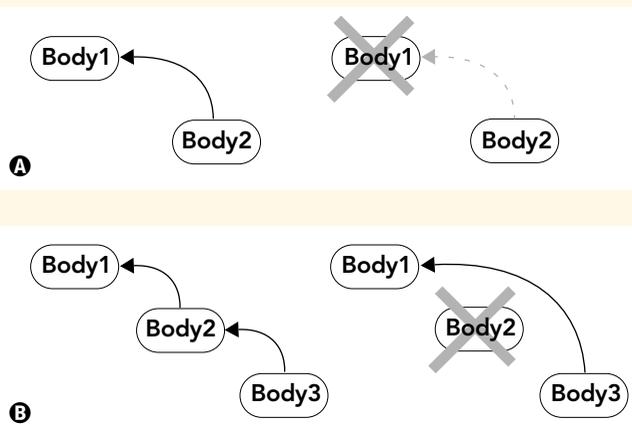
To minimize confusion when choosing styles to apply, you can delete type styles you don't use. Text using a deleted type style retains its formatting, but no longer has a named style. In addition, any text using a style based on a deleted style also loses its named style. See the illustration below for other effects of deleting a type style that is part of a style family.

Deleting parent styles

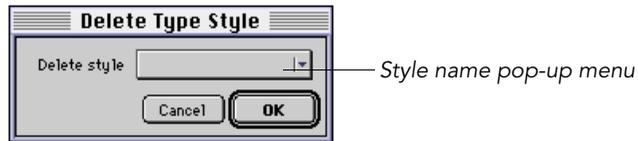
The diagram shows the results of deleting type styles on which other styles are based. Arrows indicate how these type styles are based on each other.

A Body2 is based on Body1. Deleting Body1 makes Body2 an independent style.

B Body3 is based on Body2, which in turn is based on Body1. Deleting Body2 makes Body3 based on Body1.



- ◆ **To delete a style:** Click Delete on the Styles tab in the Type palette. Choose the style you want to delete in the pop-up menu and click OK.



Tips on using type styles

By putting some forethought into the purpose and design of type styles, you can ensure that you are using this feature effectively. This planning will be especially useful when editing styles and documents, allowing you to make a few modifications that update entire documents.

Design a template. If several people need to use the styles, you might want to save the styles in a template document. This way, everyone uses a common source for the styles.

Create a “normal” type style. This will make it easy to revert formatted text to a basic style. When you apply the normal style, it will have the effect of removing or overriding other styles.

Name styles by their function. For example, a heading style might consist of boldface type.

Rather than name this style “Bold,” name it “Heading,” or something that similarly describes its usage. This will make it easier to remember when to use which style.

Always apply a style. If you choose to use styles in documents, be sure to use them throughout. If you apply styles only sometimes, you might encounter difficulties maintaining consistency and performing global style changes.

Create style families when possible. You might want to use the Based On feature (see “Creating new type styles” on page 279) to create style families for styles that share some attributes. This will make global changes easier. See “Using style families” on page 280, for more information.

TYPE EFFECTS

This chapter explains how to apply different kinds of effects to type. In Canvas, you can apply three kinds of effects to type.

Path effects You can wrap text around objects, bind text to the path of an object, and slant the margins of a text object.

Ink and stroke effects You can change the color and pattern of a character's outline and interior.

Vector effects You can change a text object's shape and orientation, and convert text to paths so you can use path editing techniques to reshape characters. You can also create three-dimensional and lighting effects.

Applying path effects to type

Path effects let you change text margins and baselines to make text flow around or inside shapes. Canvas has two path effects, wrap and bind.

- Wrap effects adjust text objects' margins so that text flows outside or fits inside shapes. You can use objects to set text boundaries or choose a menu option that lets you slant text margins by dragging selection handles.
- Bind effects align the text baseline to the path of an object you select. If the path is not straight and horizontal, Canvas changes the vertical orientation to match the path.

Wrapping text inside an object

When you wrap text inside a paint or vector object, Canvas adjusts the text object's margins so that text fits within the boundaries of the object. A text object can be wrapped inside only one object at a time, and an object can have only one text object wrapped inside it.

Canvas has two methods of wrapping text inside an object. You can select an existing text object and a vector or paint object and choose the Wrap►Inside Shape option in the Text menu. You can also select an existing paint or vector object and simply begin typing; the text will stay inside the boundaries of the object.



Center-justified text wrapped inside an oval

If you wrap text inside an open vector object, such as an arc, the text wraps between the bounding box and the concave side of the arc. If you try to wrap text to a line or a narrow arc, the text will not be visible. If this occurs, choose **Wrap>Remove Wrap** in the Text menu or choose **Undo** in the Edit menu to make the text visible again.

◆ **To wrap existing text inside an object:** Select an object and a text object. Choose **Wrap>Inside Shape** in the Text menu. Canvas places the text inside the object.

If there is more text than can fit inside the shape, Canvas inserts a column break in the text object and displays a text flow symbol. You can resize the object to fit the text, or flow the excess text to another column; see “Placing overflow text in another column” on page 234.

◆ **To type new text inside an object:** Select a vector or paint object and begin typing. Canvas adjusts margins so that text you type remains within the left and right borders of the object.

If the object is too small to contain all the text you type, the text object extends below the object. You can resize the object to fit the text. You can also resize the text object to fit the shape, and then flow any excess text to another column.

Wrapping text outside an object

The **Wrap>Outside Shape** option in the Text menu lets you flow text around objects. When you apply an outside wrap, Canvas adjusts margins so text doesn’t overlap selected vector or paint objects. This

option is available when you select one text object and one or more paint or vector objects. You can simultaneously wrap one text object around more than one object. You can also wrap more than one text object around an object, but you must wrap one text object at a time.

Depending on the position of the object within the text column, text wraps to one side of the shape. A single column of text cannot wrap around both sides of an object.

Text wrapped outside objects



Object to one side; text wraps to one side



Object in center; text wraps to one side only



Two objects on opposite sides; text wraps to one side of each



Two columns, each wrapped to one side of two objects

✓ Tip

When you wrap text outside a paint object, Canvas actually wraps text to the pixels inside the image based on the color of the pixels. Off-screen, Canvas converts the image to black and white; text wraps around areas that would be mapped to black, and overlaps areas that would be mapped to white.

To wrap text around an object

Before wrapping a text object, you might want to position the text so it overlaps an object in approximately the desired arrangement. You can adjust the exact positioning later.

- 1 Select a text object and at least one other object. If the selected text object is already wrapped around a different object, Canvas removes that wrap. To wrap one text object around multiple objects, select all the objects at the same time.
- 2 Choose **Wrap**►**Outside Shape** in the Text menu. Canvas adjusts margins so text doesn't overlap the selected objects.
- 3 If necessary, arrange the objects until they are positioned properly. Canvas adjusts the margins as you move objects.

Slanting text columns

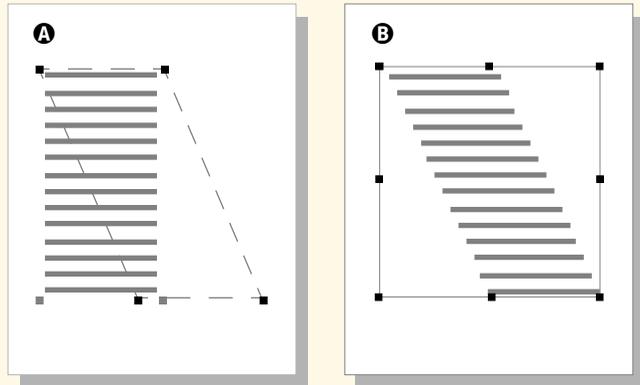
The **Wrap**►**Slant Margin** option in the Text menu lets you change a text column's margins to form a parallelogram.

Setting the column angle

When you choose the Wrap►Slant Margin option, you can drag selection handles to specify the angle of margins.

A The bottom right handle of the text column is dragged to specify the angle of the margins (shown by the dashed lines).

B Canvas adjusts the margins to slant the text column within the bounding rectangle. (The bounding rectangle is represented by the eight selection handles.)



To slant right and left margins

- 1 Select a text object.
- 2 Choose Wrap►Slant Margin in the Text menu. The text object's selection handles change to four corner handles.
- 3 To slant margins away from the bottom line of text, drag either of the text object's top two selection handles horizontally.
- 4 To slant margins away from the top line of text, drag either of the text object's bottom two selection handles horizontally.
- 5 Press Enter (Mac) or Esc (Windows) when you are finished.

Removing wrap effects

You can restore text margins to the standard rectangular shape by choosing Wrap►Remove Wrap in the Text menu.

- ◆ **To remove a wrap effect:** Select a wrapped text object. Choose Wrap►Remove Wrap in the Text menu.



Path Text tool

Binding text to vector objects

You can bind the baseline of text to the path of most types of vector objects. Canvas adjusts the vertical orientation of each character to match the path. You cannot bind text to objects drawn with the Concentric Circles, Spiral, or Grid tools.

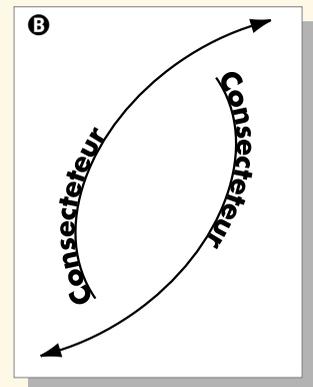
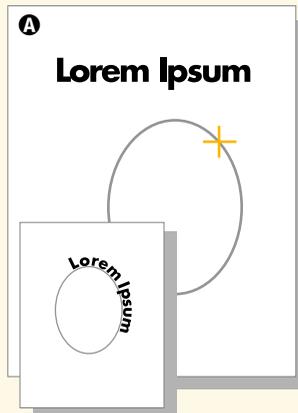
Depending on how you want to bind text, you can use the Bind Text command in the Effects menu or the Path Text tool in the toolbox. The Bind Text command in the Effects menu lets you bind existing text to an object, and the Path Text tool lets you type new text directly on the path of a selected object.

Canvas lets you bind multiple text objects to one vector object, but a text object can bind to only one vector object at a time. Also, you can bind only one text object to a vector object using the Path Text tool. To bind additional text objects to the same vector object after using the Path Text tool, you must create a separate text object with the Text tool and use the Bind Text command.

Position and direction of bound text

Whether you use the Bind Text command or Path Text tool, the location where you click the crosshair pointer determines the alignment position.

A This text is center-justified. The crosshair pointer (which appears after choosing the Bind Text command or the Path Text tool) determines where text will bind. In the example, the pointer is clicked in the upper-right quadrant of the oval. The inset shows the bound text, centered around the point where the pointer was clicked.



B For open-ended objects, such as arcs, bound text initially flows in the direction the object was drawn. In this example, the

arrows indicate the direction the arcs were drawn. Text objects bound to these arcs follow the direction of the arcs.

To bind existing text using a menu command

- 1 Select a text object and a vector object.

2 Choose Bind in the Effects menu. When the pointer is on the edge of the selected object, the pointer becomes a crosshair.

3 With the crosshair pointer, click to place the selected text on the path. Text aligns to the point where you click. For example, if the text is center-justified, Canvas binds the text so that it is centered around the point you click.

4 To change the alignment and position of bound text, see the procedure later in this section.

To type on a path using the Path Text tool

1 Select the Path Text tool in the Text tools toolbar. When the pointer is on the edge of an object, the pointer becomes a crosshair.

2 With the crosshair pointer, click where you want to start typing on the path. An insertion point appears.

3 Begin typing. Text you type aligns to the location where you placed the insertion point and follows the path of the object.

4 To change the alignment and position of bound text, see the procedure below.

Working with bound text

Once you bind text, you can change its starting position, alignment, baseline position, and flow direction. In addition, you can edit the shape and location of the vector object to which text is bound, and Canvas will fit the text to the new path.

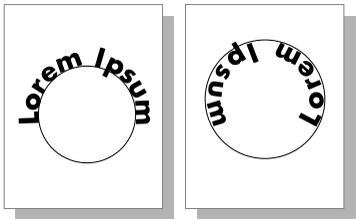
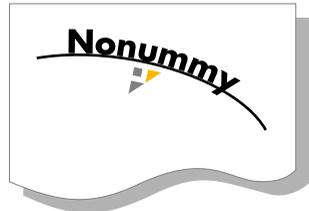
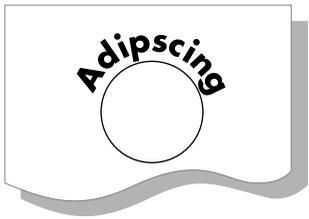
You can also edit bound text by selecting the Path Text tool and clicking the text object, or by double-clicking a bound text object with a Selection tool. However, text editing might be difficult and slow while the text is bound to an object; you might want to remove the text bind, make changes, and re-bind the text.

Bound text and its binding object move together, just like grouped objects. However, unlike grouped objects, you can select and change attributes (such as stroke and ink) individually for the text and the object.

To position and align bound text

Canvas has three Bind Position handles (shown in color below) that you can drag to place text anywhere on, above, or below an object. The handles appear when you select a bound text object.

Bind Position handles

Handle	Description	Example
	Reverse Flow handle Click to switch the vertical orientation of type relative to the object path and reverse the flow direction.	
	Alignment handle Drag to specify the point where you want type to align. For example, center-justified text will center around the location of this handle.	 <p><i>Text is centered around the alignment handle</i></p>
	Baseline Shift handle Drag to change the elevation of the baseline relative to the vector object. Baseline Shift lets you insert space between bound type and the object.	

Removing a text bind

You can remove a bind effect by selecting a bound text object and choosing Remove Effects in the Effects menu. Canvas straightens the text baseline and separates it from the vector object.

Binding text to a circle

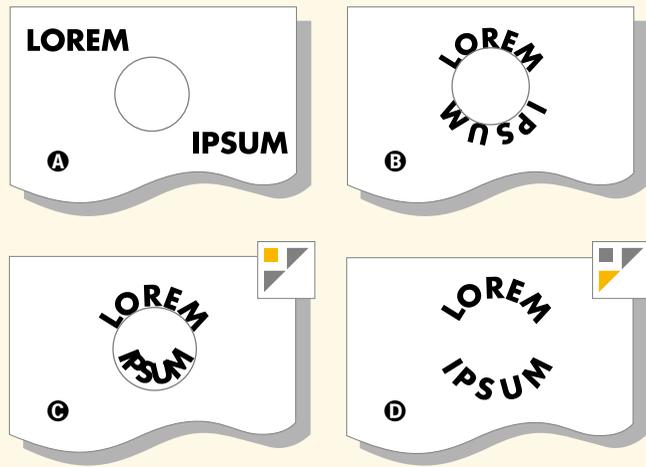
In Canvas, you can create circular logos, with text on the top flowing clockwise and text on the bottom flowing counterclockwise. You can create this effect by binding two text objects to a circle and using the Bind Position handles to arrange the text.

To create a circular logo

- 1 Create a circular object using the Oval tool in the toolbox.
- 2 Create two text objects and bind them to the circle. You can use the Path Text tool to create and bind the first text object, but you must then bind the second text object using the Bind Text command.
- 3 Center the text objects on the top and bottom of the circle by selecting each one and dragging its Align handle. Centering text objects is easier if the text is center-justified.
- 4 Click the Reverse Flow handle of the bottom text object so the text reads from left-to-right inside the circle.
- 5 Now shift the bottom text object outside the circle by dragging its Baseline Shift handle outward from the center of the circle. As you drag, Canvas displays a proportionately-sized circle to show the location of the baseline.

Binding text to a circle

- A The design consists of a circle and two text objects.
- B One text object is bound to the top of the circle, the other to the bottom of the circle. Text initially flows clockwise.
- C Clicking the Reverse Flow handle (highlighted in inset) makes "Ipsum" flow counterclockwise inside the circle.
- D Dragging the Baseline Shift handle (highlighted in inset) positions "Ipsum" outside the circle. Removing the circle completes the design.



Path effects with type and paint objects

In Canvas, type wrapped to an image follows the shape defined by dark pixels in the image. When you wrap text outside a paint object, Canvas actually wraps text to the pixels inside the image based on the color of the pixels. Canvas creates this effect by mapping the selected image to black and white off-screen; Canvas performs this operation in memory, but the original image is unaffected.

Canvas then wraps the selected text object around areas that are mapped to black. However, Canvas lets text overlap areas of the image that are mapped to white. This effect works well when you have an isolated, relatively dark image on a light background.

However, when an entire image is relatively dark or light and contrast is low, Canvas can't isolate areas to wrap around. Text will either overlap the entire image, or run around the entire image.

To get text to wrap around the areas of the image you want it to, you can use a vector object that overlaps an image, then wrap text to the vector object. This section describes how to use vector objects to make text appear to wrap to an image.

Path effects using vector object outlines

If you are working with an image that doesn't enough contrast between the subject and the background for Canvas to wrap text around the correct areas, you can draw vector objects around shapes in the image. You can then wrap or bind text to the vector object, and the text will appear to follow the shape in the image.

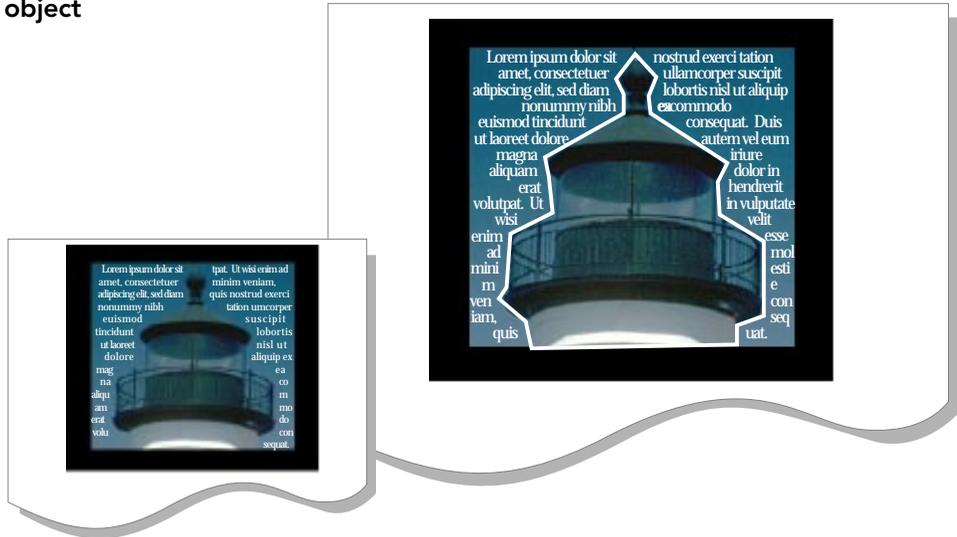
To add path effects to an image

- 1 Select a drawing tool and draw objects that follow the contours of shapes in the image. The Curve tool and Polygon tool are good for outlining complex shapes. You can also use rectangles and ovals to outline portions of shapes that are roughly geometric and group or combine the objects. To make layout easier, give the shapes a visible pen ink and no fill ink.

- 2 Wrap or bind text objects to the vector object outlines. See “Wrapping text inside an object” on page 285, “Wrapping text outside an object” on page 286, and “Binding text to vector objects” on page 289.
- 3 To hide vector object outlines, specify no pen color in the Inks palette.

Wrapping text inside a paint object

Text wrapped around the polygon outline of the lighthouse



The finished product, with the polygon hidden

Applying inks and strokes to type

You can use the Inks and Strokes palettes to change the color and pattern of a character’s interior and outline. Canvas treats each character like a vector object, to which you can apply any combination of fills and strokes to create lighting or dimensional effects. This section provides some examples of different applications of ink and stroke effects on characters. In addition, this section discusses other methods for adding color to characters, such as masks and paint objects.

In Canvas, a character’s stroke is its outline, the pen ink is the color of the outline, and the fill ink is the color of the interior. You can apply inks to existing text, or use type styles to set current inks for new text you type; see “Applying type styles” on page 282.



Stroke = 1 point
Fill ink = none
Pen ink = black



Stroke = none
Fill ink = PANTONE 123
Pen ink = none



Stroke - 1 point
Fill ink - PANTONE 123
Pen ink - black

✓ Tip

You can also apply inks to the background of a text object. Select the text object (don't put it in edit mode), hold down Option (Mac) or Ctrl (Windows) and choose a fill ink. The ink fills the area of the bounding box of the text object.

Applying inks to text

You can use the Inks palette to design colors, gradients, textures, and symbols, then apply fill and pen colors to text. Canvas treats each character as an individual object, and repeats the ink pattern for each character. For example, you create a right-to-left gradient using black and a color. You apply a gradient fill to a word, and each character blends from color to black.

◆ **To apply inks to characters:** Select the text or text objects to which you want to apply fill or pen inks. Open the Inks palette in the toolbox, and choose fill and pen inks. For more information, see “Inks: colors and patterns” on page 127.



A gradient fill was designed in the Inks palette and applied to this word. Canvas filled each character with a blend of color and black.

Using masks to create continuous character fills

You can make a pattern, gradient, or image appear to span an entire selection, rather than begin and end within each character. For example, instead of a gradient completing a blend pattern within each character of a word, you can make a gradient begin a blend in the first character and finish the blend in the last character.

In Canvas, you create these kinds of “continuous” fills using background objects and foreground text object masks. The intersection of the background and foreground objects provides the appearance of a continuous fill. This method lets you use elaborate background designs, including paint objects, to fill characters. For more information, see “Masking objects” on page 207.

- ◆ **To create a text object mask:** Position the text object in front of the background object, and select both objects. Choose Mask►Make in the Object menu.



Text in front of background objects (top - gradient-filled rectangle; bottom - image of a clamshell)

Text masking the background objects; the text appears to be filled with the background

Applying strokes to characters

You can change the attributes of a character's stroke using the Strokes palette in the toolbox. You can apply any of the stroke patterns to text. In general, because characters can have tight corners and curves, stroke patterns look better when used with large, rounded type faces.

- ◆ **To apply strokes to text:** Select the text or text objects to which you want to apply strokes. Use the Strokes palette in the toolbox to choose and configure strokes. For more information, see “Strokes: outline effects” on page 145.



Calligraphic pen stroke

*Height = 6.38 points
Width = 1.00 point
Angle = 130 degrees*



Full neon stroke

*Inside color = white
Outside color = black
Width = 8 points*

Applying vector effects to type

You can apply the following vector effects to text objects:

- Envelope
- Extrude
- Rotate
- Freeform
- Flip
- Shadow
- Path editing

You can use these effects to add dimension to type and create striking designs. This section describes briefly how to apply each of these effects. For more information, see “Vector effects” on page 207.

Before applying vector effects to type

Depending on the number and kind of effects you apply to type, you might not be able to edit the text afterwards. For example, you can edit text after rotating and skewing, but if you also extrude the type, Canvas converts the text to vector objects. In addition, depending on the speed of your system, editing rotated and skewed text might be slow. Therefore, you might want to finish all text editing, formatting, and layout before applying effects.

Freeform and rotate effects

In Canvas, you can place a text object in freeform mode and then drag any of the hollow selection handles of the bounding box to rotate and skew text. You can also perform exact rotations using the Rotate command in the Effects menu.

- ◆ **To freeform edit a text object:** Select a text object using a Selection tool. Choose Freeform in the Effects menu. You can drag a circular selection handle to rotate the text object, or a square handle to skew the text.
- ◆ **To rotate a text object an exact amount:** Choose Rotate in the Effects menu to open the Rotate dialog box. You can specify the degrees of rotation and the center of rotation. Click Apply to see the effect of the settings, or click OK to accept the settings.



This design consists of rotated (black "EXERCISE") and skewed (colored "EXERCISE") type.

The overlapping effect was achieved by dividing each word into two text objects, "EXE" and "RCI" and arranging the stacking order.

Flipping text

You can use the Flip options in the Effects menu to create mirror images of text. In Canvas, you can flip text horizontally, vertically, or both.

- ◆ **To flip text:** Select the text object(s) you want to flip. Depending on the direction you want to flip text, choose Horizontal, Vertical, or Both Axes in the Flip submenu in the Effects menu. Canvas implements the setting immediately.



Shadow effects

In Canvas, when you apply a shadow to text, the shadow is a separate text object that you can color, edit, and apply effects to independently of the original text object. By applying the right combination of effects, you can create oblique shadows and other lighting effects.

Because Canvas creates a separate text object for the shadow, changes to the original text object do not change the shadow. You should finalize text before applying shadows to ensure that the text is the same for both objects.

◆ **To create a shadow:** Select the text object(s) you want to apply shadows to. Choose Shadow in the Effects►Transform submenu to open the Shadow dialog box. Specify vertical and horizontal offset amounts and a color for shadows. Canvas creates the shadows and arranges them behind the original text object(s).

Text shadow effects

By combining Canvas effects, you can create different types of shadows.

A A standard shadow, slightly offset and shaded black.

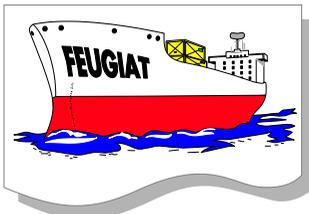
B The shadow text object was skewed to create an oblique shadow.

C This example consists of three objects: the original text, a slightly offset shadow, and an oblique shadow. To blur the shadow, convert the text to a paint object with the Area►Render option in the Image menu. Then, choose Filter►Blur►Gaussian Blur in the Image menu and set the radius to 3.0.





The "M" and "A" are separate text objects that have been "warped."



Envelope effect was used to create the impression that characters were painted on the side of this cargo ship.

Envelope text effects

You can use the Envelope effect to warp and distort type to create new character forms and stretch text like rubber. When you apply this effect to a text object, Canvas lets you drag selection handles to reshape text. Depending on the type of envelope you apply, text stretches in different ways. Using this effect, you can add perspective to text or simulate stretching type around a three-dimensional object.

Note: You cannot edit text after applying an envelope effect. In addition, you cannot extrude an object after changing its envelope. However, you can change the envelope of an extruded object.

- ◆ **To edit the envelope of a text object:** Select a text object and choose Envelope in the Effects menu. Choose a type of envelope effect in the pop-up menu and click Apply. Drag selection handles to reshape the text object.

Extruding text

You can extrude text and add lighting effects to make text appear three-dimensional. As with vector objects, you can rotate and scale extruded text to change the apparent depth, size, and orientation. For text, you can use only the Parallel option in the Extrude palette. You can also choose a color and position for the light source.

Note: You cannot edit text after extruding it. Also, Canvas removes stroke and fill attributes before extruding text because they can interfere with the three-dimensional effect. You can add color to extruded objects by choosing a fill color in the Inks palette and a color for the light source in the Extrude palette.



Extruded text with lighting effects

- ◆ **To extrude text:** Select a text object and choose Extrude in the Effects menu to open the Extrude palette. Choose Parallel in the pop-up menu, configure the settings and click Apply. Use the extrusion handles to shape and rotate the text.

Converting text to paths

Canvas can create path outlines of characters so you can edit the shape of each character. Once you convert text to paths, Canvas treats the paths as objects. You cannot edit the objects as text (apply fonts to, change the type size of, or spell check, for example).

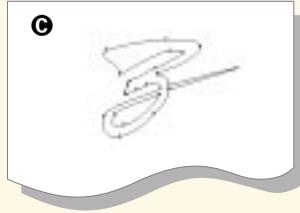
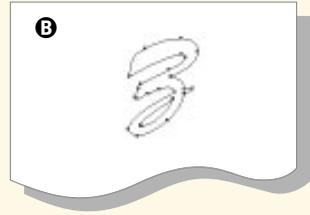
To edit text as paths

- 1** Select a text object and choose Path►Convert to Paths in the Object menu. If the text object contains multiple characters, Canvas groups the converted text together.
- 2** If you want to edit individual character outlines in a group, choose Ungroup in the Object menu. You can also use the Direct Selection tool to select shapes without ungrouping them first.
- 3** Double-click a character outline to place it in path edit mode. To put several shapes in path edit mode at the same time, you can select multiple character outlines and choose Path►Edit Path in the Object menu.
- 4** Use path editing techniques to change the outline.
- 5** Press Enter (Mac) or Esc (Windows) to exit edit mode.

Editing characters as paths

You can create your own characters and shapes using path editing techniques.

- A** The original character.
- B** The character in edit mode, after conversion to a path.
- C** Anchor points were edited to create this shape.
- D** The finished character.



PAINTING & IMAGE EDITING

V



PAINTING AND IMAGE-EDITING TOOLS

Canvas provides a full palette of painting tools, including the digital equivalents of markers, airbrushes, and paintbrushes, plus tools for creating effects like neon and blends. The toolbar of painting tools also provides tools to select, retouch, color-correct, and clone images. This chapter explains how to use these painting tools, choose image modes, and convert objects into images.

Creating new paint objects and images

In Canvas documents, paint objects are rectangular areas that contain colored pixels. Using painting tools and effects, you can change the color of each pixel to create an image. To make a new paint object, you can use the Paint Object Creator tool or the **Area►Create** command in the Image menu. When you create a new paint object with the Paint Object Creator tool, it is filled with white pixels; when you use the Create command, you can choose a color for the new pixels.

About paint objects and images in Canvas

“Images” are pictures defined by tiny dots, called pixels. A scanned photo, a TIFF or Photoshop file, and pictures you paint in Canvas are all images composed of pixels.

In a Canvas document, an image is contained in a *paint object* the same size as the image. Painting tools operate on the pixels within images,

while object tools and commands, such as the Selection tool or Align command, apply to entire paint objects.

You can perform common object operations, including move, copy, and duplicate, on paint objects. For details, see the chapter titled “Working with objects” on page 97.

You can create images entirely in Canvas by making a new paint object that you can paint

in, or creating an image from vector or text objects, as described in this chapter.

You can also import images into Canvas documents using the following methods:

- Place an existing image in a document using the Place, Paste, or Acquire commands.
- Scan a photo using the Acquire command. See “Using scanners to acquire images” on page 337.

Paint Object Creator tool



Current mode and resolution appear checked in the Paint Object Creator pop-up menu.

Using the Paint Object Creator tool

You can drag the Paint Object Creator tool in a document to make new paint objects. You can use the default settings, or specify image mode and resolution before you use the tool. For help selecting painting tools, see “Using the Painting Tools toolbar” on page 309.

◆ **To set the image mode:** Before creating a paint object, press the Paint Object Creator tool and choose an image mode in the pop-up menu. See “Image modes for Canvas paint objects” on page 328 for more information.

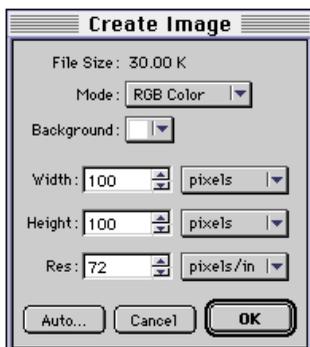
◆ **To set the resolution:** Before creating a paint object, press the Paint Object Creator tool and choose a resolution in the pop-up menu. If you choose Custom, a dialog box appears; type the resolution and click OK.

- 1 Select the Paint Object Creator tool.
- 2 Drag diagonally to create a rectangular paint object. When you release the mouse button, Canvas creates a paint object filled with white pixels. The new paint object appears in edit mode. You can begin painting and editing the image.
- 3 To exit edit mode, press Enter or Esc (Mac) or Esc (Windows). The paint object remains selected. To deselect the paint object, press Enter (Mac) or Esc (Mac and Windows) again.

Drag the Paint Object Creator tool to create a new paint object.



New paint object in edit mode, indicated by crop marks (circled) at each corner.



Using the Create command

You can create a paint object and fill the image with a background color by using the Create command.

- 1 Make sure that no objects are selected; you can press Enter (Mac) or Esc (Windows) three times to deselect all objects.
- 2 Choose Area ► Create in the Image menu. In the Create Image dialog box, choose an image mode in the Mode pop-up menu. For more information, see “Image modes for Canvas paint objects,” page 328.
- 3 Choose a background color for the image area in the Background pop-up color palette. The default color is white; you can choose a preset color or custom color; see “Creating custom colors in pop-up palettes” on page 136.
- 4 Type the width, height, and resolution for the image in the text boxes. Select the units of measurement for these settings in the pop-up menus adjacent to the text boxes.
- 5 Click Auto to let Canvas determine the optimal resolution for an image based on the halftone screen to be used for printing the image. Clicking Auto opens the Auto Resolution dialog box; see “Changing image resolution” on page 345 for details.
- 6 Click OK to create the paint object.

Creating images from objects and text

In Canvas, you can render vector objects and text into pixels in two ways: you can copy the objects or text to the Clipboard, place a paint object in edit mode, then paste the Clipboard contents; or you can select objects and choose Area ► Render in the Image menu to rasterize the objects.

◆ **To use the Render command:** Select the objects you want to rasterize and choose Area►Render in the Image menu. Configure the options (see “Render Image Options,” next) and click OK. Canvas creates an image of the objects and places it in front of the objects.

Render Image options

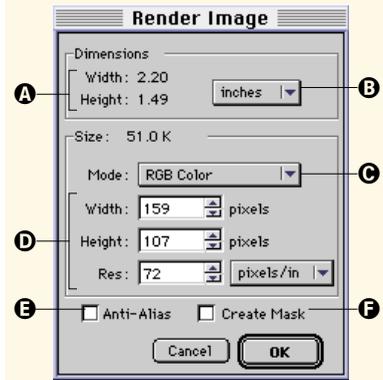
In the Render Image dialog box, you can set the following options when creating images:

- A Dimensions.** Displays the width and height of the paint object Canvas will create.
- B** Choose the unit of measurement for the Width and Height values in the Dimensions area: inches, centimeters (cm), points, or picas.
- C Mode.** Choose the color mode for the resulting image. Choose Black & White, Grayscale, Indexed Color, RGB Color, CMYK Color, or LAB Color.
- D** Set the dimensions and resolution in the text boxes. When you change a value, Canvas adjusts the others to maintain the size and proportions of the original objects. For resolution,

choose pixels per inch or pixels per centimeter in the pop-up menu. The value next to “Size” is the amount of data in the image.

- E Anti-Alias.** Turn on this option to soften the edges of the rendered objects.
- F Create Mask.** Turn on this option to generate a special image channel, based on a silhouette of the rendered objects.

Because paint objects are always rectangular, when you render a non-rectangular shape, such as the letter “O,” Canvas adds white pixels to the center and around the edges to make the paint object rectangular; these pixels are opaque, and obscure objects behind them. Create Mask generates a channel that



“masks,” or hides, the extra white pixels added by Canvas, so you can see objects behind them.

For more information on channel masks, see “Using a channel mask to make areas transparent,” page 365.

Using painting tools

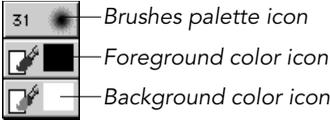
You can use the following procedure with most painting tools. With some tools, you can adjust opacity, pressure, exposure, or glow settings. See the specific tool entries in this chapter for details.

1 To place a paint object in edit mode so you can paint in the image, double-click the object with a Selection tool. You can also click the object with a painting tool; the pointer becomes a hand () when you point to a paint object with a painting tool.

2 Select foreground and background colors by pressing the corresponding color icons in the toolbox. The “Painting tool options” table on page 310 shows which tools paint with foreground and background colors.

3 Select a brush shape and a transfer mode in the Brushes palette; see “Selecting brush shapes and transfer modes” on page 312.

4 Click or drag the tool in the image to apply the paint color.

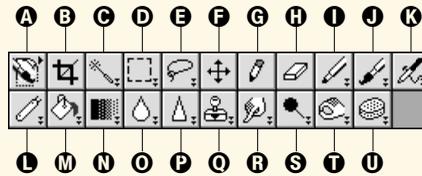


Using the Painting Tools toolbar

The Painting Tools toolbar opens from the icon at the top-right of the toolbox. The last tool you used appears there; to select that tool again, click its icon. To select a different tool, press the icon to open the toolbar and drag to the tool you want.

You can also drag the toolbar away from the toolbox to keep it open as a floating palette.

A double arrow symbol in a tool icon indicates that you can double-click the tool to open a dialog box of options.

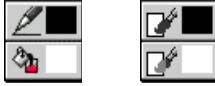


- | | |
|-------------------------------|-----------------------|
| A Paint Object Creator | L Neon |
| B Crop | M Bucket |
| C Wand | N Blend |
| D Marquee | O Blur |
| E Lasso | P Sharpen |
| F Remote Move | Q Rubber Stamp |
| G Pencil | R Smudge |
| H Eraser | S Dodge |
| I Marker | T Burn |
| J Paintbrush | U Sponge |
| K Airbrush | |

Painting tool options

A ✓ indicates that an option is available for the tool shown in the first column. For example, the Eraser tool uses options in the Brushes palette and paints with the background color. When a paint object is in edit mode, you can press the keyboard keys shown in the “Quick key” column to select painting tools.

Tool icon	Tool name	Quick key	Options dialog box	Brushes palette options	Foreground color	Background color	Tablet options
	Crop						
	Wand	W	✓				
	Lasso	L	✓			✓	
	Marquee	M					
	Pencil	P			✓	✓	
	Eraser	E		✓		✓	
	Marker	H	✓	✓	✓		✓
	Paintbrush	B	✓	✓	✓		✓
	Airbrush	A	✓	✓	✓		✓
	Neon		✓	✓	✓	✓	✓
	Bucket	K	✓	✓	✓		
	Blend	G	✓	✓	✓	✓	
	Rubber Stamp	S	✓	✓			✓
	Smudge	U	✓	✓	✓		✓
	Blur	F	✓	✓			✓
	Sharpen	R	✓	✓			✓
	Dodge	O	✓	✓			✓
	Burn	N	✓	✓			✓
	Sponge	D	✓	✓			✓
	Remote Move	V					



Palette icons for object and text tools (left) and the palette icons when a painting tool is selected (right)

Selecting colors for painting

Painting tools use the foreground or the background color, or both. In stead of pen and fill ink icons, two brush color icons appear in the toolbox when you select a painting tool. The top icon shows the foreground color and the bottom icon shows the background color.

You can use any solid color for painting. However, you can't paint with multi-colored inks, such as gradients, symbols, textures, or hatch inks. For example, if the current pen and fill inks (for objects and text) are gradients, when you edit an image, the foreground color is black and the background color is white.

Also, if you choose a spot color and edit pixels with a painting tool, Canvas converts the spot color to the image color mode (RGB, CMYK, and so on); see “Image modes for Canvas paint objects” on page 328. You can arrange paint objects in a document with vector and text objects that use spot colors, but only the vector and text objects will produce spot color separations.

◆ **To select a color for painting:** Press the foreground or background color icon in the toolbox to open the Inks palette; choose a color on the Color tab. If you tear the Inks palette away from the toolbox, it becomes a floating palette you can keep open as you work. When the palette is floating, you can select colors by clicking color tiles in the Color tab. You can also create new colors in the Color manager. See “Creating color inks” on page 134.

You can quickly switch the foreground and background painting colors by pressing “x” when a paint object is in edit mode. To restore the foreground color to black and the background color to white, press the single open quote key (‘) on the keyboard.

Picking colors from images and objects

You can use the Color Dropper tool to pick up color from an image or object. The color you select becomes the current background or foreground color that you can use for painting.

◆ **To select the background color:** Select the Color Dropper tool in the Effects Tools toolbar in the toolbox and click a color in an object or image.

Color Dropper tool



Tip

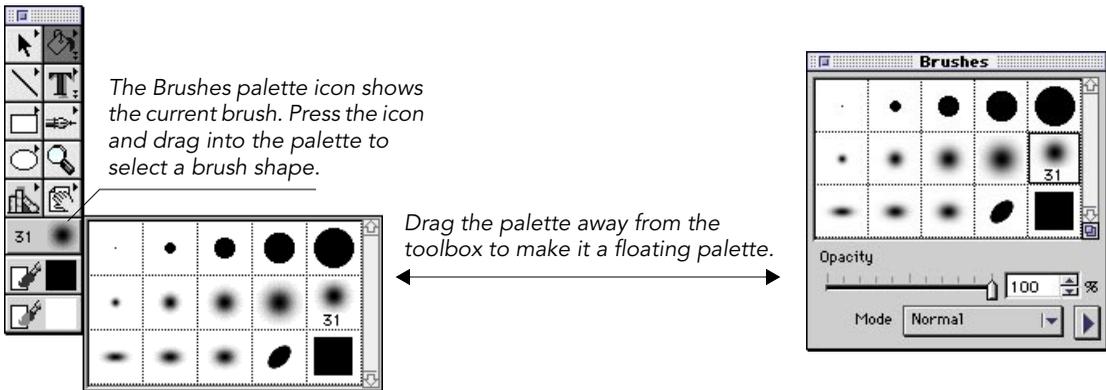
You can quickly select the Color Dropper tool when you have a painting tool selected that uses the foreground or background colors. Pressing Option (Mac) or Alt (Windows) temporarily selects the Color Dropper tool.

◆ **To select the foreground color:** Select the Color Dropper tool in the Effects Tools toolbar and Option-click (Mac) or right-button click (Windows) a color in an object or image.

Note: When a paint object is in edit mode and you change the foreground or background color, the color you select stays in effect, becoming the current color for subsequent drawing and painting.

Selecting brush shapes and transfer modes

The Brushes palette is the control center for all aspects of brush shape and mode. The palette contains preset brush shapes and also offers options, such as opacity, for some painting tools.



◆ **To select a preset brush:** With a painting tool selected, press the Brushes palette icon and drag to the brush shape you want. If the Brushes palette is open, click a brush in the palette to select it.

To keep the palette open while you work, drag it away from the toolbox and it becomes a floating palette. The palette must be floating for you to adjust paint tool options and select transfer modes.

✓ Tip

To quickly change the slider setting in the Brushes palette, you can press a number key; "1" sets the slider to 10%, "2" to 20%, and so on. "0" equals a setting of 100%.

Brushes palette painting options

You can change some brush options using controls under the brush shapes in the Brushes palette. The palette must be floating for you to use these controls.

For many painting tools, you can set the transparency level of the paint color using the Opacity slider. At 100% opacity, the paint color completely replaces the original image color.

Some tools, including the Airbrush and Smudge tools, let you adjust a pressure, exposure, or glow setting. To increase the rate at which the Airbrush applies color, increase the pressure setting. By increasing the pressure setting, you can also increase the effect of the Smudge tool.

See the individual tool descriptions for other Brushes palette options.

Using transfer modes with painting tools

You can select transfer modes in the in the Brushes palette pop-up menu. Painting tools apply color using the transfer mode you select.

Normal Paints color to every pixel the brush touches. 100% opacity replaces the original color.

Dissolve Applies color randomly within the brush shape, creating a spotted effect. To work properly, opacity must be set to less than 100%.

Multiply Darkens pixels the brush touches. Paint with darker colors to increase the effect. Painting with black results in black; painting with white does not affect the original image.

Screen Lightens pixels the brush touches. Paint with lighter colors to increase the effect. Painting with black does not affect the original image; painting with white results in white.

Overlay Paints color without destroying the highlights or shadows of the original image.

Soft Light Lightens or darkens pixels depending on the applied color's brightness value. If it is less than 50%, the brush lightens pixels. If greater than 50%, the pixels are darkened.

Hard Light Lightens or darkens pixels depending on the applied color's brightness. It is similar to Soft Light. However, painting with black produces black; painting with white produces white.

Darken Applies color if it is darker than the original color.

Lighten Applies color if it is lighter than the original color.

Difference Compares the brightness of the original and applied colors, subtracts the brightness value of the darker pixel from the lighter one, and applies that value to the original image.

Hue Changes the hue of the original color to the hue of the applied color without changing the saturation or luminance values.

Saturation Changes the saturation of the original color to the saturation of the applied color, without changing the hue or luminance values. Applying gray does not affect the original image.

Color Changes the hue and saturation of the original color to the hue and saturation of the applied color, without affecting the shadow, highlights, or midtones of the original image.

Luminosity Changes the lightness of the original color to the lightness of the applied color, without affecting the hue or saturation.

Painting individual pixels with the Pencil

Pencil tool



You can use the Pencil tool to apply the foreground color to a single pixel or create a one-pixel, freehand line. If the pixel already uses the foreground color, the Pencil applies the background color instead. You can use the Pencil tool for precise image editing at high magnifications. See “Using painting tools” on page 309.

◆ **To paint a straight line:** Shift-drag the Pencil to confine the line to 90 degree angles.

Painting in the background color with the Eraser

Eraser tool



You can paint with the background color using the Eraser tool. Follow the procedure “Using painting tools” on page 309.

Note: Opacity and transfer mode options are not available with the Eraser.

Marker tool



Painting hard-edged strokes with the Marker

The Marker tool paints with the foreground color, applying a hard-edged stroke.

- 1 To configure the Marker tool, double-click the tool to open its dialog box.
- 2 Select the options you want to use in the Fade area. In the “Fade within” text box, enter the distance in which Canvas will complete the fade.
 - To fade the brush size, choose Size.
 - To fade the color to transparent, choose Opacity.
- 3 To make a pressure-sensitive stylus affect the marker size or opacity, turn on these options under “Pressure Varies.”
- 4 Click OK and use the procedure “Using painting tools” on page 309.

Painting soft-edged strokes with the Paintbrush

The Paintbrush tool applies the foreground color. You can apply a soft (anti-aliased) brush stroke by choosing a soft-edged brush in the Brushes palette.

Paintbrush tool



- 1 To configure the Paintbrush tool, double-click the tool to open its dialog box.
- 2 Select the options you want to use in the Fade area. In the “Fade within” text box, enter the distance in which Canvas will complete the fade.
 - To fade the brush size, choose Size.
 - To fade the color to transparent, choose Opacity.
- 3 To make a pressure-sensitive stylus affect the paintbrush size or opacity, turn on these options under “Pressure Varies.”
- 4 Click OK and use the procedure “Using painting tools” on page 309.

Airbrush tool



Spraying soft strokes with the Airbrush

Using the Airbrush tool, you can apply the foreground color with a very soft (anti-aliased) stroke. The Airbrush tool paints as long as you press the mouse button. The Pressure setting in the Brushes palette controls how fast the Airbrush applies color.

1 To configure the Airbrush tool, double-click the tool to open its dialog box.

2 Select the options you want to use in the Fade area. In the “Fade within” text box, enter the distance in which Canvas will complete the fade.

- To fade the airbrush size, choose Size.
- To fade the amount of color applied, choose Pressure.

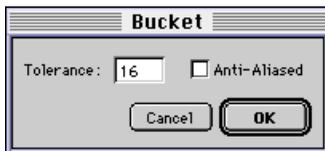
3 To make a pressure-sensitive stylus affect the airbrush size or pressure, turn on these options under “Pressure Varies.”

4 Click OK and use the procedure “Using painting tools” on page 309.

Coloring areas with the Bucket

You can use the Bucket tool to pour color on an image. The Bucket applies the foreground color where you click. You can adjust its tolerance so the color covers adjacent pixels of the same color only, or adjacent pixels of similar colors.

Bucket tool



1 To configure the Bucket tool, double-click the tool. In the Bucket dialog box, adjust the settings as needed.

- To affect only identically-colored pixels, type 0 in the Tolerance text box. Type a larger number to affect more pixels.
- To soften the edge of the filled area, turn on Anti-Aliased.

2 Click OK and use the procedure “Using painting tools” on page 309.

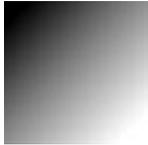
Blend tool



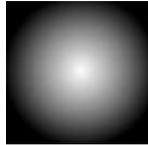
Painting color gradients with the Blend tool

You can paint a blend of colors with the Blend tool. By default, dragging the Blend tool in an image paints a blend from the foreground color to the background color.

The Blend tool is very useful for creating blends from black to white in channels, to make selection masks that fade gradually from full selection to no selection.



Linear blend



Radial blend

- 1 To configure the Blend tool, double-click the tool to open its dialog box. For more information, see “Blend options” on page 317.
- 2 Set the transfer mode and opacity in the Brushes palette; see “Selecting brush shapes and transfer modes” on page 312.
- 3 Put the image in edit mode, if necessary. Then, select the Blend tool and drag to apply the blend, depending on the style selected:
 - For linear blends, drag in the direction of the blend. Shift-drag to confine the blend’s direction to a 90- or 45-degree angle. Canvas fills the remaining area (if any) with the foreground color and background color.
 - For radial blends, drag from the center of the blend.

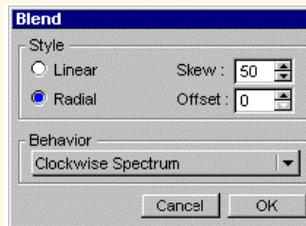
Blend options

Style. Choose radial or linear.

Offset. For Radial style, enter a value to set the percentage of starting color in the blend. To use more of the starting color in the blend, enter a number from 50 to 100.

Skew. To set the midpoint between blend colors, enter a number from 13 to 87. The default is 50.

Behavior. Choose a blending method. Foreground and Background refer to the current colors in the toolbox. Transparent options fade from



Original



the foreground color to transparency. Spectrum blends create rainbow blends in a clockwise or counter-clockwise direction around the color wheel.

A Example of a blend used to vignette a photograph. The fol-

lowing Blend options were used:

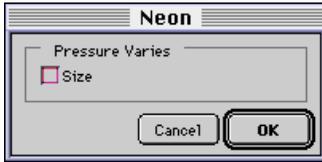
Radial-style blend
Behavior = Transparent to Foreground
(Foreground color white)
Offset = 10
Skew = 70

Neon tool



Painting two-toned “neon” strokes

You can paint a neon-tube stroke, with the foreground color inside and the background color outside, with the Neon tool. Use the Glow setting in the Brushes palette to adjust the color ratio. Transfer modes aren’t available with the Neon tool.



If you are using a pressure-sensitive tablet, double-click the Neon tool to open its dialog box. You can make the stylus pressure affect brush size by turning on the Size in the “Pressure Varies” area and clicking OK.

To paint with the Neon tool, follow the basic procedure in “Using painting tools” on page 309.

Editing images with painting tools

In addition to applying color to images with paintbrushes, you can use painting tools to alter pixels and retouch images. Canvas painting tools let you

- “clone” areas within an image
- smudge parts of an image
- lighten and darken areas
- sharpen and blur areas
- saturate and desaturate colors in an image

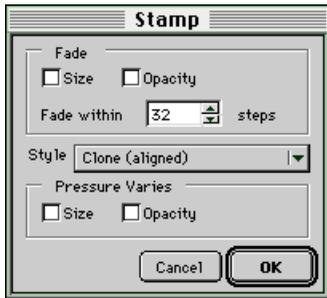
This section provides detailed descriptions of how to use painting tools to perform these operations. You can also hide or remove unwanted areas of an image by cropping; see “Using the Crop tool to change image size” on page 343.

Copying areas with the Rubber Stamp tool

Rubber Stamp tool



You can make a copy (“clone”) of an image area with the Rubber Stamp tool. This tool is very useful for retouching scanned photographs, removing lines and scratches, and hiding seams when compositing images.



Rubber Stamp pointer with Option (Mac) or Ctrl (Windows) pressed



Rubber Stamp pointer without modifier key

- 1 To configure options for the Rubber Stamp tool, double-click the tool to open its dialog box. Adjust the settings and click OK.
 - To fade the brush size or opacity of the cloned image, turn on the appropriate option in the Fade area and enter a number of pixels in the “Fade within” text box to tell Canvas the distance in which to complete the effect.
 - Select an option in the Style pop-up menu; see “Choosing a cloning style” on page 319.
 - With a pressure-sensitive tablet, you can make the stylus pressure affect size and opacity by turning on the appropriate option in the “Pressure Varies” area.

2 Select the Rubber Stamp tool and click an image with the hand pointer () to put it in edit mode, if necessary.

3 Choose a brush shape, transfer mode, and opacity setting in the Brushes palette; see “Selecting brush shapes and transfer modes” on page 312.

4 Option-click (Mac) or Ctrl-click (Windows) in the image to set the reference point for sampling an image area.

5 Drag in the image to paint a copy of the sampled area around the reference point.

Choosing a cloning style

The effect of dragging the Rubber Stamp tool in an image depends on the option you choose in the Style pop-up menu of the dialog box.

Clone (aligned) The first time you drag the Rubber Stamp tool in the image after setting the reference point, Canvas establishes a fixed direction and distance from the reference point to the pointer. The Rubber Stamp tool copies any area of the image that is this distance and direction from the pointer.

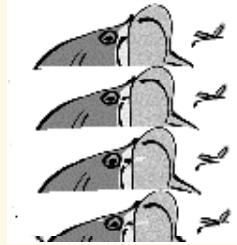
Clone (non-aligned) Dragging the Rubber Stamp tool always begins copying the image from the same reference point.

Impressionist This option smears pixels to create an impressionistic effect. You don’t need to set a reference point to use this effect.



Original

Option-click (Mac) or Ctrl-click (Windows) to set the reference point for the area you want to clone



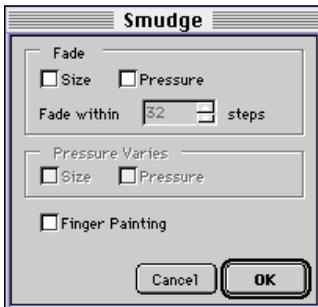
Clone (aligned)
25 subsequent drags
with Rubber Stamp tool



Clone (non-aligned)
25 subsequent drags
with Rubber Stamp tool

Smudging colors in an image

Smudge tool



With the Smudge tool, you can pull color from one area of an image and drag it into adjacent areas. You can adjust the Pressure setting in the Brushes palette to control the distance that the tool smudges a color.

- 1 Select the Dodge tool and click a paint object to put it in edit mode, if necessary.
- 2 To configure the Smudge tool, double-click the tool. In the dialog box, adjust the following settings and click OK.
 - To gradually diminish the brush size as you drag, turn on Size; to reduce the smudge effect as you drag, turn on Pressure in the Fade area. For both options, you can also type a number in the “Fade within” text box to set how quickly the effect fades.
 - To smudge a little foreground color into the image, turn on the Finger Painting option.
 - If you use a pressure-sensitive tablet and want stylus pressure to affect size and pressure, turn on Size and Pressure in the Pressure Varies area.
- 3 Select a brush shape in the Brushes palette. For more information, see “Selecting brush shapes and transfer modes” on page 312.
- 4 Adjust the Pressure setting in the Brushes palette. A setting of 1 affects the image slightly; 85 drags the color through many pixels.
- 5 Drag the Smudge tool in the image area you want to edit.

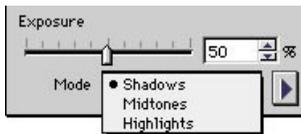
Dodge tool



To lighten ('dodge') areas in an image

You can lighten specific areas of an image with the Dodge tool.

- 1 Select the Dodge tool and click a paint object to put it in edit mode, if necessary.
- 2 To configure the Dodge tool, double-click the tool to open its dialog box. Type a number in the Distance text box to specify the length of the fading effect.
- 3 If you are using a pressure-sensitive tablet, you can make the stylus pressure affect size and exposure by turning on the appropriate option in the “Pressure Varies” area.
- 4 After configuring the Dodge tool the way you want, click OK.
- 5 Choose a brush shape in the Brushes palette. For more information, see “Selecting brush shapes and transfer modes” on page 312.
- 6 Adjust the Exposure setting in the Brushes palette. Increasing the Exposure increases the lightening effect of the tool. Decreasing the setting decreases the effect.
- 7 Choose Shadows, Midtones, or Highlights in the Mode pop-up menu. The Dodge tool lightens pixels that fall within the selected range only.
- 8 Drag the Dodge tool in the image area you want to edit.

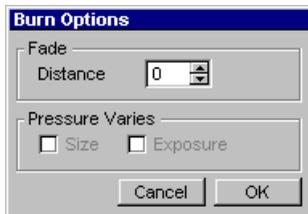


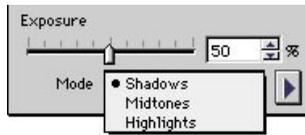
To darken ('burn') areas in an image

You can darken specific areas of an image by dragging the Burn tool over the pixels you want to darken. The tool's effect can be controlled by your selection of brush and adjustment of the tool's Fade setting.

- 1 Select the Burn tool and click a paint object to put the image in edit mode, if necessary.
- 2 To configure the Burn tool, double-click the tool to open its dialog box. Type a number in the Distance text box to specify the length of the fading effect.
- 3 If you are using a pressure-sensitive tablet, you can make the stylus pressure affect size and exposure by turning on the appropriate option in the “Pressure Varies” area.
- 4 After configuring the Burn tool the way you want, click OK.

Burn tool





5 Choose a brush shape in the Brushes palette. For more information, see “Selecting brush shapes and transfer modes” on page 312.

6 Choose an Exposure setting in the Brushes palette. Increasing the Exposure setting increases the darkening effect of the tool. Decreasing the setting decreases the effect.

7 Choose Shadows, Midtones, or Highlights in the Mode pop-up menu. The Burn tool darkens pixels that fall within the selected range only.

8 Drag the Burn tool in the image area you want to edit.

To blur areas in an image



You can soften specific areas in an image with the Blur tool. The Blur tool decreases the contrast between pixels the tool drags over.

1 Select the Blur tool and click a paint object to put the image in edit mode, if necessary.

2 To configure the Blur tool, double-click the tool. In the dialog box, adjust the following settings and click OK.

- To gradually diminish the brush size as you drag, turn on Size; to reduce the blur effect as you drag, turn on Pressure in the Fade area. For both options, you can also type a number in the “Fade within” text box to set how quickly the effect fades.
- If you use a pressure-sensitive tablet and want stylus pressure to change size and pressure, turn on Size and Pressure in the Pressure Varies area.



3 Select a brush shape in the Brushes palette. For more information, see “Selecting brush shapes and transfer modes” on page 312.

4 Adjust the Pressure setting in the Brushes palette. A setting of 1 affects the image slightly; 85 softens the image greatly.

5 Drag the Blur tool in the image area you want to edit. Canvas applies the effect to pixels touched by the pointed tip of the tool.

Sharpen tool



To sharpen areas in an image

You can increase the contrast between specific pixels in an image with the Sharpen tool.



1 Select the Sharpen tool and click a paint object to put the image in edit mode, if necessary.

2 To configure the Sharpen tool, double-click the tool. In the dialog box, adjust the following settings and click OK.

- To gradually diminish the brush size as you drag, turn on Size; to reduce the sharpening effect as you drag, turn on Pressure in the Fade area. For both options, you can also type a number in the “Fade within” text box to set how quickly the effect fades.
- If you use a pressure-sensitive tablet and want stylus pressure to affect size and pressure, turn on Size and Pressure in the Pressure Varies area.

3 Select a brush shape in the Brushes palette. For more information, see “Selecting brush shapes and transfer modes” on page 312.

4 Adjust the Pressure setting in the Brushes palette. A setting of 1 affects the image slightly; 85 dramatically sharpens the image.

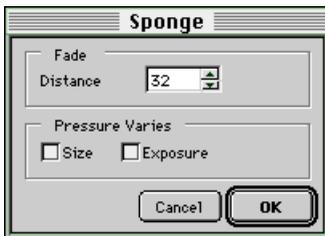
5 Drag the Sharpen tool in the image area you want to edit. Canvas applies the sharpening effect to pixels touched by the pointed tip of the tool.

Saturating and desaturating colors

Sponge tool



With the Sponge tool, you can add or remove gray content from specific areas of an image.



1 Select the Sponge tool and click a paint object to put the image in edit mode, if necessary.

2 To configure the Sponge tool, double-click the tool to open its dialog box.

- Type a number in the Distance text box to specify the length of the Sponge tool’s fading effect.
- If you are using a pressure-sensitive tablet, you can make the stylus pressure affect size and exposure by turning on the appropriate option in the “Pressure Varies” area.

3 After configuring the Sponge tool the way you want, click OK.

- 4 Choose a brush shape in the Brushes palette. For more information, see “Selecting brush shapes and transfer modes” on page 312.
- 5 Adjust the Pressure setting in the Brushes palette. Increase the pressure to increase the effect.
- 6 Choose Saturate or Desaturate in the Mode pop-up menu. Saturate removes gray; desaturate increases the amount of gray.
- 7 Choose a brush shape in the Brushes palette. See “Selecting brush shapes and transfer modes” on page 312.
- 8 Drag the Sponge tool over the image area you want to edit.



Customizing brushes for painting tools

You can use the Brushes palette to create brushes, save brushes in files on disk, modify existing brushes, and delete unwanted brushes.

You can add custom brushes to the list of preset brushes in the palette. When you exit Canvas, it stores the brush presets. The same set of brushes are available whether you work with new documents, documents you created, or documents created by another Canvas user.

To create a new brush

- 1 Press the right-arrow button in the Brushes palette and choose New Brush in the pop-up menu.
- 2 In the New Brush dialog box, adjust the settings for the brush. For more information, see “New brush options,” page 325.
- 3 After entering the settings you want, click OK. The new brush shape appears in the Brushes palette.

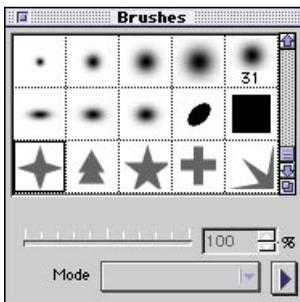
To delete brushes from the palette

You can permanently remove brush shapes from the Brushes palette. If you think you might want to use the brush shape again, you should first store it in a brushes file so you can later load it back into the palette. See “Saving and loading brushes,” page 326.

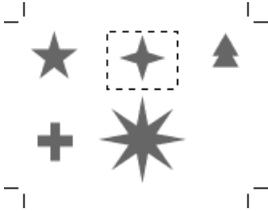
- ◆ **To delete a brush:** Select the brush you want to delete. Choose Delete Brush in the Brushes palette pop-up menu, or Command-click (Mac) or Alt-click (Windows) a brush in the palette to delete it.



Brushes palette pop-up menu



New brushes appear in the Brushes palette



You can select image areas to make brushes. This image contains rendered vector objects.

Using a selection to define a brush shape

You can make a new brush shape from a selection in an image. This lets you create non-elliptical brush shapes.

- 1 Select all or part of an image; “Selecting pixels in images,” page 353.
- 2 Choose Define Brush in the Brushes palette pop-up menu. The selection becomes a brush in the Brushes palette. Canvas uses the shape and lightness values of the selection to define the brush. Brush shapes do not contain color.

Modifying brush shapes

You can edit any brush shape. For brush shapes created from selections, you can change only the spacing.

- 1 In the Brushes palette, double-click the brush shape you want to modify.
- 2 In the Brush Options dialog box, adjust the settings you want and click OK; see “New brush options,” next.

New brush options

You create brush shapes by specifying diameter, hardness, spacing, roundness and angle. These same options are available in the Brush Options dialog box.

Diameter. Enter the diameter in pixels of the new brush.

Hardness. Enter a percentage to tell Canvas how much of the brush shape is solid.

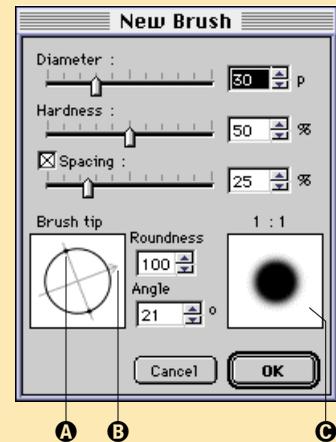
Spacing. This percentage sets the amount of brush overlap

when you drag a painting tool. Turn off Spacing to make the brush velocity-sensitive, so it skips pixels when dragged fast.

Roundness. Enter 1 to 100. To create a circle, enter 100.

Angle. Enter a number to rotate the brush shape.

- A** Drag to change Roundness.
- B** Drag to change the Angle.
- C** Preview of the brush shape.



Saving and loading brushes

You can save brushes in a file, and load brushes from a saved file into the Brushes palette. Saving brushes to disk lets you customize the Brushes palette for particular projects or exchange brushes with other Canvas users. The file format that Canvas uses to save brushes on disk is also compatible with the file format used by the Photoshop image-editing program for saving brushes.

To save brushes in a file

- 1** In the Brushes palette, add or remove brushes until you have the collection you want to save.
- 2** Choose Save Brushes in the Brushes palette pop-up menu.
- 3** In the directory dialog box, type a name for the brushes file, select a location, and click Save (Mac) or OK (Windows).

To load brushes from a file

When you load brushes, you can replace the current set of brushes with the contents of the file, or add the brushes to those in the palette.

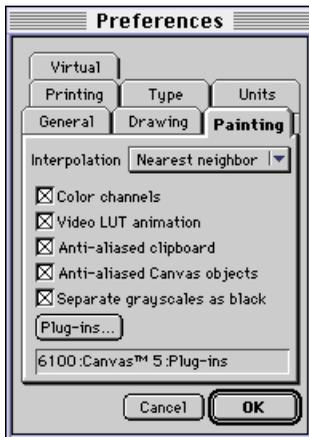
- 1** In the Brushes palette, choose one of the following commands in the pop-up menu:
 - To replace the current brushes with those in the brushes file, choose Load Brushes.
 - To add the presets in the brushes file to those currently in the palette, choose Append Brushes.
- 2** In the directory dialog box, locate the brushes file you want to open and click Open (Mac) or OK (Windows).

Using vector and text tools in paint objects

After placing a paint object in edit mode, you can use vector tools and the Text tool to add shapes and type to an image.

When you draw or type text within a paint object in edit mode, Canvas rasterizes the objects according to the image mode and resolution of the paint object, and makes a floating selection in the image.

When you type within a paint object in edit mode, you can modify the font, size, and style of the type before Canvas rasterizes it. For more information, see “To set type within images” on page 328.



To set anti-aliasing for objects placed in images

You can set a preference so Canvas softens the edges of objects you draw in an image or paste into an image from the Clipboard.

- 1 Choose Preferences in the File menu and click the Painting tab in the Preferences dialog box.

- 2 Set the preferences you want to apply to objects placed in images and click OK.

- To soften selections pasted from the Clipboard, turn on “Anti-Aliased Clipboard.”
- To soften objects or type created in paint objects in edit mode, turn on “Anti-Aliased Canvas Objects.”

For more information, see “Painting preferences” on page 88.

To draw objects within images

You can use any of the drawing tools in a paint object in edit mode to “paint” shapes. When you finish drawing the shape, Canvas rasterizes the vectors, based on its shape and colors.

- 1 Double-click the paint object with the Selection tool to put it in edit mode, if necessary, and select a drawing tool.

- 2 Select ink and stroke settings. For more information, see “Inks: colors and patterns” on page 127 and “Strokes: outline effects” on page 145.

- 3 Drag the selected tool to draw within the paint object. For more information, see “Drawing basics” on page 165. The object you draw becomes a floating selection and you can change its opacity, set the transfer mode, or apply filters; see “Changing the opacity of floating selections” on page 360 and “Image filters and effects” on page 389.

4 When you finish editing the selection, press Enter (Mac) or Esc (Mac or Windows) to make the selection part of the image. Press Enter (Mac) or Esc (Mac or Windows) again to deselect the area.

To set type within images

You can type text within a paint object in edit mode and then modify the attributes before Canvas converts the type to a floating selection.

1 Double-click the paint object with the Selection tool to put it in edit mode, if necessary, and select the Text tool in the toolbox.

2 Click the I-beam pointer in the image and type the text, which appears in a white box.

- You can use the Text menu, Type palette, or Text Ruler to set typographic attributes.

3 Press Enter (Mac) or Esc (Windows) to make the type a floating selection.

- You can change the opacity, set the transfer mode, and apply filters to the selection; see “Changing the opacity of floating selections” on page 360 and “Image filters and effects” on page 389.

4 When you finish, press Enter (Mac) or Esc (Windows) to make the type selection part of the image. Press Enter (Mac) or Esc (Mac or Windows) again to deselect the area.

Image modes for Canvas paint objects

In Canvas, image modes define the color model and the number of colors that can be used in images. When you create a new paint object in Canvas, you can assign an image mode. When you select a paint object, Canvas displays the image mode in the information area at the right end of the status bar.

How image modes affect image filters

Filters produce different results depending on the image mode. When you paint, the opacity setting of a brush acts differently on images in different modes. For the most predictable results with filters and paint tools, use the RGB Color mode.

Posterizing a LAB image introduces color to light areas.



Original



*RGB image
posterized 4 levels*



*LAB image
posterized 4 levels*

How Canvas assigns image modes

When you import an image from another source, either by opening an image file or by pasting an image from another program, Canvas assigns an image mode based on the number of colors and the color model used in the image.

The following table shows the image modes that Canvas assigns when you import images in some common image formats.

Imported format	Assigned image mode
TIFF	RGB Color, CMYK Color, or Grayscale
BMP	256-color image: Indexed 24-bit image: RGB Color
MacPaint	Black & White
Photoshop	Same as original image mode

Changing image modes

You can change the mode of an image in Canvas. For example, you might want to change an RGB image to Indexed mode to reduce file size. You might also want to create a special effect by converting a Grayscale image to Duotone mode.

◆ **To change image mode:** With the paint object selected (but not in edit mode), choose a mode in the Mode submenu in the Image menu. Choosing Duotone or Indexed mode opens a dialog box to let you specify colors; see the mode descriptions for more information.

Note: Only Grayscale images can be converted to Black & White or Duotone modes.

Black & White image mode

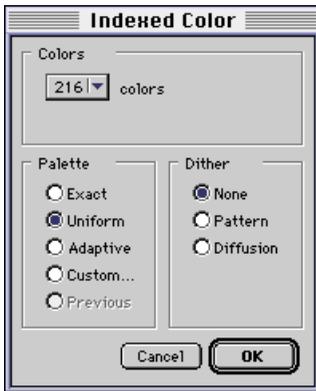
Black & White mode is appropriate for scanned line art and other “bitmap” images, in which pixels are only black or white. Black & White mode does not support shades of gray or anti-aliasing effects, and opacity controls aren’t available. Images in Black & White mode require the least amount of memory and disk space.

To convert a color image to Black & White, you must first convert it to Grayscale.

Grayscale image mode

Grayscale mode is appropriate for images scanned from black and white photographs, or when the image will never be printed in color. In Grayscale mode, pixels use 256 brightness levels to represent a range of shades from pure black to pure white. Grayscale uses 8 bits per pixel and requires less memory than most color modes.

If you convert a color image to Grayscale mode, Canvas discards all color information.



Indexed image mode

Indexed mode uses a palette of 256 colors. Because it stores fewer colors, it requires less memory than RGB Color mode; this attribute makes it especially useful for images to be used on web pages and distributed through the Internet. An Indexed mode image includes a color table, or palette, of the colors used in the image. When you convert an existing image to Indexed mode, you specify the number of colors and their hues for the image's color table.

Most image filters, anti-aliasing effects, and opacity controls are not available for indexed mode, but some third-party plug-in filters, and the Offset and De-interlace filters in Canvas can be used.

To convert an existing image to Indexed mode

- 1 Select an image with the Selection tool and choose Mode►Indexed in the Image menu.
- 2 In the Indexed Color dialog box, choose a method for computing the color table in the Palette area:

Exact	Creates a color table from the colors in the image, if the image contains 256 colors or less; otherwise, this option isn't available
Uniform/ System	Creates a color table based on the operating system's palette of 256 colors (System), or a subset of these colors (Uniform)
Adaptive	Creates a color table from the most frequently-used colors in the image
Custom	Lets you create a color table or load a color palette from a file
Previous	Uses the last color table created by the Indexed Color dialog box during the current Canvas session

- 3 Depending on which method you selected above, the Colors area in the dialog box displays different information. For the Uniform method, you can specify the number of colors to include in the color table using the Colors pop-up menu. For the Adaptive method, Canvas suggests a number of colors in the text box; you can type a new value if you want.

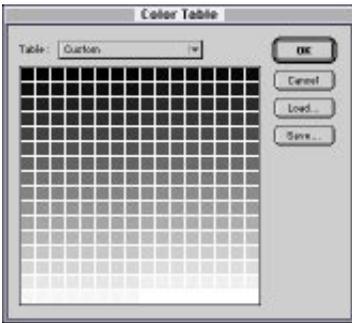
4 Choose a color-distribution option in the Dither area:

None	Changes colors to their closest equivalent in the selected color table without dithering
Pattern	Estimates colors not in the palette by arranging palette color in geometric patterns (available for Uniform/System method only)
Diffusion	Estimates non-palette colors by randomly dithering available colors; creates the most natural effect

5 After choosing the settings you want, click OK.

Creating a color table

If you choose to create a custom color table for the indexed image, Canvas opens the Color Table dialog box after you close the Indexed Color dialog box. In the dialog box is a 256-tile grid; each tile represents one color that is available for an indexed color image. The Table pop-up menu has a Custom option and four preset tables that you can use to start building a custom color table.



- Grayscale is a ramp from pure black to pure white
- Black Body is a range of sunset-like colors
- Spectrum is a set of rainbow colors
- System is the 256 standard colors of your operating system

◆ **To customize a color table:** Click a tile to open a color picker dialog box. Specify the color you want to add the table and click OK.

◆ **To add a range of colors to a color table:** You can blend two colors to fill the tiles in the color table. Drag across multiple tiles to select them (the more you select, the more gradual the blend will be). The color picker dialog box opens. Choose the first color and click OK. The color picker remains open; choose the second color and click OK. Canvas fills the selected tiles with a ramp of the two colors.

RGB Color image mode

RGB Color mode is used most often when working with high-quality full-color images, such as those from color scanners and digitized photographs stored on CD-ROM.

RGB Color mode is the most reliable mode to use for images you want to modify with painting tools and filters. However, the full range of RGB colors exceeds the range that commercial printing can reproduce, so you should be aware of the limitations of the printing

method that will be used. Also, an RGB Color image is device dependent, which means that the same RGB values can look different when displayed on different monitors.

In RGB Color mode, each pixel has a red, green, and blue component. Each component, referred to as a color channel, has 256 intensity levels. The combination of the intensity value in each channel creates each pixel's color.

CMYK Color image mode

CMYK Color mode is based on the four color inks used in commercial printing (and by some desktop printers): cyan, magenta, yellow, and black. Some color scanners can produce CMYK images.

In a CMYK Color image, each pixel has a cyan, magenta, yellow, and black component. Each of these color channels has 256 intensity levels. The combination of the intensity value in each channel creates each pixel's color. Because monitors are RGB devices, they can't display CMYK colors directly. However, Canvas attempts to display CMYK images as they will appear when printed.

LAB Color image mode

The Commission Internationale d'Eclairage (CIE) developed the LAB Color mode as an international color standard to overcome the device dependency of the RGB and CMYK modes. In a LAB Color mode image in Canvas, each pixel has one lightness and two color components. The Lightness (L) channel has 256 levels of intensity. The two color channels, labeled A and B, provide a color range from red to green and yellow to blue, respectively.

Some companies sell collections of images in LAB Color mode. Editing LAB Color mode images with some filters or painting tools can have interesting and unpredictable effects.

Duotone image mode

In traditional graphics arts reproduction, a "duotone" is a grayscale image printed with black and an additional color. Canvas lets you create duotone images, as well as "monotone," "tritone," and "quad-tone" images (printed with one, three, or four colors, respectively).

✓ Tips

You should assign only solid spot colors (PANTONE inks) or individual process colors for duotones. If you assign a color ink made from CMYK components (including a TruMatch color), Canvas treats it like a spot color and prints only one plate for the color when you output color separations.

If you plan to export a duotone image to another graphics or page layout program, be sure the color names exactly match the color names in the other application. Otherwise, you might produce more color separations than necessary.

Printing images as duotones can add interest and increase the tonal range reproduced from grayscale photographs, without the additional expense of printing full-color images. The duotone effect can be subtle or striking, depending on the color used and the amount added to the image. In any case, the additional colors are used to reproduce the gray values in the image, rather than to reproduce specific colors.

To create a monotone, duotone, tritone, or quadtone in Canvas, you must convert a Grayscale image to Duotone mode. Unlike other image modes, once an image is converted to Duotone mode, you cannot work with individual image channels. Instead, you can adjust curves for each color “channel” in the Duotone Options dialog box.

Note: In this section, the term “Duotone” refers to the Duotone image mode, not just to images printed with two inks. In Duotone mode, an image can be printed as a monotone, duotone, tritone, or quadtone.

To create a Duotone image

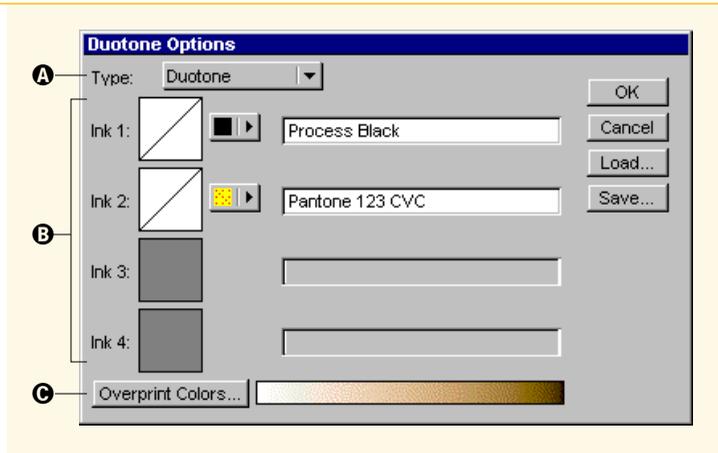
- 1 Select a paint object (with nothing selected in the image) and choose Mode ► Grayscale in the Image menu to convert to Grayscale mode. Click OK when Canvas asks to discard color information. Then choose Mode ► Duotone in the Image menu.
- 2 In the Duotone Options dialog box, choose Monotone, Duotone, Tritone, or Quadtone in the Type pop-up menu. Depending on the Type setting, the Ink 1, Ink 2, Ink 3, and Ink 4 Curve boxes, color pop-up menus, and text boxes become available.
- 3 Choose ink colors by pressing the color palette icons and selecting colors in the pop-up palettes. *Note:* You must have already added the desired colors to the preset colors on the Color tab in the Inks palette for them to be available in the pop-up palette.
 - For a monotone image, choose a single color in the Ink 1 area. For a traditional duotone, leave “Process Black” as Ink 1, and choose a second color in the Ink 2 area. For tritones and quadtone, choose additional colors for Ink 3 and Ink 4.
 - Canvas puts the name of a PANTONE ink in the text box.
 - To use process colors, type the appropriate name (“Process Cyan,” “Process Black,” “Process Magenta,” or “Process Yellow,”) so colors appear on the correct plates. If you leave the text box blank, Canvas prompts you to enter a name for the ink.

- You should specify ink colors in descending order of lightness value. In other words, darker color inks should appear at the top, and lighter color inks should appear at the bottom of the dialog box.
- 4 If necessary, click the curve boxes to adjust curves for each ink color. In the Duotone Curves dialog box, drag the curve to adjust it, or enter values in the text boxes to map input values to the desired output values, and then click OK.
 - 5 Click OK to apply the Duotone Options dialog box settings.

Duotone Options

You can select and change the following ink settings for images in Duotone mode.

- A Type.** Choose Monotone, Duotone, Tritone, or Quadtone.
- B Inks.** Click the palette icons and select colors in the pop-up palettes for each ink. Type process color names in the text boxes (PANTONE names appear automatically).
- C Overprint Colors.** Click to adjust the screen display of the Duotone inks. Because the appearance of spot-color combinations can't be predicted within Canvas, you can do this if you have an accurate printed reference for the colors you select.



Overprint Colors settings do not affect color separations, but will change the appearance of color composites printed on desktop color printers. In the Overprint Colors dialog box, click the color squares to

open a color selector dialog box. Choose the color you want to represent the ink combination on screen and then click OK.

Adjusting duotone images

After you convert an image to Duotone mode, you can reopen the Duotone Options dialog box to adjust the color curves, change ink colors, and use the Load and Save options.

◆ **To change duotone options:** Select the paint object you want to adjust and choose Mode►Duotone Inks in the Image menu. Adjust the settings in the Duotone Options dialog box and click OK to implement the new settings.

Loading and saving duotone information

Use the Load and Save buttons in the Duotone Options dialog box to work with files of duotone options information. Canvas uses a file format compatible with the duotone options files used by the Photoshop image-editing program, so you can load files saved from Photoshop, and files saved by Canvas can be loaded into Photoshop.

- Click Save to save the duotone options settings. In the directory dialog box, type a file name and click OK or Save.
- Click Load to use settings from a saved duotone options file. In the directory dialog box, select a duotone options file and click Open. Canvas will apply the ink and curve settings saved in the file to the Duotone Options dialog box.

Multichannel image mode

Multichannel image mode lets you work with multiple channels of grayscale information for a grayscale image. In multichannel mode, each channel contains lightness values as in other image modes, but the values do not relate to color components.

When you convert an image to Multichannel mode, the image data does not change. For example, if you convert an RGB Color mode image to Multichannel mode, the Red, Green, and Blue channels retain the same pixel information, but the channels no longer represent color pixels. The channels in Multichannel mode are labeled numerically (#1, #2, and so on) in the Image Channels palette.

The Multichannel mode is not available if you select a paint object containing an image in Black & White image mode.

SCANNING, SIZING, AND TRACING IMAGES

This chapter focuses on acquiring and sizing images. It explains how to scan images into Canvas documents, change the size and resolution of images, and auto-trace images to create vector objects from them. It also describes some basic techniques you can use to improve scanned images and photographs imported from Photo CDs.

Using scanners to acquire images

You can scan images directly into Canvas documents using most types of desktop scanners. Canvas supports scanners that work with Photoshop-compatible plug-in acquire modules. It also lets you use scanning devices that are compatible with the TWAIN standard.

Using TWAIN-compatible scanners

Scanner manufacturers created the TWAIN interface to standardize interaction between scanners and computer software. Scanners that comply with the TWAIN standard provide a “source manager” file, which translates scanner information into data that Canvas can use. You must install the TWAIN scanner software on your system before you can select the scanner and scan images in Canvas.

If you aren’t sure whether a scanner is TWAIN-compatible, consult the scanner documentation or contact the manufacturer.

To select a TWAIN scanner

- 1 Choose **Acquire** ► **TWAIN Select Source** in the **Image** menu. In the **Select Source** dialog box, a scrolling list contains the names of all TWAIN scanners for which Canvas can locate a data source.
- 2 Select the scanner you want to use and click **OK**. The **Select Source** dialog box closes and the scanner you selected becomes the active scanner.

To acquire images using a TWAIN scanner

- 1 When you scan an image, it appears in the active Canvas document. Open an existing document or choose the New command in the File menu to create a new document.
- 2 Choose Acquire>TWAIN Acquire in the Image menu. A dialog box for the scanner you are using appears. Refer to the scanner's user manual for information on scanner options.
- 3 Select the options you want in the scanner dialog box.
 - Click Prescan to view a preview of the image. You can verify that the image is aligned and completely visible and reposition it if necessary.
 - Depending on the available options, you can adjust scaling and brightness of the image.
- 4 Click Scan to begin scanning. When the scanner finishes, the scanned image appears in the active Canvas document.

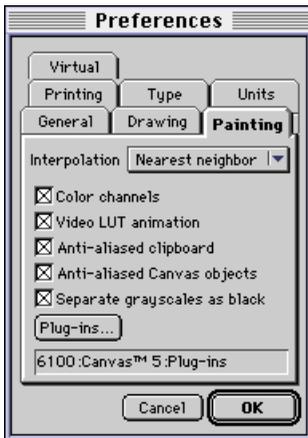
Using scanners with plug-in acquire modules

Canvas is a plug-in host program, which means that you can use scanners that work with acquire modules that are Photoshop plug-in compatible. You first should install the acquire module for your scanner so it is available to Canvas. Once Canvas recognizes an acquire module, its name appears in the Image>Acquire submenu.

To locate the plug-ins folder for Canvas

Canvas looks for plug-ins, including acquire modules, in the Plug-Ins folder inside the Canvas Tools folder (Mac) or Tools folder (Windows). To tell Canvas to look for plug-ins in a particular location, use the Plug-Ins button on the Painting tab in the Preferences dialog box.

- 1 Choose Preferences in the File menu.
- 2 In the Preferences dialog box, click the Painting tab and then click the Plug-Ins button.
- 3 In the directory dialog box, navigate to the folder where plug-ins are stored on your hard disk. Click the button labeled Select "folder name" (Mac) or select a plug-in file and click Open (Windows).
- 4 Click OK to close the Preferences dialog box.
- 5 Exit and then re-start Canvas to activate the plug-in modules.



On the Painting tab, click "Plug-ins..." to select a folder for plug-in acquire modules

To acquire images using plug-ins

1 When you scan an image in Canvas, the image appears in the active Canvas document. Either open the document you want to use, or use the New command to create a new document.

2 Choose Acquire in the Image menu and select a plug-in acquire module in the Acquire submenu.

Note: If you do not see your scanning device in the menu, make sure that its acquire module is in the correct folder; see “To locate the plug-ins folder for Canvas,” above.

3 After selecting a device, a dialog box with options for your scanner appears. Refer to the scanner’s user manual for information on these options and information on using the scanner; some common settings are described below.

4 Adjust the settings in the scanner dialog box and click Scan.

Scanning options

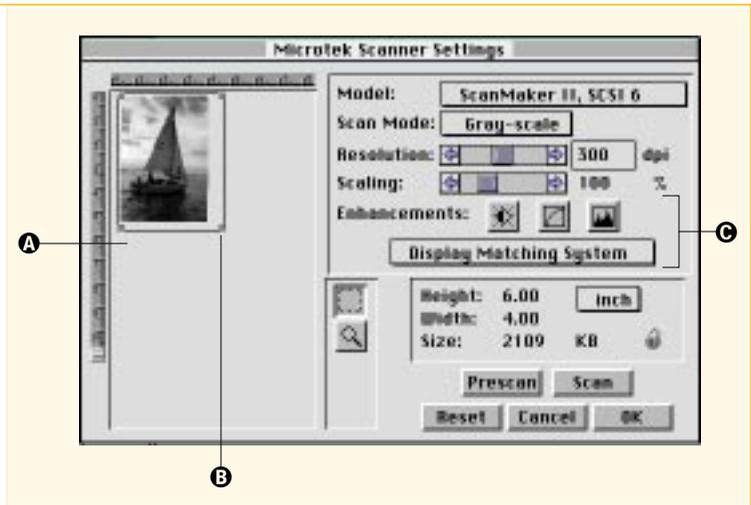
Plug-in acquire modules for scanners offer various options. Some standard scanning options are described here.

Scan Mode or Color Mode.

Choose color, black and white, or grayscale. These options correspond to the RGB Color, Grayscale, and Black & White image modes in Canvas.

Resolution. Specify the scan resolution in pixels (or dots) per inch. Scanning at higher resolution captures more image information and results in higher memory and disk storage requirements.

Scaling. Enter a scaling percentage to reduce or enlarge the image.



A Use the preview area to check the image and make sure the area you want to scan is positioned correctly.

B Many scanners let you drag the corner of a scan rectangle to select the area that will be scanned. The selected area de-

termines the size of the image object in Canvas.

C Most scanners offer brightness or exposure controls. Refer to the scanner documentation for more information on adjusting exposure settings.

Deciding on a scanning resolution

Digital images are composed of square pixels, and pixel size is a major factor affecting image quality. The resolution of an image is expressed as the number of pixels in a linear inch (abbreviated ppi) or centimeter. Smaller pixels result in higher image resolution, which generally indicates better image quality. With scanned images, the resolution is also a measure of how much information has been captured from the original artwork.

At lower resolution, such as 75 ppi, lines, edges, and character shapes in an image can appear jagged (see “About digital images and resolution” on page 341). Scanning at higher resolution produces smoother images, which also require more memory and disk space.

Use the following questions to help you decide what resolution is appropriate for images you scan.

Are you scanning line art or text? Line art, such as pen and ink drawings, and high-contrast images with sharp edges or type, should be scanned at the highest resolution possible. Text scans that will be processed with character-recognition software should also be scanned at high resolution for accurate translation.

What halftone screen frequency will be used for printing? For continuous-tone images (photographs), a common rule of thumb is to scan at a resolution of 1.5 or 2 times the screen frequency. For example, for offset printing on newsprint at a screen frequency of 85 lines per inch (lpi), an image should be scanned at 128 to 170 ppi. For images printed at 133 lpi, scanning resolution should be 200 to 266 ppi.

Talk with service bureaus and commercial printers about the screen frequency used for your projects. With this information, you can let Canvas calculate the optimal resolution for an image. See “Resampling and sharpening images” on page 347.

Will the final image be smaller or larger than the original? If you need to enlarge the image, you should scan it at a higher resolution to retain the most information when you resize it. If you will reduce the size of the image, you can scan it at a lower resolution.

Note: Because resizing tends to blur an image, you can use the Unsharp Mask filter to sharpen it. For more information, see “Using filters to sharpen images” on page 384.

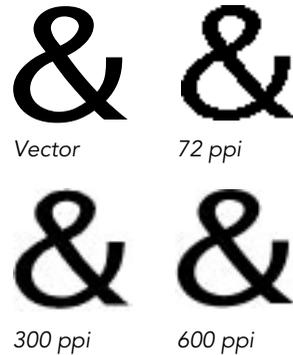
About digital images and resolution

Digital images, also known as raster and paint images, are composed of tiny square pixels.

The number of pixels that fit in a linear inch or centimeter is the image resolution. The resolution indicates how much information is in the image, independent of the resolution

used to display the image on screen or to print it.

Low-resolution images have larger pixels and look more jagged than high-resolution images. However, while high-resolution images look smoother, they also require more memory and disk space.



Changing image size

In Canvas, you can resize images the same as other objects. By stretching or scaling an image, you can create interesting distortions. You might also want to resize an image to fit a particular layout.

Keep in mind that altering the size or resolution of an image often degrades the quality of the image. Canvas uses interpolation to try to maintain the quality of the image, but this method can't compensate for drastic changes.

The best way to avoid image degradation is to avoid changing the image size or resolution.

- If an image is too big for a particular layout, consider cropping the image rather than resizing or scaling the entire image to fit.
- If a photographic image requires higher resolution, try re-scanning the original at a higher resolution, rather than increasing the resolution in Canvas.

If you resize, skew, or rotate a paint object, you can restore the original shape and resolution by choosing the Remove Effects command in the Effects menu.

Stretching images with the mouse

You can change the size of an image object by clicking it with the filled arrow Selection tool and dragging a selection handle. Stretching an image non-proportionately also stretches the pixels, which can cause unwanted distortion to the image.

Scaling images using the Scale command

You can also change the size of an image object by selecting it and choosing Scale in the Object menu. This can also stretch the image non-proportionately and cause unwanted degradation of the image.

Note: Using the Scale command on an image does not add or remove pixels from the original image.

Using the Crop command to change image size

You can adjust the overall size of an image using the Crop command.

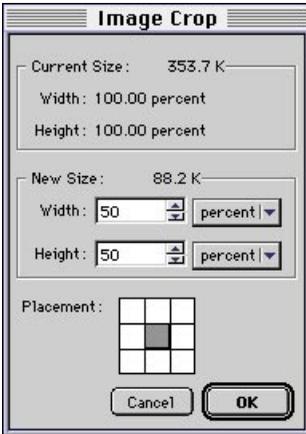
- When you enlarge an image, Canvas adds white pixels.
- When you reduce an image, Canvas crops out pixels and discards the image data.

1 Select a paint object (not in edit mode) and choose Area►Crop in the Image menu. A dialog box displays the current size, width, and height.

2 Under New Size, enter the size you want the image to be. You can use percent, pixel, inch, centimeter, point, or pica values.

3 To set the position of the resulting image, click a square in the Placement grid. For example, to crop from the right side and bottom, click the upper-left square in the Placement grid. To expand the image on all sides, click the center square.

4 Click OK to resize the image. If you are reducing the image area, Canvas warns you it will delete pixels; click OK to proceed.



You can specify relative or absolute measurements in the Image Crop dialog box

Using the Trim command to remove borders

The Trim command lets you remove same-color pixels that are near the edge of the image area. This feature is useful for removing unwanted white space or other borders that are not part of the main image. For example, you scan a photo that doesn't fill the entire scanner area, and there is a white border around the photo. The Trim command identifies the color of the pixel in the upper-left corner of the image, determines which pixels around the border match that color exactly, and deletes them.

Note: If the entire image is the same color, Canvas alerts you that the image can't be trimmed because it cannot identify a border.

◆ **To trim an image:** Select the image you want to trim and choose Area►Trim in the Image menu. Canvas removes the border.

Using the Crop tool to change image size

Crop tool



You can use the Crop tool to select a rectangular part of an image and hide the rest, much as you would crop a photograph traditionally for publication. This is called a “soft crop.” When you edit a soft cropped image, Canvas temporarily displays the hidden areas. When you finish editing the image and deselect the paint object, Canvas crops the image again.

The Crop tool also lets you “hard crop” to delete or add pixels to an image, as an alternative to using the Area►Crop command in the Image menu.

Hard crop pointer



The Crop tool by itself doesn’t delete or add pixels. However, you can Command-click (Mac) or Ctrl-click (Windows) with the Crop tool to delete and add pixels; see “To remove pixels when cropping an image” on page 344 and “To add pixels with the Crop tool” on page 345.

To crop without deleting pixels from an image

- 1 Select the Crop tool in the Paint toolbar and point to the image you want to crop.
- 2 With the crop pointer, click the image. Canvas displays a rectangle with hollow handles. This crop rectangle indicates the boundary of the image after you crop it.
- 3 Position the cropping rectangle to frame the part of the image that you want to keep.
 - Drag a corner to resize the cropping rectangle.
 - Drag a side to move the cropping rectangle. The pointer changes to a hand icon when you can move the cropping rectangle.

Hammer icon appears in crop mode when the pointer is inside the image area



- 4 Press Enter (Mac) or Esc (Windows) to crop the image, or click with the hammer icon inside the image area. Canvas hides the part of the image outside the cropping rectangle.

To restore a cropped image

Click the image with the Crop tool. Canvas displays the full image area with the cropping rectangle. Drag the corner handles outward so that all of the image is within the cropping rectangle.

You can also select the paint object and choose the Remove Effects command in the Effects menu to remove a soft crop from an image.

5 Press Enter (Mac) or Esc (Windows) or click with the hammer icon to re-crop the image based on the full-size cropping rectangle.

Adjust the cropping rectangle (highlighted) with the Crop tool. Position the cropping rectangle to enclose the part of the image you want to keep, then press Enter (Mac) or Esc (Windows) to hide the cropped part of the image.

Cropping rectangle



After cropping

Original

✓ Tip

You can also hard crop or add pixels to an image using the Selection tool and a modifier key. Select the paint object (don't put it in edit mode), then Ctrl-drag a handle to crop or add pixels to the image. When you drag, the cropping rectangle and handles appear. When you release the mouse, Canvas applies the hard crop.

To remove pixels when cropping an image

If you want to hard crop an image, you can use the Crop tool to select the rectangular area that you want to keep.

- 1** Select the Crop tool in the Paint toolbar and Command-click (Mac) or Ctrl-click (Windows) the image you want to crop. Canvas displays a cropping rectangle around the boundary of the image.
- 2** Position the cropping rectangle so it frames the part of the image you want to keep.
 - Drag a corner to resize the cropping rectangle.
 - Drag a side to move the cropping rectangle. The pointer changes to a hand icon when you can move the cropping rectangle.
- 3** Press Enter (Mac) or Esc (Windows) or click with the hammer icon to accept the hard crop.

To add pixels with the Crop tool

- 1 Select the Crop tool in the Paint toolbar and point to the image you want to crop.
- 2 Command-click (Mac) or Alt-click (Windows) the image you want to enlarge. Canvas displays a cropping rectangle with hollow square handles at the corners.
- 3 Drag the handles of the cropping rectangle to enlarge it
- 4 Press Enter (Mac) or Esc (Windows) or click with the hammer icon.

Adding a white border

When you press a modifier key and click an image with the Crop tool, you can add white pixels to the image.



Original image with cropping rectangle



White border added to image

Changing image resolution

When you change the resolution of an image, Canvas divides the original pixels to increase resolution, or merges the original pixels to decrease resolution.

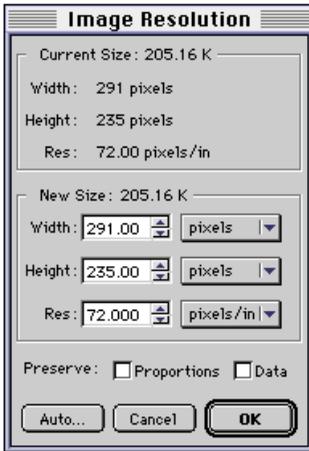
- Decreasing the resolution (“resampling down”) decreases file size and memory requirements, but can result in lost detail.
- Increasing the image’s resolution (“resampling up”) increases file size and memory requirements, but does not necessarily increase image quality, because Canvas must estimate values for the pixels it adds to the image. For more information, see “To specify how Canvas approximates new pixels” on page 348.

Note: Because of image degradation that can occur when you resample up an image, try to re-scan the original image at a higher resolution, rather than increase the image resolution in Canvas.

To change the resolution or size of an image

1 Select an image object. The image should not be in edit mode.

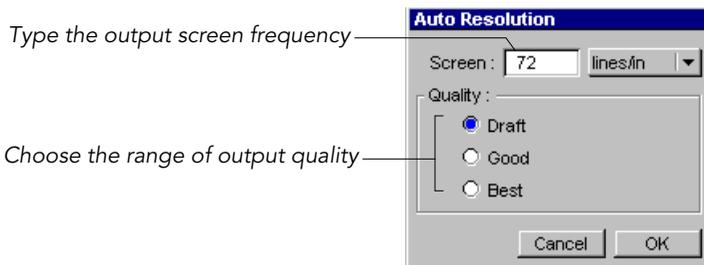
2 Choose Area►Resolution in the Image menu. The Image Resolution dialog box displays the current size, width, height, and resolution of the image.



3 When you change resolution, the size and proportions of the image can change. To avoid changes, use the following options:

- To keep the proportions of the original image, turn on the Proportions option.
 - To keep the original pixel information, turn on Proportions, then turn on Data. This tells Canvas not to use interpolation.
 - To keep the size the same, choose inches, centimeters, points, or picas as the Width and Height units.
- 4** In the New Size area, you can enter the resolution or let Canvas calculate the resolution based on the output screen frequency.

- To set the resolution yourself, enter the resolution in the “Res” text box. Select pixels per inch (“pixels/in”) or pixels per centimeter (“pixels/cm”) in the adjacent pop-up menu.
- To let Canvas calculate the resolution based on the screen frequency used for printing the image, click Auto. In the Auto Resolution dialog box, type the screen frequency in the Screen text box, choose Draft, Good, or Best, and click OK. Canvas calculates resolution by multiplying the screen frequency by factors of 1 (draft), 1.5 (good), or 2 (best).



- 5 To change the image size and maintain the current resolution, enter dimensions in the Width and Height text boxes. If you turn on the Preserve Proportions option, enter one dimension and Canvas calculates the other dimension to maintain the image proportions.
- 6 After entering your settings, click OK to resample the image.

Resampling and sharpening images

Resizing and resampling causes images to appear softer. However, you can apply the Unsharp Mask filter to bring soft images back into focus.

For more information, see “To apply the Unsharp Mask filter” on page 385.



Original 300 ppi



Resampled down to 150 ppi



150 ppi image resampled up to 300 ppi



150 ppi image with Unsharp Mask filter applied
Amount = 80
Radius = 1.6
Threshold = 0



300 ppi image with Unsharp Mask filter applied
Amount = 67
Radius = 1.6
Threshold = 0

To specify how Canvas approximates new pixels

When increasing image resolution, Canvas uses one of two methods to calculate color values for the pixels it adds to an image. To change the method, use the Preferences command.

- 1 Choose Preferences in the File menu and select the Painting tab in the Preferences dialog box.
- 2 Select an option under Interpolation and click OK. For more information, see “Painting preferences” on page 88.

Tracing images to create vector objects

You can use the Auto Trace command to create vector paths that trace the outlines of scanned diagrams, line art, and other high-contrast images. Although you might need to edit the resulting paths, auto-tracing is much faster and more exact than using the Polygon or Curve tool.

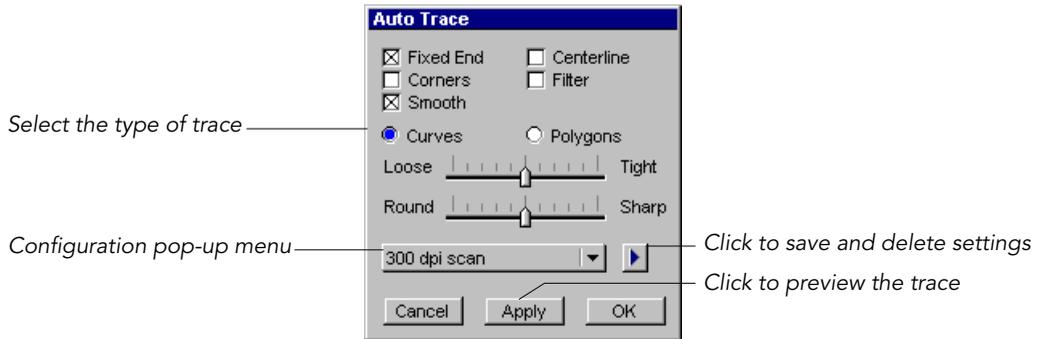
When Canvas auto-traces an image, it leaves the original image unchanged. Canvas applies the current pen ink and fill ink to the resulting vector objects. When the tracing is complete, you can move the vector objects away from the original image.

Canvas auto-traces high-resolution images with better results than low-resolution images. Auto-tracing images at resolution lower than 300 ppi can produce very jagged paths.

Note: The Auto Trace command is available only if you select a Grayscale or Black & White mode image. The Auto Trace command is not available for color images.

To auto-trace an image

- 1 Select a Grayscale or Black & White image.
- 2 Choose Auto Trace in the Image menu.
- 3 In the Auto Trace dialog box, choose a preset configuration in the Configuration pop-up menu, or adjust the individual settings. Choose a trace method by clicking the Curves or Polygons option.
 - Tracing with polygons results in the most precise trace, but sometimes causes a jagged appearance.
 - Tracing with curves results in fewer anchor points and smoother shapes.
- 4 Click OK to trace the image.



Adjusting sensitivity for curve tracing

When you use the Curves option for auto-tracing, you can adjust how closely curves follow the image with the Loose-Tight slider.

- Drag the slider toward Tight for more exact tracing with more anchor points.
- Drag the slider toward Loose for a looser tracing with fewer anchor points.

Auto-trace options

Choose this option	To do this	For this tracing
Centerline	Trace one line through the middle of large solid areas instead of tracing along the edges.	Curves and Polygons
Corners	Create corner points that let you modify one curve segment without affecting the other. Use the Round-Sharp slider to control the corner sensitivity.	Curves
Filter	Prevent the tracing of small, random elements, such as tiny lines and dots.	Curves and Polygons
Fixed end	Align the trace with the endpoints of the image.	Curves
Smooth	Trace without corner points when the Corners option is off. If Smooth and Corners are on, angles within the specified sharpness are traced as corner points.	Curves

To save custom auto-trace configurations

Canvas provides preset configurations that you can choose from a pop-up menu in the Auto Trace dialog box. You can also save your own tracing configurations so you can use the same settings again.

- 1 Select an image and choose Auto Trace in the Image menu.
- 2 In the Auto Trace dialog box, configure the options you want to save.
- 3 Press the arrow button and choose Save Settings in the pop-up menu.
- 4 Type a name for the configuration in the dialog box and click Save. The configuration appears in configuration pop-up menu.

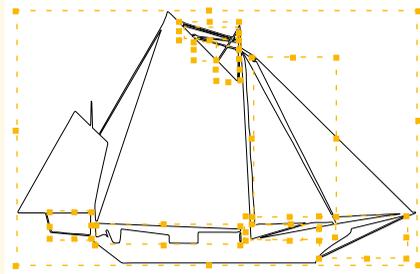
To delete custom auto-trace configurations

- 1 Select an image and choose Auto Trace in the Image menu.
- 2 In the Auto Trace dialog box, select the configuration you want to delete from the configuration pop-up menu.
- 3 Press the arrow pop-up menu and choose Delete Settings. In the dialog box, click OK to confirm you want to delete the settings.

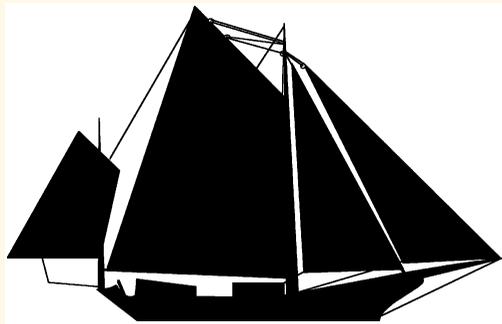
Auto-tracing images

Canvas traces an image with curves or straight path segments. Auto-tracing usually produces several paths that follow various sections of the image.

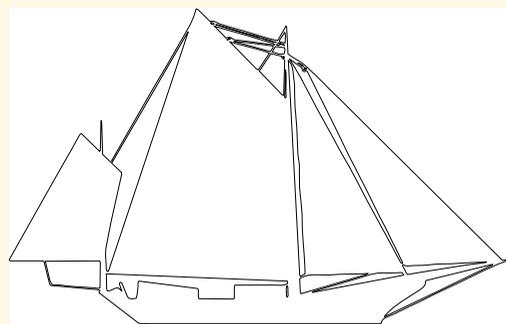
After tracing, you can group and edit the resulting paths.



Selection handles (highlighted) surround the objects produced by auto-tracing the sailboat image.



Original scan at 600 ppi resolution



Paths created with the Auto Trace command

Using Photo CD images in Canvas

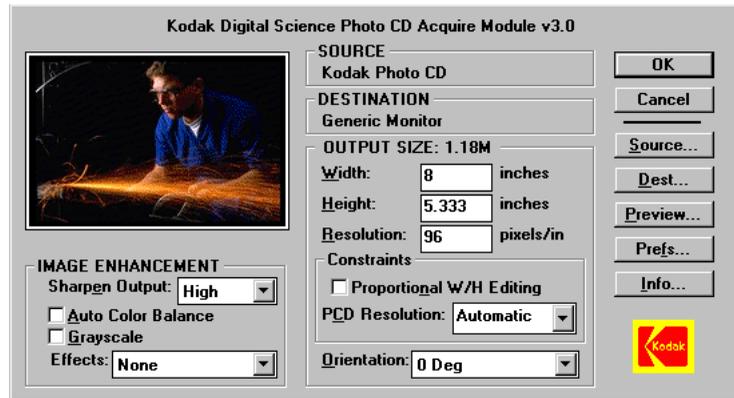
Scanned images are available from many sources in Photo CD format because it's widely supported, relatively inexpensive, and versatile.

Because Photo CD images are available in several sizes, you can choose the dimensions of the images you place. You can choose 192x128 pixels (Base/16 format), 384x256 pixels (Base/4), 768x512 pixels (Base), or 1536x1024 pixels (Base * 4).

Canvas opens Photo CD images as 72 ppi, RGB images. You can increase the resolution of an image and decrease its dimensions using the Area►Resolution command. See “To change the resolution or size of an image” on page 346 for more information.

◆ **To acquire a Photo CD image:** Choose Acquire►Kodak Photo CD in the Image menu. In the dialog box, locate the file you want and click OK. The Kodak Digital Science Acquire Module dialog box opens. Use the dialog box to select color correction, resolution, and rotation options for importing the Photo CD image.

You can select different source and destination image profiles by clicking the Source and Dest buttons. To see details about scanning method and color correction, click Info. To see a larger preview, click Preview. To import the image into the current Canvas document, click OK in the main dialog box.



Kodak Digital Science Photo CD Acquire Module dialog box

Improving Photo CD images

Photo CD scans are specifically designed to accurately reproduce photographic images. However, this means that a Photo CD image will exhibit the same problems, such as soft focus and color casts, that can be seen in the original photograph.

Some Photo CD collections provide better-quality images than others, but you can improve almost all images with a few simple steps. The following procedure describes how to apply the Unsharp mask filter to the Lightness (“L”) channel in LAB Color mode to sharpen a Photo CD image.

- 1** Use the previous procedure to acquire a Kodak Photo CD image into a Canvas document.
- 2** Select the image you just acquired and choose Mode►LAB Color in the Image menu.
- 3** Double-click the image with the Selection tool to put it in edit mode.
- 4** Choose Show Channels in the Image menu to open the Image Channels palette.
- 5** In the Image Channels palette, click the Lightness channel to activate it. For more information, see “Activating channels” on page 364.
- 6** Choose Filter►Sharpen►Unsharp Mask in the Image menu. Turn on the preview option and adjust the Amount and Radius until the channel appears significantly sharper. Click OK.
- 7** If you plan to use special effect filters, choose Mode►RGB Color in the Image menu to convert the image to RGB Color mode.

SELECTIONS, CHANNELS, AND MASKS

Canvas gives you several ways to select pixels in an image. When you select groups of pixels by area or color, you can use painting tools, filters, and special effects to modify the selected pixels without affecting the parts of the image that are not selected.

This chapter describes how to make selections in images, save selections in alpha channels, work with color and alpha channels, and create masks that make parts of images appear to be transparent.

Selecting pixels in images



A dashed border outlines the selected area in this photo of a blackboard.

When a paint object is in edit mode, any filters, commands, and painting tools that you apply can affect the entire image. When you have selected a group of pixels within the image, the effect of tools, filters, and other adjustments is confined to the selected pixels.

You can select areas in an image using painting tools and menu commands. For example, you can make rectangular selections by dragging the Marquee tool in an image, and you can use the Color Range command to select groups of pixels based on color similarity.

Selection borders

The selected pixels in an image are referred to collectively as a *selection*. When you make a selection, Canvas surrounds the selected pixels with a moving dashed border. You can hide and display the border without affecting the selection. To hide the border, choose **Select** ► **Hide Edges** in the Image menu. To display the selection border, choose **Select** ► **Show Edges** in the Image menu.

Deselecting an image selection

When you use a selection tool in normal mode, making a new selection replaces any existing selection in an image. To deselect pixels without making a new selection, choose **Select** ► **None** in the Image menu. You can also press **Enter** or **Esc** (Mac), or **Esc** (Windows) to deselect a selection. If a selection is floating, pressing **Esc** once defloats the selection; pressing **ESC** again deselects all pixels.

Selecting all pixels in an image

You can apply painting tools and filters to an entire image without first making a selection. But you can also select all the pixels in an image when you want to work with them as a selection. To select all pixels, with a paint object in edit mode, choose **Select►All** in the Image menu. A selection border appears around the entire image.

Selecting with the Marquee and Lasso tools

You can use the Marquee and Lasso tools to select areas in images. You can select rectangular areas with the Marquee tool, while the Lasso tool lets you make non-rectangular selections. With either tool, you can add to an existing selection, subtract from a selection, or select only the overlap (intersection) of two selection areas.

Marquee tool



To use the Marquee tool

1 Select the Marquee tool in the Paint Tools toolbar and point to the image you want to edit.

- If the paint object is in edit mode, the pointer becomes a crosshair.
- If the paint object is not in edit mode, the pointer becomes a hand (☞). Click the paint object to put it in edit mode.

2 Drag diagonally in the image to make a selection.

◆ **To add to a selection:** Shift-drag the Marquee tool in the image. The pointer displays a crosshair with a '+' to show that it adds to the current selection.

◆ **To subtract from a selection:** Command-drag (Mac) or Ctrl-drag (Windows) the Marquee tool in the image. The pointer displays a '-' to show that it subtracts from the current selection.

◆ **To select the intersection of an existing selection and a new selection:** Press Shift+Command (Mac) or Shift+Ctrl (Windows) as you drag the Marquee tool to select the intersection of the existing and the new selections.

Lasso tool



To use the Lasso tool

The Lasso tool lets you drag in an image to select non-rectangular areas. You can set several options before using the Lasso tool.

1 Select the Lasso tool in the Paint Tools toolbar.

2 Point to the image you want to edit. If the paint object is not in edit mode, the pointer becomes a hand (). Click the paint object to put it in edit mode. The pointer becomes a lasso.

3 Drag in the image to outline a selection. Canvas connects the starting and ending points with a straight line.

◆ **To add to a selection:** Shift-drag the Lasso in the image. The pointer displays a '+' to show that it adds to the current selection.

◆ **To subtract from a selection:** Command-drag (Mac) or Ctrl-drag (Windows) the Lasso in the image. The pointer displays a lasso with a '-' to show that it subtracts from the current selection.

◆ **To select the intersection of an existing selection and a new selection:** Press Shift+Command (Mac) or Shift+Ctrl (Windows) as you drag the Lasso tool to select the intersection of the new and existing selections.

◆ **To define a polygon selection:** Hold down Option (Mac) or Alt (Windows) and click around the area you want to select. Canvas connects the points you click with a straight selection line.

◆ **To set Lasso options:** Double-click the Lasso tool, choose from the following options, and click OK before using the tool:

- To soften the edges of the selection, type the number of pixels to feather in the Feather Radius text box. For more information, see “Feathering the edges of a selection” on page 358.
- To slightly soften the selection edge, turn on Anti-Aliased.
- To omit pixels of the current background color from the selection, turn on Omit Background Color. This can help you isolate an image on a solid color background. You can use the Color Dropper tool to pick the background color before using the Lasso tool.



Selecting areas based on color

You can use the Wand tool and the Color Range command to select pixels in an image according to color. To select a contiguous area of similarly-colored pixels, use the Wand tool. To select all pixels of a particular color, use the Color Range command

Wand tool



To use the Wand tool

1 Select the Wand tool in the Paint Tools toolbar palette and point to the object you want to edit. If the paint object is not in edit mode, the pointer becomes a hand (⌘). Click the object to put the image in edit mode. The pointer becomes a wand.

2 Click the color area you want to select.

- ◆ **To add to a selection:** Shift-click the Wand in the image. The pointer displays a '+' to show that it adds to the current selection.
- ◆ **To subtract from a selection:** Command-click (Mac) or Ctrl-click (Windows) the Wand in the image. The pointer displays a wand with a '-' to show that it subtracts from the current selection.

To adjust the tolerance of the Wand tool

You can broaden or narrow the range of colors the Wand tool selects by adjusting its tolerance. A tolerance of zero, for example, selects pixels that exactly match the color of the pixel you click.

- ◆ **To configure the Wand tool:** Double-click the Wand icon. In the Wand dialog box, type a tolerance value from zero to 255. To smooth the edges of the selection, turn on the Anti-Aliased option.



Selecting a color range

You can use the Color Range command to select all areas of similar color in an image. The command creates a grayscale selection mask similar to an alpha channel.

You can use the Load and Save buttons in the dialog box to work with color range selection files. The file format that Canvas uses for these files is compatible with Photoshop Color Range files. On Windows, these files use the extension .AXT.

To select a color range interactively

- 1 With a paint object in edit mode, choose **Select**►**Color Range** in the Image menu.
- 2 In the Color Range dialog box, choose **Sampled Colors** in the Select pop-up menu.
- 3 Adjust the Fuzziness setting. To select pixels of exactly the same color, set the Fuzziness to zero. Increase the Fuzziness to widen the range of colors to be selected.

4 Click the preview image in the dialog box. Canvas selects a range of similarly colored pixels, depending on the Fuzziness setting.

- To add colors to the selection, click the '+' dropper icon, then click a color in the image in the dialog box.
- To subtract colors from the selection, click the '-' dropper icon, then click in the image in the dialog box.

5 To view the selected pixels, click the Selection option. Gray areas indicate pixels that the Color Range command selects at a reduced opacity. Filters and painting tools affect these areas to a lesser degree than areas that are 100 percent selected. Click OK to apply the selection to the image.

Color Range options

Use this dialog box to select image areas based on color.

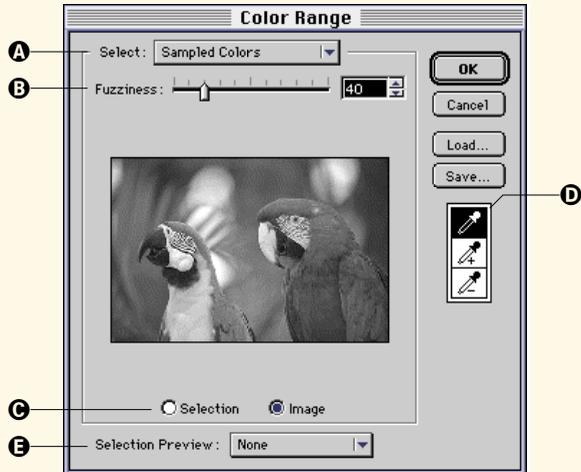
A Select. In the pop-up menu, choose the color (red, green, blue, cyan, magenta, yellow), or tonal range (shadows, midtones, highlights) you want to select.

To select a color interactively by clicking in the preview window, choose Sampled Colors.

B Fuzziness. When using the Sampled Colors option, enter a low value to select a narrow color range; enter a higher value to select a wider range.

C Choose Selection to preview the selection, with white representing selected pixels, in the preview window. Choose Image to see the actual image so you can sample colors with the dropper.

D With Sampled Colors chosen (A), click the dropper in the



preview window to select colors. Use the '+' dropper to add to the selection; use the '-' dropper to subtract from it.

E Selection Preview. Choose an option to preview the selection in the image itself (or choose None for no preview). Grayscale shows the selection as it would appear in a channel,

with white for selected pixels and black showing non-selected areas.

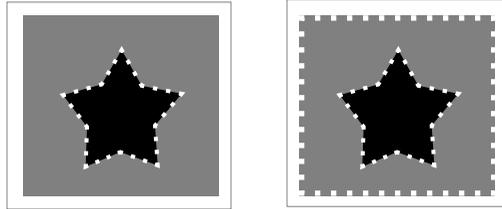
The Matte and Mask options show the original colors in selected areas. In non-selected areas, Black Matte shows black, White matte shows white, and Mask shows transparent red.

Selecting unselected areas

You can use the Inverse command to simultaneously select all pixels not in the current selection while deselecting the current selection.

◆ **To select areas not included in the current selection:**
Choose Select►Inverse in the Image menu.

A moving dashed edge surrounds the black star, a selected area (left). When the selection is inverted, the gray background becomes selected and the star is deselected (right).



Working with image selections

After you make a selection, you can clear it, soften its edges, make it floating, move it, and change its opacity.

✓ Tip

If you want Canvas to recall a selection, be sure to save it before leaving edit mode. See “Saving and loading selections in channels” on page 360.

Clearing and copying a selection

You can replace the pixels in a selection with the current background color by pressing the Delete key, or by choosing Cut in the Edit menu. (The Cut command also transfers the selection to the Clipboard.) Canvas replaces the selected pixels with the color currently displayed in the background color icon. Keep in mind that “deleting” a selection doesn’t leave a hole or transparent area in the paint object.

To place a copy of a selection on the Clipboard without clearing the area in the original image, choose Copy in the Edit menu. When a selection has been placed on the Clipboard, you can paste it into another paint object in edit mode, where it will become a floating selection, or paste it into the document to create a new paint object.

Feathering the edges of a selection

You can feather (soften) the edges of a selection so that it blends more naturally into the original image. You can use the Feather command to soften the hard edge of a selection and spread the selection over a larger area.



✓ Tip

To float a selection and fill behind it with the background color, hold down Option (Mac) or Alt (Windows) and choose Select>Float in the Image menu.

To use the Opacity slider in the Image Channels palette to lighten a floating selection, fill behind the selection with white or a light color.



Dragging a selection floats it and leaves an area filled with the current background color (A).

Remote Move tool



- 1 With a paint object in edit mode, make a selection and choose Select>Feather in the Image menu.
- 2 In the Feather dialog box, enter the number of pixels to feather the selection in the Radius text box. The larger the radius value, the more Canvas softens the selection edge.
- 3 Click OK to feather the selection.

Floating and moving selections

You can move and manipulate a selection without affecting the original image by making it a floating selection.

When a selection is floating, it sits on an invisible plane above the original image. When you type text in an image, or paste an object from the Clipboard, Canvas makes the text or pasted item a floating selection.

Moving a selection that is part of the original image creates a floating selection, but also leaves behind an area filled with the background color.

◆ **To float a copy of a selection:** Make a selection in an image and choose Select>Float in the Image menu.

Deselecting and defloating selections

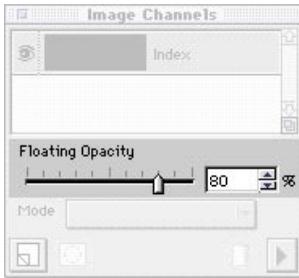
Deselecting a floating selection makes it part of the original image. To deselect a floating selection, press Esc or Enter twice (Mac) or Esc twice (Windows), or choose Select>None in the Image menu.

To make the floating selection part of the image but still retain the selection, you can press Esc or Enter (Mac) or Esc (Windows), or choose Select>Defloat in the Image menu.

Moving selections

To move a selection, you can press the keyboard arrow keys or drag the selection with the Marquee, Lasso, or Wand tools. If a selection is not floating, it becomes floating when you move it.

To keep the pointer from interfering with your view of a small selection, select the Remote Move tool in the Paint Tools toolbar and drag it anywhere in the drawing area. Canvas moves the selection in the direction you move the pointer.



In the Image Channels palette, the Floating Opacity setting affects the transparency of the current floating selection.

Changing the opacity of floating selections

You can change the opacity of a floating selection and make the pixels behind it partially visible. You can also change the transfer mode to produce different effects. *Note:* You cannot make selections partially transparent in Indexed or Black & White image modes.

- 1 With a paint object in edit mode, select part of the image.
- 2 From the background color palette icon in the toolbox, select a color to use behind the floating selection. This color will start to appear when you make the selection transparent.
- 3 Hold down the Option key (Mac) or Alt key (Windows) and choose **Select**►**Float** in the Image menu. Canvas floats the selection and fills behind it with the background color.
- 4 Choose **Show Channels** in the Image menu to open the Image Channels palette. Set the Floating Opacity value to less than 100 percent to make the selection become transparent and reveal the background color behind the selection.
- 5 To change the transfer mode, choose a new mode from the Mode pop-up menu. For more information, see “Using transfer modes with painting tools” on page 313.

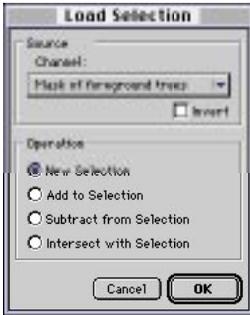
Saving and loading selections in channels

When you have made a selection in an image, you can create an alpha channel from the selection. An alpha channel preserves the shape and opacity of a selection, so you can use it to select the same part of an image again.

You can think of an alpha channel as a stencil or mask for making image selections. And, because alpha channels make precise selections of varying intensities, alpha channels let you control which areas in an image will be affected by painting and filters, and how strongly they will be affected.

When you view an alpha channel, you see a grayscale image. When the channel is made from a selection, it contains white areas representing fully selected pixels, black areas representing unselected pixels, and gray areas representing pixels that are partially selected, with the gray lightness values corresponding to the selection opacity.

For more information on channels, see “Understanding image channels” on page 361.



This section describes how to save a selection in a channel, and how to load a channel to make a selection in an image, using dialog boxes. You can also use shortcuts in the Image Channels palette, as described under “Image Channels palette options” on page 362.

To save a selection in a channel

- 1 With an active selection in an image, choose **Select**►**Save** in the Image menu.
- 2 Choose **New** in the Channel pop-up menu.
- 3 In the Operation area, select **New Channel** and click **OK**.

You can also click the Selection button (☐) in the Image Channels palette to save the current selection in a new channel.

To load a selection from a channel

- 1 With a paint object in edit mode, choose **Select**►**Load** in the Image menu.
- 2 In the Load Selection dialog box, choose a channel name in the Channel pop-up menu. To invert the selection, click **Invert**.
- 3 Choose an option in the Operation area and click **OK**.

Option	Result
New Selection	Removes any current selections and creates a new selection
Add to Selection	Preserves the current selection and selects additional pixels based on the channel
Subtract from Selection	Removes pixels from the current selection based on the channel
Intersect with Selection	Creates a new selection composed of pixels that appear in both the current selection and the channel you are loading

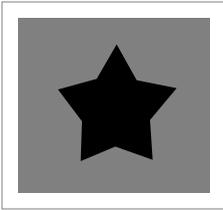
Understanding image channels

Canvas uses up to 24 channels to store information for a digital image. There are two types of channels: color and alpha channels.

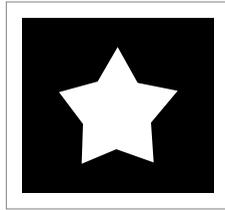
- Color channels store information about the color in an image. The image mode determines the number of color channels: RGB Color images have red, green, and blue color channels, CMYK Color images have cyan, magenta,

yellow, and black channels, and LAB Color images have “A” and “B” color channels and a Lightness channel (“L”).

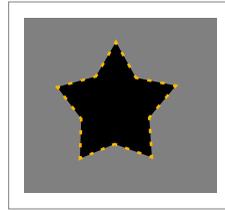
- Alpha channels use grayscale images as “masks” for selections. You can make a selection, save it as an alpha channel, then load it later. By default, black in an alpha channel indicates masked (non-selected) areas, white indicates selected pixels, and gray represents different levels of opacity for selected pixels.



Original image



Alpha channel; white indicates selected area



Alpha channel loaded as selection (in color)



Applied blend affects selected area only

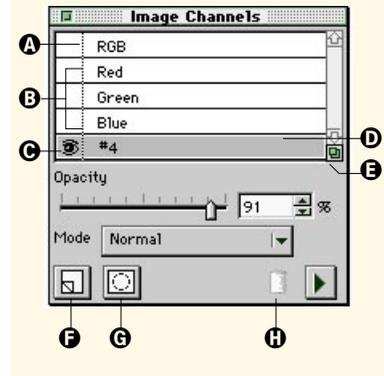
Image Channels palette options

The Image Channels palette displays the channels of an image in edit mode. You can use the palette to create, duplicate, and delete channels, rename channels and change channel options, and load channels as selections.

- A** Composite channel. Select this channel to make all color channels visible and active. This channel is labeled “CMYK” for a CMYK Color image.
- B** Color and alpha channels. Color channels appear above alpha channels.
- C** An eye indicates which channels are visible. Click or drag in the column to make

channels visible.

- D** The active channel is shaded. Image editing affects only the active channel.
 - E** Drag this box to resize the Image Channels window.
 - F** Click to make a new channel with default settings. Drag a channel here to duplicate it.
 - G** Click to save the current selection as a new channel. Drag a channel here to load it.
- To add to the current selection, Shift-drag the channel to the button. To subtract from the current selection, Command-drag (Mac) or Ctrl-drag the channel to the button. To



select the intersection of a channel and the current selection, press Command+Shift (Mac) or Ctrl+Shift (Windows) and drag a channel to the Selection button.

- H** Drag alpha channels to the trash to delete them.

Viewing previews in the Image Channels palette

To view previews in the Image Channels palette, choose Palette Options in the palette's pop-up menu. Click the size of the preview you want to display, or click None. Click OK to close the Palette Options dialog box.

Creating and deleting channels

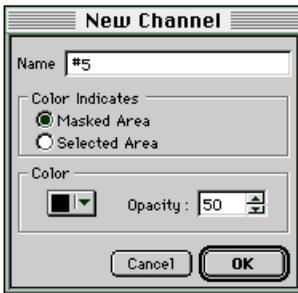


Image Channels pop-up menu

Canvas provides several methods for creating and deleting channels. You can specify more options by using the pop-up menu at the lower-right corner of the Image Channels palette.

To create a new channel

- 1 With an image in edit mode, open the Image Channels palette by choosing Show Channels in the Image menu.
- 2 Press the arrow in the bottom-right corner of the Image Channels palette and choose New Channel in the pop-up menu.
- 3 In the Channel Options dialog box, select options for the new channel. For more information, see “To specify channel options” on page 364.
- 4 After entering the settings you want, click OK.



Deleting alpha channels

Although Canvas can store up to 24 channels in an image, you might want to delete unnecessary ones to save memory and disk space. You cannot delete color channels.

- ◆ **To delete a channel:** With an image in edit mode, choose Show Channels in the Image menu to open the Image Channels palette. Drag the alpha channel you want to delete to the trash can icon at the bottom of the Image Channels palette.

Customizing alpha channels

You can change the name, color indication, and opacity of an alpha channel in the Channel Options dialog box. By default, Canvas numbers alpha channels, sets them at 50% opacity, and assigns a color to masked areas.

Note: Canvas provides the color and opacity settings in the Channel Options dialog box as visual aids only. These settings do not affect the original image or channel.



To specify channel options

- 1 With a paint object in edit mode, choose Show Channels in the Image menu to open the Image Channels palette.
- 2 Click an alpha channel and select Channel Options in the pop-up menu, or double-click the channel you want to edit to open the Channel Options dialog box.
- 3 To rename the channel, type a new name in the Name text box.
- 4 The options in the Color Indicates area control whether white or black pixels in the channel will select pixels in the image when you load the channel.
 - If you want the white pixels in the channel to indicate selected pixels, choose Masked Area.
 - If you choose Selected Area, the normal operation of the channel will be inverted, so that black pixels in the channel will select pixels when the channel is loaded. If you use this option, keep in mind that the channel will make selections that are the inverse of normal channel selections.
- 5 To change the mask tint color for the channel, select a color from the Color pop-up menu. Canvas displays the tint when an alpha channel and at least one other channel are visible. To change the opacity of the tint color, enter a value from 1 to 100% in the Opacity text box.
- 6 After entering the settings you want, click OK.

Activating channels



All channels visible. Only the active channel "Red" will be affected by editing.

To edit a channel, click the channel name in the Image Channels palette to make it active. Canvas uses shading to indicate that a channel is active. Painting tools and filters affect active channels only.

You can make more than one channel active by Shift-clicking the names of the channels in the palette. If you want to make a channel visible but not active, click the left column until an eye icon appears. You can also make more than one channel visible by dragging in this column. See "Image Channels palette options" on page 362 for more information.

To make all color channels in an image both visible and active, click the composite channel in the Image Channels palette. Canvas always lists the composite channel first.

Editing an alpha channel selection mask



Canvas displays a shaded mask when an alpha channel is active and the composite channel is also visible.

You can apply painting tools, filters, and effects to the image in an alpha channel. By editing the image, you can adjust what the channel will select when you load it as a selection.

- 1 With an image in edit mode, choose Show Channels in the Image menu.
- 2 Create a new channel to use as a selection mask by doing one of the following:
 - If you have a selection in the image that you want to customize by editing in a channel, use the Save command to create a channel from the selection; see “To save a selection in a channel,” page 361.
 - To start with a “blank” alpha channel, use the New Channel command. Be sure to choose the Masked Area option under Color Indicates in the New Channel dialog box; see “To create a new channel,” page 363.
- 3 In the Image Channels palette, click the new channel to activate it. The channel appears shaded in the palette and the image changes to show only the channel. Now click in the left column of the first (composite) channel. The original image appears with a transparent colored “mask” on the image. The color mask indicates the areas that will be masked — not selected — by the channel.
- 4 Use painting tools or filters to edit in the image; see “Channel-editing with painting tools” on page 367 for details. The changes you make affect only the active channel selection mask.
- 5 To make a selection with the channel, load the channel by choosing Select►Load in the Image menu. Choose the channel name in the pop-up menu and then click OK.

Using a channel mask to make areas transparent

A paint object is an opaque rectangular area, and the image it contains will block any other objects placed behind it. However, Canvas lets you use a special channel mask to make parts of the image appear to be transparent, as if they had been cut out.

In a channel used for this type of masking, pixels that are 50% black or darker (lightness level of 127 or less) designate the areas that will be masked, or made to appear transparent, in the paint object. You can use painting tools and commands in this channel to change the

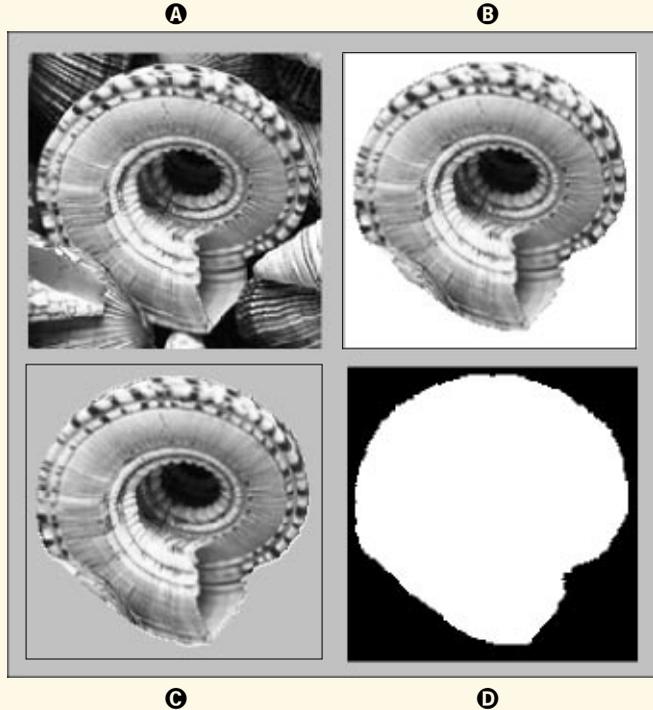
areas that will be masked. By adding black or white pixels, you can increase or decrease the transparent area.

Unlike alpha channels, in the channel mask all pixels are treated as either black or white; gray pixels do not indicate partial selection. Therefore, the mask created by the channel is a hard-edged mask.

Hiding the background with a channel mask

To isolate a main subject, like the shell in this photograph (A), you can't just use a white background. All pixels in an image, including white ones, block out any objects appearing behind the image (B).

When you want to achieve a transparent effect within an image (C), you can create a channel mask (D) lets the image appear through white areas in the channel, and hides parts of the image where there are black pixels in the channel.



Creating a channel mask

Canvas can create a channel mask when you rasterize a vector object (except a rectangular object) or text. To tell Canvas to create the mask, select the Create Mask option in the Render dialog box. For more information on rendering objects, see “Creating images from objects and text” on page 307. The channel mask Canvas creates will have black pixels corresponding to blank areas in or around the original objects.

When you make a new paint object by pasting a non-rectangular selection copied from an image, Canvas automatically makes a channel mask to hide white pixels surrounding the selection.

Using an existing channel as a channel mask

In the Image Channels palette, you can designate an existing channel to be a channel mask for a paint object.

- 1 In the pop-up menu in the Image Channels palette, choose Channel Mask. The Channel Mask dialog box appears.
 - 2 In the Channel Mask dialog box, choose the channel you want to use as a mask in the pop-up menu and click OK.
- ◆ **To remove a mask from an image:** With a paint object in edit mode, choose Channel Mask from the pop-up menu in the Image Channels palette. In the dialog box, select “None” and click OK.

Channel-editing with painting tools

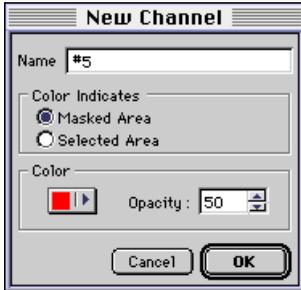
You can edit a channel with painting tools, including the Pencil tool, brushes, Blur and Sharpen tools, and so on. Gray areas in an alpha channel select pixels at a reduced opacity, so using tools like the Airbrush and Blend let you create fading effects, such as the vignette.



Original



Vignette effect



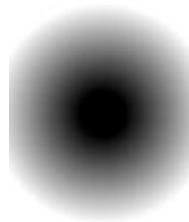
New Channel dialog box



Blend options dialog box

Creating a vignette using an alpha channel

- 1 With a paint object in edit mode, choose Show Channels in the Image menu to open the Image Channels palette.
- 2 Create a new channel by selecting New Channel from the pop-up menu in the lower-right corner of the Image Channels palette.
- 3 In the New Channel dialog box, choose Masked Areas in the Color Indicates area, and then click OK.
- 4 Click the new channel in the Image Channels palette to make it active. The solid black channel is displayed in the document.
- 5 In the toolbox, select black as the foreground color and white as the background color.
- 6 Double-click the Blend tool in the Paint Tools toolbar to open the Blend dialog box.
- 7 Choose Radial in the Style area. Type 50 in the Skew text box and 20 in the Offset text box. In the Behavior pop-up menu, choose Foreground to Background.
- 8 Drag the pointer from the center of the image outward to create a radial blend in the alpha channel.
- 9 Click the composite channel in the Image Channels palette to make it active.
- 10 Choose Select►Load in the Image menu, select the new channel in the pop-up menu, and click OK.



Completed alpha channel



Alpha channel loaded as selection (highlighted)

- 11 Press Delete to fill the selection with the background color and complete the vignette effect.

IMAGE ADJUSTMENT AND CORRECTION

You can adjust images in Canvas using built-in filters and third-party plug-ins. For example, you can use the Levels filter to adjust image highlights and shadows, and sharpen scanned photos with the Unsharp Mask filter.

This chapter describes the commands you can use to adjust image color and brightness. It also describes commands for sharpening, softening, and refining images.

◆ **Putting paint objects in edit mode:** When you want to use image-adjustment commands, you first place a paint object in edit mode. You can do this by double-clicking a paint object with the Selection tool, or clicking on an image with any painting tool.

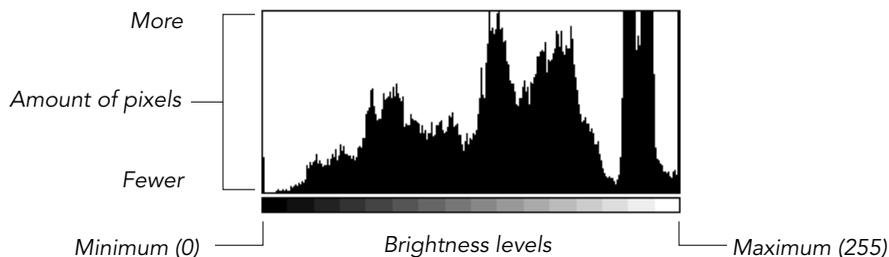
When you select a paint object, Canvas displays selection handles and a bounding box around the object. When you put a paint object in edit mode, Canvas displays crop marks at the object's corners.

Working with image-adjustment dialog boxes

Many dialog boxes for Canvas commands include histograms and preview options to help you achieve the effect you want.

Understanding histograms

A histogram plots the relative number of pixels in each brightness level in an image.



✓ Tip (Mac OS only)

When working with large images, you can improve speed by using video LUT animation instead of previews; see “Painting preferences” on page 88.

Consolidating colors

In the histogram above, shorter bars on the left indicate that the image doesn’t contain large areas of very dark pixels. Higher bars toward the right of the graph show that the image does contain large areas of medium and very bright pixels.

◆ **To view an image’s histogram at any time:** With an image in edit mode, choose Filter►View►Histogram.

Using the Preview option

Most dialog boxes for image-adjustment commands include a Preview check box. Turn on the Preview option to see how settings affect the image.

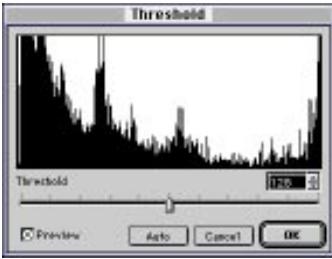
The Threshold and Posterize commands let you consolidate color values in an image or selection. Besides producing interesting effects with these commands, you can use them in alpha channels to help isolate areas within an image.

These commands operate on paint objects that are in edit mode. If you select an area within an image, Canvas applies the adjustment only to that area. Otherwise, Canvas adjusts the entire image.

Setting a brightness threshold

You can use the Threshold command to convert any image to black and white. The Threshold command compares each pixel’s brightness value to a threshold value that you set. It changes brighter pixels to white and darker pixels to black. The threshold setting is based on a scale of brightness values from 0 (black) to 255 (white).

For example, if you set a threshold value of 128, pixels that are brighter than medium gray become white, while pixels darker than medium gray become black.



Threshold dialog box

To map an image to black and white

- 1 With a paint object in edit mode, choose Adjust►Threshold in the Image menu.
- 2 In the Threshold dialog box, enter the threshold value by dragging the slider or typing a number in the text box. If you want Canvas to convert half the pixels to black and half to white, click Auto.
- 3 After entering the setting you want, click OK.

To isolate selections, you can apply the Threshold command in conjunction with the High Pass filter to an image in an alpha channel. See “Isolating areas using the High Pass filter” on page 394.

Creating high-contrast ‘posterized’ images

You can condense the brightness variations in an image with the Posterize command. If you apply the Posterize command to a photograph, it creates a high-contrast image by compressing hundreds of brightness levels into only a few. You set the number of brightness levels you want to retain, and Canvas reduces each color channel to that number of values.



Original RGB image



Posterize 8 levels



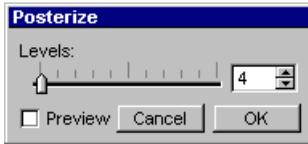
Posterize 4 levels



Posterize 2 levels

The Posterize command’s effect depends on the mode of the image you posterize.

For example, if you apply the Posterize command with a setting of 2 levels to a grayscale-mode image, the image becomes black and white. If you apply the same setting to an RGB-mode image (even if it contains only grays), the command converts each pixel’s red, green, and blue value to either zero or full color, reducing the image to eight colors — red, green, blue, red-green, red-blue, blue-green, black, and white.



Posterize dialog box

To posterize an image

- 1 With a paint object in edit mode, choose Adjust►Posterize in the Image Menu.
- 2 Enter a level from 2 to 255. Higher numbers produce subtle effects. Lower numbers produce high-contrast images.
- 3 After you enter the posterization setting, click OK.

Changing color and contrast

You can use the Invert, Desaturate, and Brightness/Contrast commands to create special effects and correct lightness levels in images. These commands apply changes equally to all color values.

To apply these commands, first put a paint object in edit mode. If you select an area of an image, Canvas applies the command to only that area. Otherwise, Canvas applies the command to the entire image.

Inverting colors in images

You can use the Invert command to reverse the colors in an image, as in a photographic negative. The command converts each pixel's color into its opposite hue in the color spectrum. It does this by inverting the brightness value of each pixel in each color channel.

For example, if a pixel is pure red, its brightness levels are 255, 0, 0 in RGB mode. When inverted, this pixel's brightness values become 0, 255, 255, changing it to pure blue-green, its opposite in hue.

Invert filter examples



The Invert command can be particularly useful in channel editing, as colored pixels can denote either masked or selected areas.

- ◆ **To invert an image:** With a paint object in edit mode, choose Adjust►Invert in the Image menu.

Desaturating image colors

You can use the Desaturate command to completely remove color from images, while retaining the relative brightness levels of shadows, midtones, and highlights. The command converts an entire image to shades of gray without changing the image mode.

◆ **To desaturate an image:** With a paint object in edit mode, choose Adjust►Desaturate in the Image menu.

Adjusting brightness and contrast

You can adjust the brightness and contrast of an entire image or specific channels with the Brightness/Contrast command. Brightness refers to the lightness of an image. Contrast is the difference in brightness between two pixels.

Because the Brightness/Contrast command adjusts all pixels equally, you should avoid using it to lighten an image that appears too dark, because the image can lose shadow detail. To preserve shadows or highlights when adjusting the brightness of an image, you can use the Levels or Curves commands. See “Using the Levels command” on page 374 and “Adjusting brightness curves” on page 377.

To use the Brightness/Contrast command

- 1 With a paint object in edit mode, choose Adjust►Brightness/Contrast in the Image menu.
- 2 Enter a Brightness value from -100 to 100. Higher values can wash out midtones and shadows. Lower values can dull highlights.
- 3 Enter a Contrast value from -100 to 100. Increasing contrast moves the color values of pixels to the extremes of the brightness spectrum. Decreasing contrast moves color values toward medium gray.
- 4 After entering the settings you want, click OK.



Brightness/Contrast dialog box

Targeting shadows, midtones, and highlights

You can use the Levels and Color Balance commands to adjust ranges of colors. By adjusting the shadows, midtones, and highlights separately, you can correct color and brightness and maintain the original image integrity.

Adjusting color balance

The Color Balance command lets you adjust color in shadows, midtones, and highlights. You can use it with images in CMYK, RGB, or LAB modes.

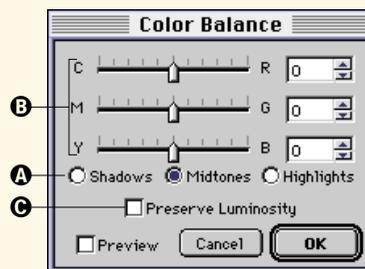
With a paint object in edit mode, choose Adjust►Color Balance in the Image menu. The dialog box options depend on the image mode.

- A** Click Shadows, Midtones, or Highlights to select the tonal range you want to adjust. You can set the color levels independently for each tonal range.
- B** Drag a slider toward a color label to increase the amount of

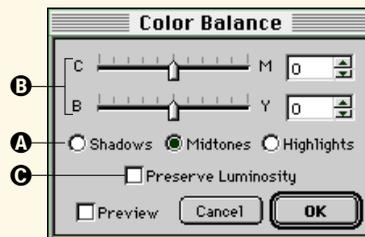
that color. The letters indicate the primary color values: Cyan, Red, Magenta, Green, Yellow, and Blue.

When you increase the amount of a color, you also reduce its inverse, which is the color labeled at the other end of the slider.

- C** Turn on Preserve Luminosity to maintain the overall brightness of the image. This prevents darker colors from replacing highlights, or pastels from washing out shadows.



CMYK Color or RGB Color mode



LAB Color mode

Using the Levels command

You can adjust the brightness of shadows, highlights, or midtones by using the Levels command. Brightness values range from 0 (zero intensity) to 255 (full intensity). For colored pixels, brightness is the brightness value in each color channel.

To brighten highlights

You can vitalize real-life images by brightening highlights.

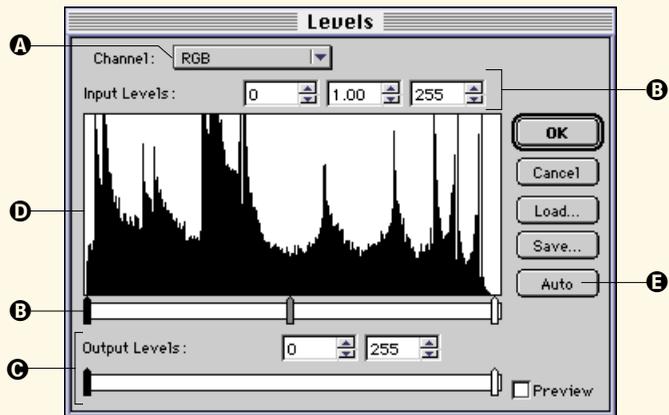
- 1** With a paint object in edit mode, choose Adjust►Levels in the Image menu.
- 2** Select a channel or combination of channels in the pop-up menu. The Levels command will affect only the specified channels.

- 3 Enter a positive number less than 255 in the right Input Levels text box or drag the white slider located under the histogram. Canvas assigns the maximum output level to all pixels on the right of the slider.
- 4 After entering the settings you want, click OK.

Levels dialog box

You can use the Levels dialog box to control different aspects of brightness levels.

- A Choose an individual color channel or the composite channel.
- B Enter numbers in the text boxes or drag the slider under the histogram to set the minimum input level, midtone ratio, and maximum input level.
- C Enter numbers in the text boxes or drag the sliders to set the minimum and maximum output levels.
- D The histogram graphs brightness levels for the selected channel.
- E Click Auto for Canvas to map the darkest values in the selection to black and the lightest value to white.



To lighten shadows

You can lighten shadows to prevent ink from oversaturating a printed medium.

- 1 With a paint object in edit mode, choose Adjust>Levels in the Image menu.
- 2 Select a channel or combination of channels in the pop-up menu. The Levels command will affect only the specified channels.

3 Enter a number greater than zero in the left Output Levels text box or drag the black slider under Output Levels to increase the minimum output level. This value becomes the darkest value allowed in the image.

4 After entering the settings you want, click OK.

To darken highlights

You can darken the highlights on one particular color channel to bring brighter colors back into the printable color range.

1 With a paint object in edit mode, choose Adjust►Levels in the Image menu.

2 Select a channel or combination of channels in the pop-up menu. The Levels command will affect only the specified channels.

3 Enter a positive number less than 255 in the right Output Levels text box or drag the white slider under Output Levels to decrease the maximum output level. This value becomes the brightest value allowed in the image.

4 After entering the settings you want, click OK.

To deepen shadows

You can create more contrast in an image by making shadows darker.

1 With a paint object in edit mode, choose Adjust►Levels in the Image menu.

2 Select a channel or combination of channels in the pop-up menu. The Levels command will affect only the specified channels.

3 Enter a number greater than zero in the left Input Levels text box or drag the black slider under the histogram. Canvas assigns the minimum output level to all pixels on the left of the slider.

4 After entering the settings you want, click OK.

To lighten or darken middle tones

1 With a paint object in edit mode, choose Adjust►Levels in the Image menu.

2 Select a channel or combination of channels in the pop-up menu. The Levels command will affect only the specified channels.

3 Enter a value in the center Input Levels text box or drag the gray slider under the histogram to the left:

- To lighten midtones, enter a value from 1.01 to 9.99 or drag the slider to the left. All pixels on the right of the slider will be brighter than medium gray.
- To darken midtones, enter a value from 0.1 to 1.00 or drag the slider to the right. All pixels on the left of the slider will be darker than medium gray.

4 After entering the settings you want, click OK.

Saving and loading Levels settings

You can save Levels settings on disk to use again. For example, after correcting a scanned photo, you can save the settings and use them to correct other images scanned from the same source.

◆ **To save Levels settings:** In the Levels dialog box, click Save. Type a name for the settings file, select a location, and click Save.

◆ **To load previously-saved Levels:** In the Levels dialog box, click Load. A directory dialog box opens. Locate the settings file you want to open, and click Open.

Changing specific color values

You can adjust brightness and color with the Curves, Hue/Saturation, and Color Equalization commands. These commands let you fine-tune any color value and make sure all colors in an image fall within the color range of an output device.

You can apply these commands to a paint object in edit mode. If you select part of an image, Canvas adjusts only the selected area. Otherwise, Canvas applies the command to the entire image.

Adjusting brightness curves

You can adjust the tonal range of an image with the Curves command. Unlike the Levels command, which limits you to highlight, midtone, and shadow adjustments, curves let you map up to 19 tonal ranges to a specific brightness level. Curves give you much more control than other methods over subtle contrast and brightness qualities of an image.

The Curves dialog box uses a line graph to map current brightness values to ones you specify. For RGB images, the default scale of brightness values ranges from 0 to 255 (maximum brightness); for CMYK images, the default scale ranges from 0 percent (maximum

brightness) to 100 percent. You can switch the scales for an image, depending on which scale is more intuitive to you.

A typical setting is a gentle S-curve (or inverted S-curve, depending on the scale you use) which adds contrast to an image without appearing too harsh. For wild effects, try using a rounded M-shape curve to create dramatic contrast.

To adjust brightness curves

- 1 With a paint object in edit mode, choose Adjust>Curves in the Image menu.
- 2 In the Channel pop-up menu, choose the channel(s) you want to adjust. To adjust curves for specific color channels at the same time, Shift-select the channels in the Image Channels palette before choosing the Curves command.

Curves dialog box

The graph shows how Canvas maps input brightness values to output values. Turn on Preview so you can see the effect on the image.

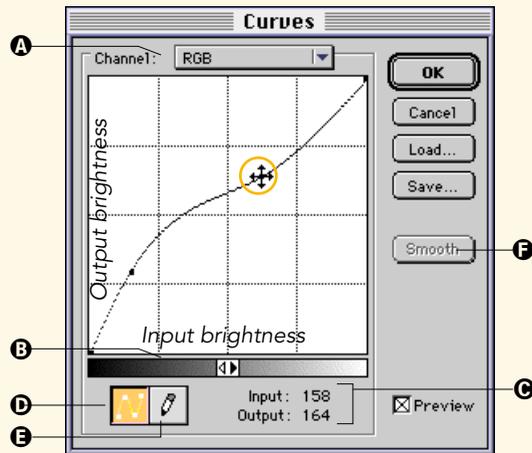
- A** Choose channels to adjust.
- B** The grayscale ramp below the graph shows the input tonal range. By default, RGB images range from 0-255 (dark to light) from left to right. CMYK images range from 0-100 percent (light to dark). You can reverse this ramp and the curve at any time by clicking the ramp.
- C** Brightness values for the pointer's position (circled). Here, pixels of 158 brightness are lightened to 164.
- D** Click this icon and drag a

point on the curve to reshape the curve. Click the curve to add up to 19 control points. Drag points off the curve to delete them.

- E** To draw a disconnected

segment, click this icon and drag in the graph.

- F** With the pencil icon **D** selected, click to smooth the curve.



✓ Tip

To completely redraw the curve, or to create sharp changes in brightness for a tonal range, click the pencil button at the bottom-left and draw a new curve or segment.

3 To change the shape of the existing curve, make sure the curve button at the bottom-left is selected.

4 Turn on Preview so you can see the changes in the image.

5 Click any points on the curve that you want to stay the same; drag points on the curve that you want to change. For example, to keep the midtones the same while you adjust other tonal ranges, click the center of the curve, then drag other areas of the curve. To adjust midtones without affecting highlights and shadows, click the quarter and three-quarter points of the curve, and drag the middle.

- To brighten a tonal range, drag the curve up.
- To darken a tonal range, drag the curve down.

6 If you draw disjointed segments with the pencil, you can click Smooth to create one continuous curve.

7 Click OK to apply the current settings to the image.

Saving and loading Curves dialog box settings

You can save Curves dialog box settings on disk to use again. For example, after correcting the brightness curve for a particular Photo CD image, you can save these settings and later apply them to other images from the same source.

◆ **To save Curves settings:** In the Curves dialog box, click Save. In the directory dialog box, type a name for the settings file, select a location, and click Save.

◆ **To load Curves settings:** In the Curves dialog box, click Load. In the directory dialog box, locate the settings file and click Open.

Modifying colors

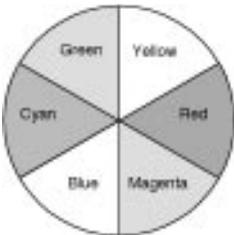
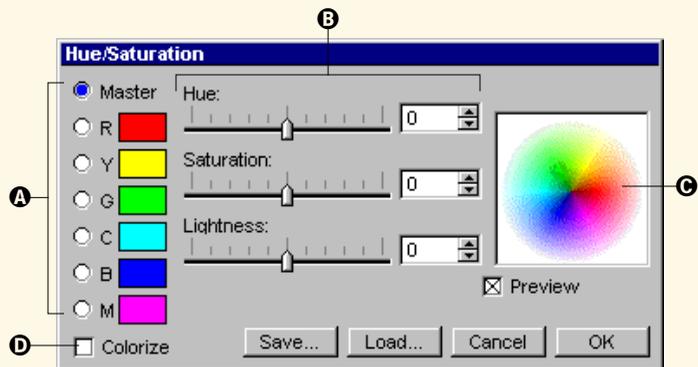
You can modify the tint and purity of specific colors with the Hue/Saturation command. In terms of image editing, saturation refers to the amount of gray in colors.

The Hue/Saturation dialog box varies slightly depending on the color mode. For RGB and CMYK images, you can modify red, yellow, green, cyan, blue, or magenta color ranges. For LAB mode images, you can modify blue, magenta, yellow, or green color ranges.

The Hue/Saturation command is available when you work with CMYK, RGB, or LAB mode images. Before choosing the Hue/Saturation command, make the composite channel active. For more information, see “Activating channels” on page 364.

Hue/Saturation dialog box

- A** Choose the color to adjust. Click Master to affect all colors.
- B** Enter numbers in the text boxes or drag the sliders to adjust hue, saturation, and lightness.
- C** The color wheel illustrates changes made in the settings.
- D** Turn on to add the same hue to the entire image.



Color wheel

To adjust the hue of a color range

- 1** With a paint object in edit mode, choose **Adjust**►**Hue/Saturation** in the Image menu.
- 2** On the left side of the dialog box, click the color range you want to adjust, or click Master to affect all colors equally.
- 3** To change the selected color, enter the amount of the color shift, from -180 to 180 degrees, in the Hue text box. Negative values indicate a counter-clockwise shift around the color wheel; positive values indicate a clockwise shift. For example, with the Master option selected, setting Hue to 60 changes red to magenta, magenta to blue, blue to cyan, and so on.
- 4** To apply the current settings to the image, click OK.

To adjust the saturation of a color range

- 1** With a paint object in edit mode, choose **Adjust**►**Hue/Saturation** in the Image menu.
- 2** Click the option button of the color you want to adjust, or click the Master option button to affect all colors equally.
- 3** Enter a value from -100 to 100 in the Saturation text box or drag the slider. Positive values decrease the amount of gray in the selected colors. Negative values increase the amount of gray.
- 4** To apply the current settings to the image, click OK.

To adjust the brightness of a color range

- 1** With a paint object in edit mode, choose Adjust►Hue/Saturation in the Image menu.
- 2** Choose a specific color range or choose Master to equally affect all colors.
- 3** Enter a value from -100 to 100 in the Lightness text box or drag the slider. Positive values increase the amount of white in the color range. Negative values decrease the amount of white.
- 4** To apply the current settings to the image, click OK.

For more control of brightness adjustments, use the Levels or Curves command. For more information, see “Using the Levels command” on page 374 and “Adjusting brightness curves” on page 377.

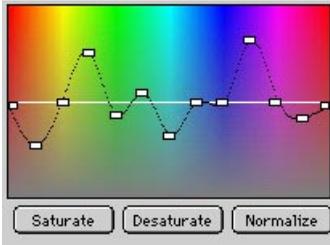
To colorize an image

You can use the Colorize option in the Hue/Saturation dialog box to apply the same color to an entire image.

- 1** With a paint object in edit mode, choose Adjust►Hue/Saturation in the Image menu.
- 2** Choose a specific color range or choose Master to equally affect all colors.
- 3** Turn on the Colorize option. This applies the same hue and saturation to all pixels that are not 100 percent black or white. The Colorize option does not affect the lightness levels of pixels.
- 4** Enter a value from -120 to 120 degrees in the Hue text box. With the Colorize option on, a Hue value of zero indicates red. Enter positive values to select colors located clockwise around the color wheel at the specified number of degrees. Enter negative values to select colors located counter-clockwise around the color wheel. For example, changing the hue to 120 creates a “greenscale” version of the original image.
- 5** Enter a value in the Saturation text box or drag the slider.
- 6** After entering the settings you want, click OK.

Adjusting saturation

You can graphically adjust the saturation of different color ranges with the Color Equalization command. This command lets you add or remove gray from various color ranges.



Color Equalization window

To use the Color Equalization command

- 1 With a paint object in edit mode, choose **Adjust**►**Color Equalization** in the Image menu. Turn on **Preview** to see the effect of the settings on the image.
- 2 Drag the bars in the color equalizer window to change the saturation of the various color ranges:
 - To increase the saturation of a color range, drag the bar toward the top of the window.
 - To decrease the saturation of a color range, drag toward the bottom of the window.
- 3 To increase the saturation of all colors, click **Saturate**.
- 4 To decrease the saturation of all colors, click **Desaturate**.
- 5 Click **Normalize** to return all colors to their original saturation.
- 6 When you finish adjusting saturation settings, click **OK**.

Using blur, noise, and other filters

The **Blur**, **Sharpen**, **Noise**, and **Video** filters change the contrast between pixels in specific areas of an image. You can use them to correct imperfect scanned images and to refocus scaled images.

You can apply these filters to paint objects in edit mode. If you select part of an image, Canvas applies the filter only to the selection. Otherwise, Canvas applies the filter to the entire image.

Using blur filters

All blur filters soften images by decreasing the contrast between neighboring pixels. The **Blur** filter only slightly modifies an image. The **Blur More** filter is about four times stronger than the **Blur** filter and, therefore, creates a more noticeable effect.

- ◆ **To blur an image:** With a paint object in edit mode, choose **Filter>Blur** and choose a filter from the Blur submenu.

Text was converted to an image, then the blur filter applied.

Original

SOFTEN

Blur applied 10 times

SOFTEN

Blur More applied 10 times

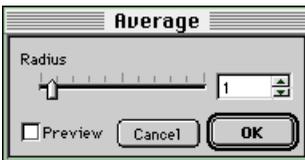
SOFTEN

Average Blur
Radius = 6 pixels

Gaussian Blur
Radius = 6 pixels



Gaussian Blur dialog box



Average Blur dialog box

Comparing Gaussian and Average blurs

You can create a softening effect by using the Gaussian Blur or Average blur filters. Their effects are similar, but the Gaussian Blur filter does not affect an image as strongly as the Average blur filter.

The Gaussian Blur filter changes the color value of each pixel by applying a weighted average based on the color values of pixels within a specified distance. Color values at the edge of the specified distance influence the final color value less than closer pixels.

The Average filter determines the new color value for each pixel by equally averaging all color values within the specified radius.

To apply a Gaussian Blur or Average blur

- 1 With a paint object in edit mode, choose **Filter>Blur>Gaussian Blur** or **Filter>Blur>Average** in the Image menu.
- 2 Specify a radius value from 0.1 to 250.0 in the Gaussian Blur dialog box, or 1 to 16 in the Average dialog box. Smaller radius values produce more subtle effects than larger ones.

3 After entering the setting you want, click OK.

Depending on the size of the radius, applying a Gaussian or Average blur can take longer than other Blur filters.

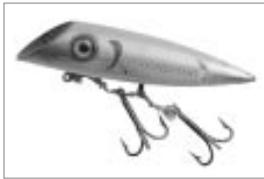
Using filters to sharpen images

All sharpen filters increase the contrast between adjacent pixels, which can make an image appear more distinct. The Sharpen filter modifies an image only slightly. The effect of the Sharpen More filter is about four times stronger than the Sharpen filter.

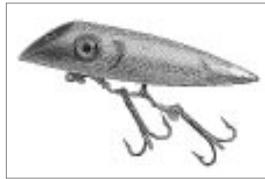
You can use the Sharpen Edges filter to make edges more distinct. This filter affects only high-contrast areas, leaving the rest of the image untouched.

The Unsharp Mask filter provides additional control over the sharpening effect. When you use the Unsharp Mask filter, you can specify the amount, radius, and threshold of the sharpening effect.

◆ **To sharpen an image:** With a paint object in edit mode, choose Filter►Sharpen. Choose a filter from the Sharpen submenu.



Original



Sharpen More
applied 5 times



Sharpen Edges
applied 8 times



Unsharp Mask
Amount = 113
Radius = 4.5
Threshold = 0

✓ Tip

Although the Sharpen and Blur filters have opposite effects, they do not negate each other. To reverse the effects of a Sharpen filter, choose Undo in the Edit menu.



Unsharp Mask dialog box

To apply the Unsharp Mask filter

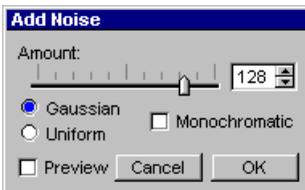
- 1 With a paint object in edit mode, choose Filter►Sharpen►Unsharp Mask in the Image menu.
- 2 Enter a number from 1 to 500 percent in the Amount text box. Enter a number less than 100 percent to sharpen the image slightly; enter a higher number for more dramatic sharpening.
- 3 Enter a number from 0.1 to 250.0 in the Radius text box. This specifies how far from the filter will look to determine the new color value for the original pixel. Small Radius values focus the sharpening effect on high-contrast edges. Greater values spread the sharpening effect over a larger area.
- 4 Enter a number from 0 to 255 in the Threshold text box. Enter 0 to filter all pixels. Enter a larger value to filter only high-contrast edges.
- 5 After entering the settings you want, click OK.

Adding and removing noise

In images, “noise” refers to randomly-colored pixels. Noise can be good or a bad. For example, you can apply noise to computer-generated graphics to make them appear more photographic. You can also use a filter that removes noise to minimize the appearance of tiny scratches or other artifacts present in the source material or introduced during digitizing.

To add noise to selections

- 1 With a paint object in edit mode, choose Filters►Noise►Add Noise in the Image menu.
- 2 Enter an amount from 1 to 999 to specify how far the color of the noise can vary from the original color.
- 3 Choose the Uniform or Gaussian distribution option:
 - Choose Uniform to apply colors randomly picked within the Amount specified. Canvas evenly distributes the color of the noise across a range of colors. This option gives the smoothest effect.
 - If you want the noise to favor lighter and darker colors within the specified range, choose the Gaussian option. This option creates a more pronounced effect than Uniform.

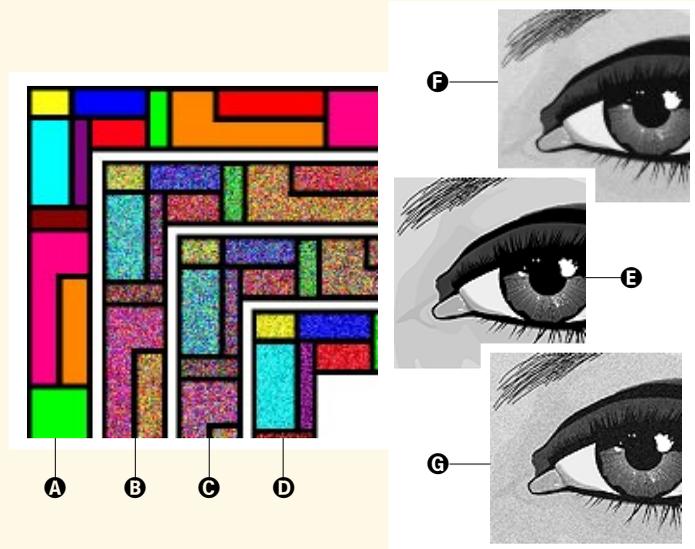


Add Noise dialog box

- 4 If you want all added noise to be different brightness levels of the original color, turn on the Monochromatic option.
- 5 After entering the settings you want, click OK.

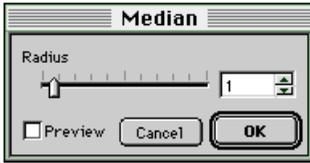
Comparing noise

- A** Original image
- B** Uniform
Amount = 302
- C** Gaussian
Amount = 302
- D** Gaussian
Amount = 80
Monochromatic
- E** Original image
- F** Uniform
Amount = 52
(The white of the eye was not filtered.)
- G** Gaussian
Amount = 52
(The white of the eye was not filtered.)



Removing noise from selections

You can remove noise from an image or selection using the Median, Despeckle, or Dust & Scratches filters. The Median filter removes noise by averaging the color of pixels. The Despeckle and Dust & Scratches filters remove noise by selectively blurring regions of the selection.



Median dialog box

To use the Median filter

On a pixel-by-pixel basis, the Median filter applies the median color value of all pixels within the specified radius. Although the filter ignores extreme values in its computations, higher radius values can still wash out an image.

- 1 With a paint object in edit mode, choose Filter>Noise>Median in the Image menu.
- 2 Type a value from 1 to 16 in the Radius text box, or drag the slider. Smaller radius values produce subtler effects.
- 3 After entering the setting you want, click OK.

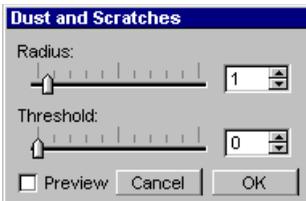
To use the Despeckle filter

The Despeckle filter creates a smoothing effect by finding the higher-contrast edges in an image and then slightly blurring the other areas.

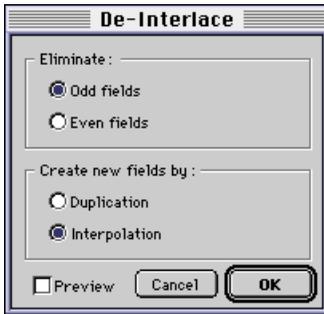
◆ **To apply the Despeckle filter:** With a paint object in edit mode, choose Filter>Noise>Despeckle in the Image menu.

To reduce dust and scratch marks from scans

- 1 With a paint object in edit mode, choose Filter>Noise>Dust & Scratches in the Image menu.
- 2 Enter a value from 1 to 16 in the Radius text box. Smaller radius values produce a subtler effect than larger ones.
- 3 Type a value from 0 to 255 in the Threshold text box. Higher values make the filter less sensitive to contrast between pixels.
- 4 After entering the settings you want, click OK.



Dust and Scratches dialog box



De-interlace dialog box

Smoothing video images

Because video images contain two interlaced pictures, you can sometimes see a slight banding effect in images acquired from video-recording devices. You can correct this in Canvas by using the De-Interlace filter and then applying the Unsharp Mask filter.

To smooth video images

- 1 With a paint object in edit mode, choose **Filters**►**Video**►**De-Interlace** in the Image menu.
- 2 Click **Odd fields** or **Even fields** to select bands to eliminate.
- 3 Choose a replacement method for the eliminated pixels:
 - Click **Duplication** to fill the area by inserting a copy of an adjacent band.
 - Click **Interpolation** to fill the area by inserting intermediate color values based on the color values of neighboring pixels. This option creates a smoother, more accurate fill than **Duplication**.
- 4 After entering the settings you want, click **OK**.

IMAGE FILTERS AND EFFECTS

Canvas provides filters you can use to transform images with artistic effects. You can also correct selections with subtle modifications and merge image channels for photo montages and graphic designs. You can apply the effects described in this chapter to entire images, specific selections, or individual image channels.

This chapter explains how to use the filters in the following sub-menus in the Image menu:

Render You can use the Render filters to paint clouds and color spectrums in an image.

Stylize You can use the Stylize filters to emboss, solarize, and trace the contours of an image.

Other With the filters in this submenu, you can offset selections, accentuate high-contrast edges, and resize the lighter areas of an image. You can also create custom filters to design your own effects.

Calculate You can combine image channels to adjust the shadows and highlights or create effects such as type embossed in an image.

Putting paint objects in edit mode

Before you can apply filters to an image, you must place it in edit mode. Crop marks appear at the corners of the image when it is in edit mode.

Selected paint object



Paint object in edit mode



- ◆ **To put a paint object in edit mode, do one of the following:**
 - Double-click the object with a selection tool.
 - Select a painting tool in the Paint toolbar. Point to the image you want to edit. Click the image when the pointer becomes a .

Applying effect filters

You can use the Render, Stylize, and Offset filters to transform images. The filters in the Render submenu apply forms or textures to an image. The Stylize filters apply a conceptual effect to an image. Stylize filters include Emboss, Trace Contour, and Solarize. The Offset filter shifts an image.

Rendering clouds

You can apply texture to areas in an image, such as skies or walls, by applying the Clouds filter. The Clouds filter renders soft swirls of color using the foreground and background colors.

Note: The Clouds filter completely replaces the original image or selection.

- ◆ **To apply a swirl of color to an image:** With a paint object in edit mode, choose Filter>Render>Clouds in the Image menu.

To render translucent clouds

You can use alpha channels to render translucent clouds.

- 1 With a paint object in edit mode, choose Select All in the Edit menu and then choose Copy in the Edit menu to copy the image to the Clipboard.
- 2 Choose Channels in the Image menu to open the Channels palette and choose New Channel in the palette options pop-up menu.
- 3 Click the new channel in the Channels palette to make it active and choose Paste in the Edit menu to paste the image.
- 4 In the areas where you want clouds to replace the original image, apply white using the Paintbrush or Eraser. In areas where you want a translucent effect, apply gray. The darker the shade, the less the clouds will obscure the original image.
- 5 In the Channels palette, click the first item listed to make the composite active.



Image with translucent clouds



Completed alpha channel

- 6 Choose **Select**►**Load** in the **Image** menu and select the channel you edited in step four.
- 7 Choose **Filter**►**Render**►**Clouds** in the **Image** menu.

Rendering a color wheel

You can fill a selection with a radial blend of colors by choosing **Filter**►**Render**►**Wheel** in the **Image** menu. The rendered effect looks like the color wheel preview in the **Hue/Saturation** dialog box.

Unless you make a selection in the image, the **Wheel** filter replaces the entire image. If you want to apply a translucent wheel effect, follow the steps for the procedure “**To render translucent clouds**” on page 390, but in the seventh step, use the **Wheel** filter.



Original



Embossed

Angle = 163
Height = 5
Amount = 260

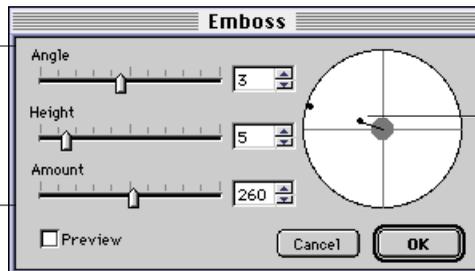
Embossing an image

You can make an image appear raised with the **Emboss** filter. This filter converts low-contrast areas to gray and accentuates high-contrast areas with color (or black and white if the image is **Grayscale** mode) according to the placement of a theoretical light source.

To apply the emboss filter

- 1 With a paint object in edit mode, select the area of the image you want to emboss. If you don't make a selection, the **Emboss** filter affects the entire image.
- 2 Choose **Filter**►**Stylize**►**Emboss** in the **Image** menu.
- 3 Enter an **Angle** from 1 to 360.
- 4 Enter a **height** from 1 to 32 pixels to set the height of the effect.
- 5 Enter a number from 1 to 500 in the **Amount** text box. To retain more color along high-contrast borders, increase this value.

You can adjust the **Angle**, **Height**, and **Amount** individually by dragging these sliders...



...Or, drag this handle to set the **Angle**, **Height**, and **Amount** values simultaneously.

Solarizing images

You can create surrealistic effects in an image by applying the Solarize filter. The Solarize filter mimics a photographic darkroom procedure that exposes film to light during development.

You can solarize CMYK Color, RGB Color and Grayscale mode images. If you make a selection, Canvas filters only selected pixels.

◆ **To solarize an image:** With an image in edit mode, choose Filter>Stylize>Solarize in the Image menu.

Original



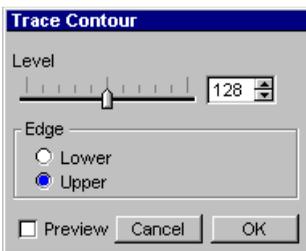
Solarized

Outlining areas based on color value

With the Trace Contour filter, you can outline image areas that border a particular color. This filter makes color outlines if you are working with a color image, and black outlines if you are working with a Grayscale mode image.

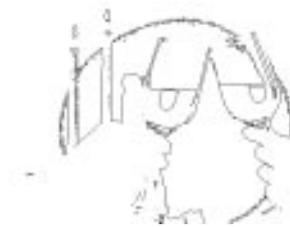
To use the Trace Contour filter

- 1 With an image in edit mode, select the area you want to trace. If you don't make a selection, Canvas filters the entire image.
- 2 Choose Filter>Stylize>Trace Contour in the Image menu.
- 3 Enter a Level value from 0 to 255. The Trace Contour filter uses this color brightness value to determine the areas to trace.
- 4 Select Upper or Lower in the Edge area. To outline areas with higher brightness levels than the one specified, choose Upper. Choose Lower to outline areas with lower brightness levels.
- 5 To see the effect of the settings, turn on Preview. When the settings are correct, click OK.





Original



Level = 169
Edge = Lower



Level = 169
Edge = Upper

Offsetting selections

You can shift an image area with the Offset filter. Canvas fills the vacated area with color, duplicated pixels, or parts of the offset area.



Original



Set to
Background



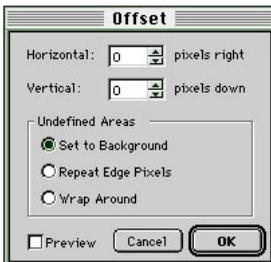
Repeat Edge
Pixels



Wrap Around

To offset image areas

- 1 With an image in edit mode, select an image area.
- 2 Choose Filter>Other>Offset in the Image menu.
- 3 Enter horizontal and vertical offset amounts in pixels. The filter offsets to the right and down from the original location.
- 4 Choose an option under Undefined Areas.



Choose this option

For this effect

Set to Background

Fills area with the background color

Repeat edge pixels

Duplicates edge pixels until they fill the area vacated by the offset

Wrap around

Moves pixels cut off by the offset into the vacated area

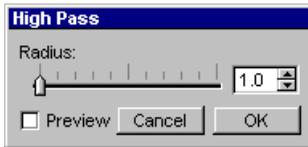
- 5 To see the effect of the settings, turn on Preview. When the settings are correct, click OK.

Using the High Pass, Maximum, and Minimum filters

This section describes how you can create selections in alpha channels and resize bright areas in color channels. You can isolate areas in an image using the High Pass filter and Threshold command. You can use the Maximum and Minimum filters to spread color areas you might need to trap for commercial printing purposes.

Isolating areas using the High Pass filter

The High Pass filter isolates high-contrast edges in an image by removing low-contrast detail. The filter makes pixels located in low-contrast areas gray. In color images, the High Pass filter outlines high-contrast edges in color. Otherwise, it outlines these edges in dark gray.



To apply the High Pass filter

- 1 With an image in edit mode, select an area. If you don't make a selection, Canvas filters the entire image.
- 2 Choose Filter>Other>High Pass in the Image menu.
- 3 Enter a radius from 0.1 to 250.0 pixels. To retain more of the original image surrounding high-contrast edges, enter a high number. If you enter a low number, the filter makes more of the image gray.

Isolating images with the High Pass filter

For more information, see “Understanding image channels” on page 361.

- 1 With an image in edit mode, choose **Select All** and then choose **Copy** in the **Edit** menu.
- 2 Choose **Channels** in the **Image** menu. Create a new channel by clicking the button in the lower-left corner of the **Channels** palette.
- 3 Click the new channel and choose **Paste** in the **Edit** menu.
- 4 Choose **Filter**►**Other**►**High Pass** in the **Image** menu and enter a radius value.
- 5 Choose **Adjust**►**Threshold** in the **Image** menu. Adjust the threshold until you outline the areas you want.



Original Image



High Pass filter



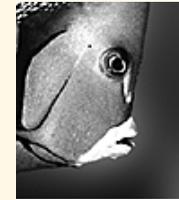
Threshold filter



Editing with painting tools



Finished alpha channel



Isolated subject channel

- 6 Paint areas white to include them in the selection. Fill the rest of the image with black.
- 7 Click the composite channel. Choose **Select**►**Load** in the **Image** menu to load the channel and select an area.
- 8 In this example, the image was finished by choosing **Select**►**Inverse** in the **Image** menu and applying a Gaussian blur of 3.0 pixels.

✓ Tip

To manually apply a choke or spread to an image, use the **Maximum** or **Minimum** filters in a color channel.

Maximizing and minimizing bright areas in an image

You can increase or decrease light areas in an image with the **Maximum** and **Minimum** filters. The **Maximum** filter adds light to shadows. The **Minimum** filter shrinks light areas.

When you apply these filters, **Canvas** compares each pixel to its neighbors within the radius you specify, then replaces it with the lightest or darkest pixel in the group.



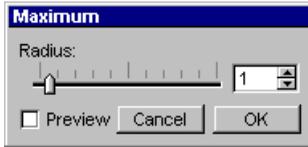
Original



Maximum 4 pixels



Minimum 4 pixels



To use the Minimum and Maximum filters

- 1 With an image in edit mode, select an image area. If you do not make a selection, Canvas filters the entire image.
- 2 To maximize the light areas in an image, choose Filter>Other>Maximum in the Image menu and enter a radius from 1 to 16 pixels.
- 3 To minimize the light areas in an image, choose Filter>Other>Minimum in the Image menu and enter a radius from 1 to 16 pixels.
- 4 Turn on Preview to check the settings and then click OK.

Filling selections with color

The Filter>Other>Fill command in the Image menu lets you quickly and uniformly fill a selection with the foreground or background color, black, white, or gray. In addition, you change the opacity and transfer mode of the color.

To fill a selection with a color

- 1 With an area of an image selected, choose Filter>Other>Fill in the Image menu.
- 2 In the Fill dialog box, choose a color to fill the selection with in the Use pop-up menu.
- 3 To make the color appear transparent, set the Opacity level to less than 100%.
- 4 To use a different transfer mode effect, choose an option in the Mode pop-up menu. See “Using transfer modes with painting tools,” page 313.
- 5 Click OK to fill the selection.

Creating your own image filters

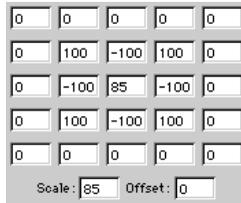
You can create your own special-effect and image-correcting filters using the Custom command. You can also save custom filters and use them in future Canvas documents.

Filters work with an image one pixel at a time. Using a mathematical formula and the color values of pixels within a specified radius, filters assign each pixel a new color value. In a custom filter, you supply the numbers the filter uses to calculate the new color values.

The same filter can produce different effects in other images. To get the most out of custom filters, spend time experimenting.



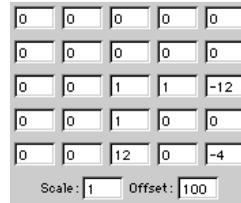
Original



Custom filter



Blurred image



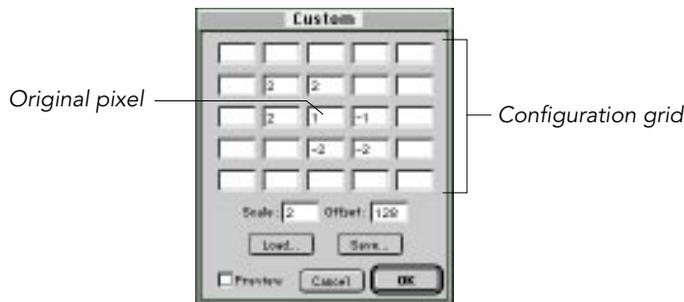
Custom filter



Embossed image

To use Custom filters

- 1 With an image in edit mode, select an area of the image. If you don't make a selection, Canvas filters the entire image.
- 2 Choose Filter>Other>Custom in the Image menu to open the Custom dialog box.
- 3 In the configuration grid, type a value from -999 to 999 in as many boxes as you want. Canvas ignores blank boxes.



- 4 Enter a Scale value from 1 to 9,999. To retain the general appearance of the original image, the scale should equal the sum of the entries in the configuration grid. For example:

Grid entries	Sum	Scale
2 2 1 -1 -1 3	$2+2+1-1-1+3=6$	6
-15 7 4 -3 2 8	$-15+7+4-3+2+8=3$	3

- 5 Enter an Offset value from -9,999 to 9,999. Positive values increase the brightness of the final outcome while negative values decrease the brightness.
- 6 Turn on the Preview option to check the filter effect. When the settings are correct, click OK.
 - ◆ **To save a custom filter:** In the Custom dialog box, enter the filter settings and click Save. Enter a name and location for the filter and click Save.
 - ◆ **To load a custom filter:** In the Custom dialog box, click Load. In the dialog box that appears, locate the filter and click Open.

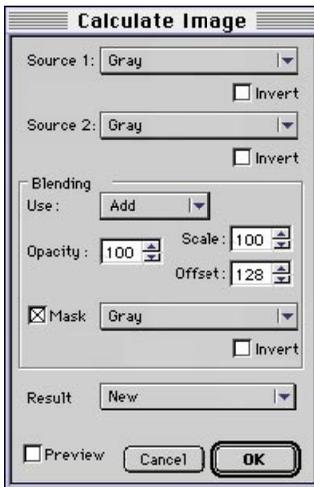
Combining image channels

You can combine image channels with the Calculate command to create effects such as embossing text in an image. By adding, subtracting, and multiplying channels, you can also enhance shadows and highlights.

The Calculate command combines corresponding pixels from two channels by the method you choose. You can place the result in a new or existing channel.

To combine channels

- 1 With an image in edit mode, choose Calculate in the Image menu.
- 2 Choose the first channel in the Source 1 pop-up menu. If you want to invert the channel, turn on Invert. For more information, see “Inverting colors in images” on page 372.
- 3 In the Source 2 pop-up menu, choose the channel you want to combine with the first channel. If you want to invert the channel, turn on Invert.
- 4 In the Blending area, choose a method in the Use pop-up menu. See “Descriptions of Calculate blending options,” next.
- 5 Enter an opacity from 0 to 100 percent for Source 1. Other options are available for some Blending methods. For more information, see “Descriptions of Calculate blending options” on page 399.
- 6 If you want to mask Source 1, turn on Mask in the Blending area. Then choose a channel in the pop-up menu. To invert the mask, turn on Invert in the Blending area.



7 Choose a destination channel or New in the Result pop-up menu. If you select an existing channel, Canvas replaces all contents of the existing channel with the results of the calculation.

8 Turn on the Preview option to check the results of the calculation. When the settings are correct, click OK.

Descriptions of Calculate blending options

You can select various blending methods in the Calculate Image dialog box.

Normal. Places Source 1 over Source 2 at the specified opacity. 100 percent opacity replaces Source 2 with Source 1.

Multiply. Creates a darker channel than the source channels. Black areas in either source create black areas in the resulting channel. White areas do not affect the result.

Screen. Creates a lighter channel than the source channels. White areas in either source create white areas in the resulting channel. Black areas do not affect the result.

Overlay. Places Source 1 over Source 2 without destroying the shadows or highlights of Source 2.

Soft Light. Lightens or darkens pixels in Source 2 depending on the brightness value of the corresponding pixels in Source 1. Pixels in Source 1 that are lighter than 50% black lighten Source 2. Pixels in source 1 that are darker than 50% black dark-

en Source 2.

Hard Light. Lightens or darkens pixels in Source 2 depending on the brightness value of the corresponding pixels in Source 1. Hard Light works similarly to Soft Light. However, black in Source 1 produces black in the resulting channel and white produces white.

Darker. Replaces pixels in Source 2 with the corresponding pixels in Source 1, if the pixels in Source 1 are darker.

Lighter. Replaces pixels in Source 2 with the corresponding pixels in Source 1, if the pixels in Source 1 are lighter.

Add. Creates a lighter channel than the source channels. Add is similar to Screen but usually produces a higher-contrast image.

If you select the Add option, you can enter a Scale value from 1 to 2 with a precision of three decimal places. To calculate the average brightness value of two channels, choose Add and enter a Scale of 2.

You can brighten or darken the

resulting channel by specifying an Offset value. To lighten the overall image, enter an offset from 1 to 255. To darken the image, enter an offset from -1 to -255.

Subtract. Creates a darker channel than the source channels. Subtract is similar to Multiply. However, corresponding pixels of the same color produce black in the resulting channel.

If you select the Subtract option, you can enter a Scale value from 1 to 2 with a precision of three decimal places.

You can brighten or darken the resulting channel by specifying an Offset value. To lighten the overall image, enter an offset from 1 to 255. To darken the image, enter an offset from -1 to -255.

Difference. Compares the color value of each pixel in Source 1 with the corresponding pixel in Source 2, subtracts the darker value from the lighter, and then uses this difference in the resulting channel.

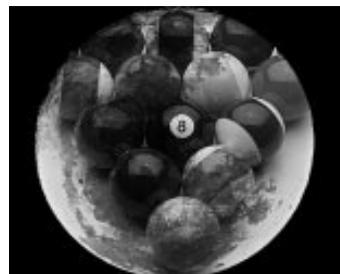
Examples of Calculate blending options



Source 1



Source 2



Multiply



Screen



Overlay



Soft Light



Hard Light



Darker



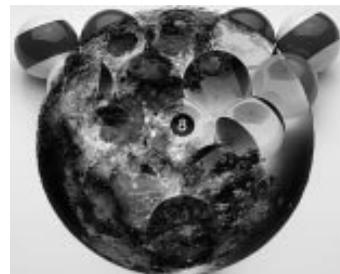
Lighter



Add



Subtract



Difference



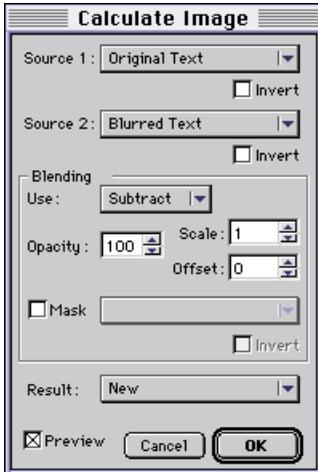
Embossed text effect



Creating an embossed image effect

You can use the Calculate command to apply shadows and highlights that create the illusion of objects or type imprinted in an image. The following procedure outlines the steps for creating this embossed effect. For this example, we used a 72-ppi image to demonstrate the concepts; other image types and resolutions might require slightly different procedures.

- 1 With a 72-ppi paint object in edit mode, choose Show Channels in the Image menu.
- 2 Create a new channel by pressing the right-arrow button in the Channels palette and choosing New Channel in the menu. In the dialog box that opens, type “Original Text” in the Name text box and choose Masked Area in the Color Indicates area. Click OK.
- 3 Click the Original Text channel in the Channels palette to make it active.
- 4 Select the Text tool, click the I-beam in the image, and begin typing. Press Enter (Mac) or Esc (Windows) when you finish (see “To set type within images” on page 328). Canvas creates a selection from the characters you typed.
- 5 Choose Filter>Other>Fill in the Image menu. In the Use pop-up menu in the Contents area, choose White. Set Opacity to 100, and choose Normal in the Mode pop-up menu. Click OK; Canvas fills the selection with white.
- 6 Press Esc to deselect the characters you just filled with white.
- 7 In the Image Channels palette, make a copy of the Original Text channel by dragging the channel to the New Channel icon at the bottom left of the palette. Canvas creates a channel called “Original Text copy.”
- 8 Double-click “Original Text copy” to open the Channel Options dialog box. Rename the channel “Blurred Text.” Click OK.
- 9 Choose Filter>Blur>Gaussian Blur to soften the text slightly. For our image, we used a Gaussian blur radius of 2 pixels.
- 10 Choose Filter>Other>Offset in the Image menu and set the Horizontal Offset to 5 and the Vertical Offset to 3. Choose “Repeat Edge Pixels” under Undefined Areas and click OK.
- 11 Choose Calculate in the Image menu. For Source 1, choose Original Text. For Source 2, choose Blurred Text. In the Blending



pop-up menu, choose Subtract, and set Opacity to 100, Scale to 1, and Offset to 0. In the Result pop-up menu, choose New. Click OK.

12 Name the newly-calculated channel “Shadow” using the Channel Options dialog box, as you did in step 8. Make sure that Masked Area is selected in the Color Indicates area.

13 Click the Blurred Text channel in the Channels palette. Choose Filter>Other>Offset in the Image menu and set the horizontal offset to -7 and the vertical offset to -4. Click OK.

14 Choose Calculate in the Image menu. For Source 1, choose Original Text. For Source 2, choose Blurred Text. In the Blending pop-up menu, choose Subtract and set Opacity to 100, Scale to 1, and Offset to 0. In the Result pop-up menu, choose New. Click OK.

15 Name the channel you just created “Highlight.” Again, make sure that Masked Area is selected in the Color Indicates area.

16 Click the composite channel (the first channel in the list) in the Image Channels palette to make it active.

17 Option-click (Mac) or Alt-click (Windows) the Shadow channel to load the channel as a selection. You can also choose Select>Hide Edges in the Image menu to hide the marching ants.

18 Choose Filter>Other>Fill in the Image menu. In the Use pop-up menu in the Contents area, choose Black. Turn on the Preview option. Choose Normal in the Mode pop-up menu. Adjust the Opacity value until you get a shadow effect that you like. Click OK; Canvas adds the shadow to the image.

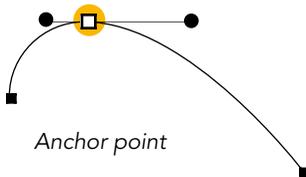
19 Option-click (Mac) or Alt-click (Windows) the Highlight channel to load the channel as a selection. Choose Select>Hide Edges to turn off the marching ants.

20 Choose Filter>Other>Fill in the Image menu. In the Use pop-up menu in the Contents area, choose White. Turn on the Preview option. Choose Normal in the Mode pop-up menu. Adjust the Opacity value until you get a highlight effect that you like. Click OK; Canvas adds the highlight to the image.

You’ve now created an embossed text image effect. Press Esc twice to deselect the highlight area and end paint edit mode.

GLOSSARY / INDEX

GLOSSARY



baseline

ACTIVATE To make a window active by clicking anywhere in it.

ACTIVE WINDOW The window with the program's focus, usually in front. Tools and commands work in the active window.

ALERT BOX A box that appears on the screen to give a warning or to report an error message.

ALPHA CHANNELS A grayscale duplicate of an image on which you can store masks and selections.

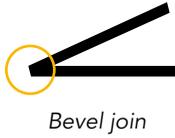
ANCHOR POINT The starting or ending point of a path segment. Anchor points appear only when an object is in edit mode. When selected, anchor points of curve segments display one or two direction lines.

ANSI American National Standards Institute. One of the standards available to specify dimension object properties.

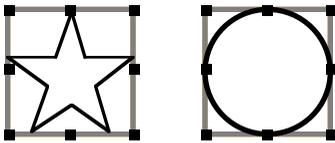
ANTI-ALIAS To soften the edges of an applied brush stroke, effect or selection. When something is anti-aliased, the color on the edges fades to transparency instead of stopping abruptly.

ASCII Acronym for American Standard Code for Information Interchange (pronounced "ASK-ee"). ASCII is used for representing text inside a computer and for transmitting text between computers.

BASELINE An imaginary line on which a line of text rests. The descenders of characters such as **g**, **j**, and **p** extend below the baseline.



Vector (left) and bitmapped fonts



Bounding boxes

BEVEL JOIN A style of connection between two segments in a vector object, in which the stroke lines appear to be trimmed diagonally.

BÉZIER CURVE A curve, named after French mathematician Pierre Bézier, defined by the position of *anchor points* and *tangent lines*.

BIND To align the baseline of text so it follows the contours of a path.

BITMAP A digital image composed of pixels; technically, an image containing only black and white. *See also* Image.

BITMAPPED FONT A font made up of characters composed of pixels, rather than vector data. Fonts displayed on a computer screen are bitmapped fonts, for example, and usually aren't suitable for printing.

BLACK AND WHITE A method of digital imaging that uses pure black and pure white pixels. The frequency of black or white pixels create the illusion of shades.

BLEND A smooth transition of shape and color between two vector objects through intermediate objects created by Canvas.

BOUNDING BOX An invisible rectangle that defines the boundaries of an object. Canvas displays an object's bounding box when the object is selected.

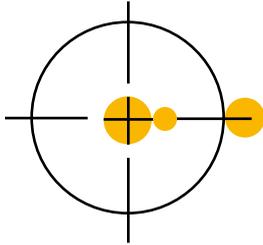
BULLET A special text character, usually a filled circle (•), available in many fonts, especially symbol fonts.

BUTTON A pushbutton-like image in dialog boxes where you click to designate, confirm, or cancel an action.

CANVAS TEMPLATE A Canvas document that includes options and settings and is used as the basis for new documents.

CCITT (Consultative Committee on International Telegraphy and Telephony); its standards include data transmission formats.

CD-ROM Acronym for *compact disc read-only memory*; a compact disc 120 mm (4.72 inches) in diameter that can store 550 MB of information. The disc is “read-only” memory because a drive can read the information but can’t record information.



Center length, center gap,
center extension

CENTER EXTENSION The distance that Center dimension lines extend beyond the dimensioned object.

CENTER GAP The space between a Center dimension crosshair and the lines that extend from it.

CENTER LENGTH The Center dimension crosshair length.

CHANNEL In digital images, a layer of primary color in a full-color image. For example, an RGB image has at least three color channels (one each for red, green, and blue) and a composite channel, which adds the three channels together to create a full-color image.

CHARACTER Any symbol, such as letters, numbers, and punctuation, that can convey information. Some characters can be displayed on the monitor screen and printed on a printer.

CHARACTER STYLE A set of attributes, such as color, typeface, and style, that can be applied as a group to text characters.

CHOOSE A Mac OS desk accessory that lets you connect to and disconnect from network and peripheral devices, such as printers and file servers.

CLICK (v.) To position the pointer on something, and then press and quickly release the mouse (or other pointing device) button. (n.) The act of clicking.

CLIP ART Electronic pictures that you can use in documents. The term comes from using scissors to clip pictures on paper.



Closed paths

CLIPBOARD A holding place in system memory for the last information cut or copied from a document. You can paste information from the Clipboard into a document. Information remains on the Clipboard until replaced by another cut or copied selection.

CLOSED PATH A vector path that does not have separate starting and ending points.

CMYK COLOR A color system based on the four colors used in color printing: cyan, magenta, yellow, and black. Also, a color mode used to define colors in a digital image. *See* Process Color.

COLOR PALETTE A collection of colors used in a document, from which you can select colors to apply.

COLOR SEPARATIONS Computer files, printed output, or film, in which the colors in a document are divided into their primary or custom color components. Color separations are used to produce printing plates for commercial color printing. *See* Process Color and Spot Color.

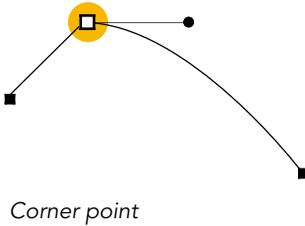
COLOR WHEEL A two-dimensional view of color showing hue and saturation. Hue is the position of a color on the circumference of the wheel. Moving clockwise and starting at twelve o'clock, the colors are yellow, red, magenta, blue, cyan, and green. Colors toward the center of the wheel have more gray than those near the edge.

COMMAND KEY On Mac OS system keyboards, a key (usually with a propeller symbol and sometimes labeled “Command”) that modifies an action when pressed.

COMPOSITE CHANNEL The combination of all color channels in an image. In the Channels palette, the first channel listed, identified by RGB, CMYK, LAB, or Black, depending on the image mode.

CONTROL KEY A keyboard key, usually marked “Ctrl,” that modifies an action when pressed.

CONTROL PANEL A Mac OS or Windows system program that lets you change features of the operating system, such as settings for the display, keyboard, and networking.



CORNER POINT An anchor point where path segments meet at an angle, rather than with a smooth transition.

CROP To trim an image to a specified rectangular area.

CROP MARKS Small lines placed at the page edge that mark where printed material will be trimmed.

CURRENT INK The ink, or color, that applies to new objects you draw, set by applying an ink when no objects are selected; this setting does not change when you set the ink for a specific object. For example, if you set the current fill ink to red, new objects you draw will be filled with red; if you then change an object’s color from red to green, however, the current ink remains red.

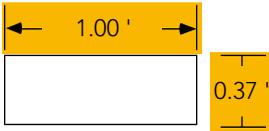
CURRENT STROKE The stroke that applies to new objects you draw, set by applying a stroke when no objects are selected; this setting does not change when you set the stroke for a specific object. For example, if you set the current stroke to a 5-point pen, new objects you draw will have a 5-point pen width; if you then change an object’s stroke from 5 to 10 points, however, the current pen width remains 5 points.

CUSTOM VIEW A recording of a screen position and magnification level in a Canvas document.

DECIMAL TAB A tab, represented by a decimal tab marker, that aligns columns of numbers at the decimal point position.

DESATURATE To increase the gray content of a color.

DIALOG BOX A box that an application displays to request information or to report that it is waiting for a process to complete.



Dimension objects

DIMENSION OBJECT Object created with the Dimensioning tool.

DIMENSION TEXT GAP The space between the dimension text and arrow.

DIN STANDARD (Deutsches Institut für Normung) standard; one of several used to specify the properties of dimension objects.

DIRECTORY DIALOG BOX A type of dialog box you use to navigate a computer file system when you save or open a file.

DITHER To arrange pixels of several colors into patterns to give the appearance of a broader range of colors.

DOCUMENT The container for information and objects you work with in Canvas. Canvas has three types of documents — illustration, presentation, and publication.

DOT GAIN In commercial printing, the amount of size increase of halftone dots caused by ink spreading on the printed medium.

DOUBLE-CLICK (v.) To press and release the button on a mouse (or other pointing device) twice in quick succession.

DPI Abbreviation for “dots per inch,” the unit of measurement of the resolution of a printing device.

DRAG To press and hold down the button on a mouse (or other pointing device), move the device, and then release the button.

EMULSION Photosensitive coating on film or paper.

ENCAPSULATED POSTSCRIPT (EPS) A format for storing graphics and text in a file using the PostScript language. An EPS file can include a preview image. *See* PostScript.

ESC KEY A keyboard key that lets you stop a procedure.

EXTERNAL TOOLS Individual program modules that provide features, tools, and commands in the Canvas program.

FADE Gradual decrease of a painting tool effect until there is no noticeable change in the image. For example, if “Fade Size within 32 steps” is selected in the Paintbrush manager, the brush becomes smaller as you drag.

FILE Any named, ordered collection of information stored on a disk.

FILL INK The ink that Canvas applies to the inside, as opposed to the outline, of objects and text.

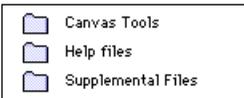


Flat end cap

FLAT END CAP A style of stroke end in which the stroke end is squared off, perpendicular and flush to the end of the stroke.

FLOATING SELECTION An image area that “floats” above an image. You can move and edit the floating selection without changing the underlying image until you defloat, or “drop,” the selection on the image.

FONT A complete set of characters in one design, size, and style. In typography, a font can be restricted to a particular size and style (such as 10-point Helvetica) or can comprise multiple sizes, or multiple sizes and styles, of a typeface design.



Folders (Mac OS)

FOLDER A container for documents, applications, and other folders in the Mac OS and Windows file systems.

FRAME A technical term for the outline of an object or text, to which Canvas applies stroke settings, such as dashes.

GAMUT The range or extent of a color model’s spectrum.

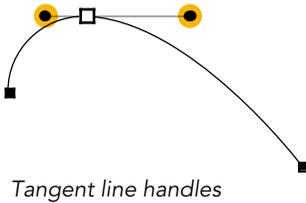
GRADIENT A gradual transition or blend between two or more colors. The direction and shape of a gradient can be radial, linear, elliptical, or shape-derived.

GRAYSCALE An image mode that uses eight bits of information per pixel for up to 256 brightness levels, from black to white through shades of gray.

GROUP (v.) To associate two or more objects so they behave as a unified object; (n.) the resulting object.

GUIDES Non-printing lines to which objects can be aligned.

HALFTONE A pattern of tiny black and white dots that appear to the human eye as shades of gray; a photograph or other image converted to such a pattern for commercial printing.



HANDLES (1) Small squares, usually at the corners and midpoints of an object's bounding box, displayed when an object is selected; you can drag handles to resize the object. (2) Small circles at the ends of tangent lines; you can drag a handle to change the length or angle of a tangent line.

HATCH PATTERN Object-based fill pattern made of line groups.

HIGHLIGHT To make something visually distinct. For example, when you select a block of text in Canvas, the selected text appears against a colored background.

HUE A color's main characteristic; its name, as in blue, red, or orange, defined by its position on the color wheel.

I-BEAM A type of pointer shaped like the capital letter "I."

ILLUSTRATION AREA The rectangular area on screen in a Canvas illustration document, which represents the extent of the illustration and may cover multiple printed pages, depending on the size of paper used for printing.

IMAGE A picture composed of pixels; sometimes referred to as a "raster image," "paint image" or "bitmap." *See* Image Mode.

IMAGE MODE The system used to define colors in an image. Canvas image modes include Black and White, RGB Color, CMYK Color, Grayscale, Indexed, and LAB Color.

IMPORT To use any of several techniques to move graphics or text from another program into a Canvas document.

INDEXED A digital image mode that lets you specify a palette of up to 256 colors used in the image. Usually used for on-screen display and electronic distribution of images, because it requires less memory than RGB or CMYK color modes.

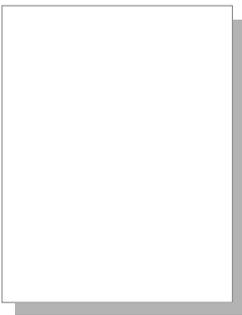
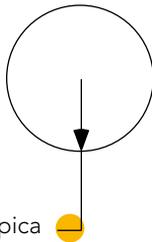


Illustration area



Text without kerning (top) and with kerning applied (bottom)



Leader character length

INK Colors, symbols, hatch patterns, textures, and gradients that can be applied to objects.

INSERTION POINT A blinking vertical line where text you type will appear in a text object or dialog box.

ISO STANDARD (International Organization for Standardization); one of several standards used to specify the properties of dimension objects.

JIS STANDARD (Japanese Industrial Standard) standard; one of several used to specify the properties of dimension objects.

JUSTIFICATION The method used to align paragraphs of text within a text object's margins, either left, right, center, or full.

KERNING Adjusting the normal space between characters in text; also, the amount of the adjustment.

LAB COLOR An image mode in which the color components are divided into a lightness channel and A and B color channels.

LANDSCAPE Orientation of an illustration or page that is wider than it is tall.

LAYER A level in a Canvas document used to organize parts of illustrations so they can be easily selected.

LEADER CHARACTER A character, usually a period (".") used to fill space between the character before a tab space and the character immediately following the tab space.

LEADER CHARACTER LENGTH The length of the horizontal portion of the witness line of a dimension object.

LEADING Space between lines of text, measured in points from the baseline of one line to the next.

LIGHTNESS The amount of black or white in a color.

LINE GROUP A set of parallel lines in a hatch pattern that have identical properties.

LINE CAP The shape of the end of a pen stroke.

LINE JOIN The shape of the pen stroke where two path segments meet.

LPI Abbreviation of “lines per inch,” a measure of halftone screen resolution.

MAC OS The Apple Computer operating system used on Macintosh and on compatible personal computers.

MACRO OBJECT A vector object that can be used to place copies of itself in documents; the copies remain linked to the original.

MARQUEE A selection in an image defined by a rectangular flashing border; also, the tool used to make a marquee selection.

MASTER PAGE A special page in a publication document. Items on the master are visible and print on every page in the document.



Text used to mask a photo

MASK To use a vector or text object to selectively show portions of another object behind it.

MASTER SLIDE A special slide in a presentation document. Items on the master slide are visible and print on every slide in the document.

MEGABYTE (MB) A unit of measurement equal to 1024 kilobytes, or 1,048,576 bytes.

MEMORY A hardware component of a computer system that can store information for later retrieval.



Miter join

MITER JOIN A style of connection between two segments in a vector object in which the stroke lines fit together to form a point.

MODIFIER KEY A general term for a key that changes the meaning of other keys or mouse actions; for example, Command, Control, Option, and Shift.

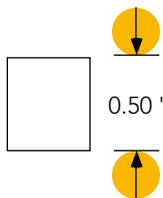
NTSC (National Television Standards Committee); the standard video format defined by the NTSC, also called composite because it combines all the video information, including color, into a single signal.

OBJECT A discrete vector path, block of text characters, or raster image, contained within an invisible rectangular frame. You can select an object and perform standard operations on it, including move, copy, delete, cut, rotate, flip, and skew.

OPACITY The amount of transparency of a brush stroke, filter or channel calculation. At 100% opacity, the applied effect completely covers the background image. Lower opacity levels allow the original image to show through.

OPEN PATH A path defined by separate starting and ending points.

OPTION KEY A Mac OS keyboard modifier key, usually labeled “Option.”



Outside line length

OUTSIDE LINE LENGTH Dimension object arrow length, when the Arrows Inside option is not selected.

OVERPRINT A technique where two or more colors are printed on top of each other. For example, if you overprint yellow on blue, the combination appears green.

PAINT OBJECT An object that contains a raster image. The term was used in earlier Canvas versions and is synonymous with image object.

PAINTING TOOL Any of several tools used to create or edit a paint object.

PALETTE A type of dialog box that can remain open on screen. A palette contains tools, attributes, or options for commands.

PALETTE ICON A toolbox icon that opens a palette.

PARAGRAPH STYLE A set of attributes, such as font, leading, indents, and tab settings, that can be applied to a paragraph of text.

PATH One or more connected segments, generally created with a drawing tool, within a vector object. The path itself is invisible unless it has visible fill ink, or pen ink and stroke, applied to it.

PEN INK The colors and patterns applied to an object's stroke.

PICA A unit of measurement equal to 12 points or 1/6 of an inch, abbreviated "pc."

PIXEL Short for *picture element*; a single tiny dot of a raster image or a computer display.

PLUG-IN A program module that can be used by Canvas to provide an additional image-editing function.

POINT A unit of measurement for type equal to 1/72 inch; abbreviated "pt."

POINTER A small shape that follows the movement of the mouse on screen or shows where your next action will take place. The pointer can be an arrow, an I-beam, or other shapes.

PORTRAIT The orientation of a page or illustration so that the height is larger than the width.

POSTSCRIPT® (1) An Adobe Systems, Inc. computer language that defines the appearance of printed type and images. (2) A type of font that relies on PostScript to be printed.

POSTSCRIPT PRINTER DESCRIPTION (PPD) A text file that provides information about a specific printer to the operating system and application programs.

PPI Pixels per inch, a measure of the resolution of an image.

PRESS (1) To point to an item on screen and press and hold down the mouse button without moving the mouse. (2) To push a key down and then release it; you hold a key down only when using a modifier key with another key, for example, when instructed to *press Ctrl+A*.

PRINTER DRIVER A program that controls the exchange of information between the computer and a specific type of printer.

PROCESS COLOR The method for printing a full range of colors using only cyan, magenta, yellow, and black; also, any one of these colors. *Compare to Spot Color.*

QUICKDRAW The part of the Mac OS operating system that performs graphic operations for display, printing, and data exchange.

RANDOM-ACCESS MEMORY (RAM) The part of the computer's memory that stores information temporarily while you're working on it.

RASTER IMAGE A picture made up of a matrix of pixels, created by digitizing or scanning an image, which is contained in a paint object.

REGISTRATION MARK A small mark, several of which are used together to align films and plates for commercial printing.

RGB COLOR Method of defining colors, based on combinations of the primary colors, red, green, and blue. Also, a color mode for digital images.

RESOLUTION A measure of the amount of information in a digital image, expressed in pixels per inch (ppi); also, a measure of the smallest dot or pixel that can be used by a computer display or output device, expressed in dots per inch.

ROUND END CAP A style of stroke end, in which the end of the stroke is capped with a semicircle.

SATURATE To increase color intensity by removing gray.

SCANNER Any input device that converts printed matter, such as a photographic print or transparency, into digital data.



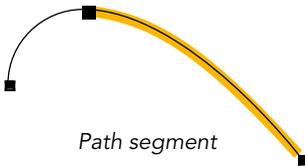
Registration mark



Round end cap

SHIFT-CLICK A technique that allows you to extend or shorten a selection by positioning the pointer at the end of what you want to select and holding down the Shift key while clicking the mouse button.

SHIFT KEY A key that, when pressed, causes the subsequent letter you type to appear in uppercase or the top symbol on a two-character key to be produced. The Shift key can also modify mouse actions.



SEGMENT A line or curve between two endpoints in a path.

SELECTION The information or items that will be affected by the next command, including objects or a series of characters.

SELECTION BOX A dashed rectangle that appears as you drag a Selection tool over objects to select them.

SEPARATIONS *See* Color Separations.

SLIDE SHOW The display of different screens of information — “slides” — in sequence. Canvas changes the screens after a set time interval or when you click the mouse.

SMART POINTER A pointer symbol representing the Smart Mouse constraint that is in effect.

SMOOTH POLYGON A polygon with rounded segments and corners.

SNAP GRID A grid of horizontal and vertical lines you can display. The pointer can snap into alignment with the snap grid.

SOURCE LINE Dotted line that points to the part of the object defining a Smart Mouse constraint that is in effect.

SPACEBAR The long, unlabeled bar in the bottom row of keys on a computer keyboard that you press to insert space between characters.

SPOT COLOR Customized color representing a particular ink that will be used to print the color. *Compare to* Process Color.



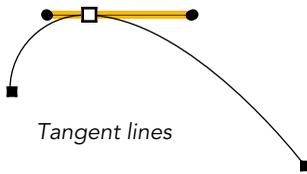
Square end cap

SQUARE END CAP A style of stroke end, in which the end of the stroke is squared off and extends half the line width beyond the endpoint of the path.

STATUS BAR The area at the bottom of the Canvas window or the screen that displays information on tools, the position of the pointer, and selected objects.

SYMBOL INK A repeating pattern, created from vector objects, that can be applied to vector objects and text as a fill ink or stroke ink.

TAB KEY A keyboard key that moves the insertion point to the next tab marker, or to the next place to enter information in a dialog box. The Tab key is also used as a modifier key.



Tangent lines

TANGENT LINE Line passing through an anchor point on a vector path; visible when the path is in edit mode and an anchor point with tangent lines is selected. Its angle and length affects the shape of adjacent segments.

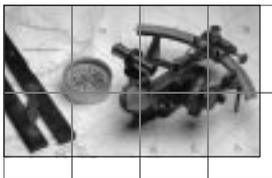
TEMPLATE *See* Canvas Template.

TEXT OBJECT An object containing text.

TEXT BOX A place in a dialog box where you can type information.

TEXT FILE A file that contains information stored in the form of readable characters encoded in ASCII format.

TEXTURE INK A repeating pattern, created from a raster image, that can be applied as a fill ink or pen ink.



Tiling for printing

TILING Dividing a large illustration into multiple pages, or “tiles,” for printing on a desktop printing device. You can select the Tile option in the Page Setup (Mac OS) or Printer Setup (Windows) dialog box, or in the Print dialog box.

TOLERANCE In image editing, a value setting the threshold for similarity between colors before an effect occurs. For example, if the Wand tool tolerance is set to 0, it selects only pixels of the exact same color. If the tolerance is set higher, the tool selects pixels of similar colors.

TOLERANCE DOWNSPACE Amount of space (leading) between tolerance text in dimensions with two tolerance measurements.

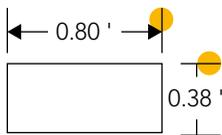
TOLERANCE TEXT SCALE Size of tolerance text in a dimension in proportion to the dimension text.

TRANSFER MODE Method by which a color blends with a background color. Transfer modes include Dissolve, Multiply, Screen, Lighten, and Saturation.

UNGROUP Use the Ungroup command to divide a group object into its original component objects.

VECTOR OBJECT An object containing a path or a shape drawn with the Multigon, Spiral, or another specialized drawing tool.

WINDOWS (1) The brand name of a family of Microsoft operating systems, including Windows 95 and Windows NT. (2) The separate areas on screen in which programs display information.



Witness extensions

WITNESS EXTENSION Witness line part extending past dimension arrows.

WITNESS GAP Space between an object and dimension witness lines.

WRAP To change text margins so text flows around or remains inside a vector object.

X-HEIGHT The height of a lowercase *x* in a given font; the height, measured from the base line, of the main portion of most lowercase letters in a font, excluding ascenders and descenders.

ZOOM To increase or decrease the magnification of a document.