Working with Objects

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Introduction

This chapter discusses the different kinds of objects that make up a drawing in DrawPlus, and how to use them. The types of object that you use in DrawPlus are:

- Lines and closed shapes
- QuickShapes - boxes, ovals, arrows and many others
- Text
- Bitmaps
- Groups
- Combinations.
- Envelopes.

The first four are known as component objects. The last three of these are sometimes known as "composite objects", because they are made from several objects.

General Object Properties

The different types of DrawPlus objects have a lot in common. This section covers operations that work in a similar manner on all objects. The latter sections cover the specifics of each object type.

Create and select

To create an object, select one of the creation tools from the left toolbar (perhaps using a flyout palette) and drag on the page or pasteboard area.

The last object that you create becomes the currently selected object, and is "live" for any changes you want to make to it. If you want to change another object, you must first select it.

- To select an object:
Click on an object with the Pointer tool. It's not enough to click within the objects rectangular bounding box. You have to click on the "drawn" part of the object, its outline or its filled interior. If objects overlap, keep the mouse pointer still and click repeatedly to select each overlapping object in turn.
Or press **TAB** or **SHIFT+TAB**. Pressing these keys repeatedly cycles through every object in the drawing, so that you can even get to objects you can't see.

- To select several objects at once
Drag the Pointer tool to form a solid box around the objects. This method is known as a marquee select. Don't start the drag over another object or DrawPlus will move the object rather than do the marquee select.
Or **SHIFT+CLICK** with the Pointer tool, to add and remove objects from the current selection.

The Rotate and Node tools can also be used to select objects in the same way as the Pointer tool.

Cut, copy, paste, delete

Select the objects to which the operation is to be applied and then:

- **To cut:**
(That is, delete the object from the page and copy to the Windows clipboard), select **Edit/Cut** or press **CONTROL+X**.

- **To copy:**
(That is, leave the object unaltered on the page and place a copy on the Windows clipboard), select **Edit/Copy** or press **CONTROL+C**. If you just want another copy of the selection without using the clipboard, hold the **CONTROL** key down while moving the selection with the Pointer tool as described below. To make many copies, use **Effects/Replicate...**

- **To paste:**
(That is, place a copy of the contents of the Windows clipboard on to the page), select **Edit/Paste** or press **CONTROL+V**. To select the type of object to be pasted from the clipboard select **Edit/Paste Special...**

■ **To delete:**
Select **Edit/Clear** or press the DELETE key.

Move, resize, rotate, shear and flip

■ **To move**:
Drag with the Pointer tool or use the Status Editor on the Status Bar to enter numeric values. After you've started moving the object or group with the Pointer tool, you can press the SHIFT key to constrain the movement to be horizontal or vertical only. You can also move the selected object by using the arrow keys. The arrow key moves the object by one ruler marker increment in the direction of the arrow key pressed.

■ **To size**:
Drag with the Pointer tool on a handle or use the Status Editor on the Status Bar to enter numeric values. After you've started resizing the object with the Pointer tool, you can press the CONTROL key to preserve the aspect ratio of the object being sized, or hold the SHIFT key to constrain the size to a regular shape, such as constraining a rectangular box to a square shape. You can also size objects by using the arrow keys and holding the SHIFT key down.

■ **To rotate**:
Drag with the Rotate tool on a corner handle or use the Status Editor on the Status Bar. After you've started rotating the object with the Rotate tool, you can press the SHIFT key to get 15 degree steps. You can also rotate by using **Effects/Rotate** or clicking on the *Rotate 90* shortcut in the top toolbar. Double-clicking with the Rotate tool on the object undoes the rotation, double-clicking a second time restores the previous rotation.

■ **To shear**:
Drag with the Rotate tool on an edge handle to shear or slant an object.

■ **To flip:**
Use **Effects/Flip Horizontal** or **Effects/Flip Vertical**, or the *Flip* shortcut buttons in the top toolbar. Alternatively, you can flip and resize by using the Pointer tool to drag any side of an object towards and past its opposite side.

Watch the mouse cursor when performing the above operations. You'll notice that the cursor changes as it moves close to a handle to indicate the possible operation. If the cursor doesn't change, you'll know that the operation is not allowed.

You can also move, resize and rotate selections by using the **Effects/Transform...** dialog.

Changing your mind

As you perform any of the above actions, you can change your mind during the operation, or after it has been completed. If you've finished the change, use **Edit/Undo** which will undo the last operation. If you've started the operation, you can abandon it by hitting the ᴇsᴄ key. You can abandon all the changes you've made since last saving the drawing by using **File/Revert**.

Modify properties

Before you can change how an object looks you must first make sure it is selected.

- To modify text properties (font name and style etc):
  Select from the **Text** menu or use the top toolbar. You can also right-click or double-click on the buttons in the top toolbar to access some dialogs normally accessed from the menus.

- To modify graphic properties (colors and fills):
  Select from the **Effects** menu, or use the flyout buttons in the left toolbar. You can right-click or double-click on the buttons in the left toolbar to access dialogs allowing different settings to be accessed.

You can also right-click with the Pointer tool on any object to pop up an object sensitive menu.

Align and layer

Aligning objects

- To align an object to guides or rulers:
Ensure that snapping is on and make sure that rulers or guides are displayed. Then move or resize the object.

- To align an object with the page:
Use the **Arrange/Align Items...** options with the object selected.

- To align one object to another object:
Select the objects to be aligned relative to each other and use the **Arrange/Align Items...** options from the menu or right-click on the selection to access the same menu.

Layering objects

If you create overlapping objects, you'll notice that the most recently created object obscures the earlier ones, and is considered to be "in front" of the others. You can change the layering order of the objects by using the layering options.

- To bring a selected object to the front (on top):
Use **Arrange/Bring to Front** or click on the button shortcut in the top toolbar.

- To send the selected object to the back (underneath):
Use **Arrange/Send to Back** or click on the button shortcut in the top toolbar.

- To bring a selected object forward by one layer:
Use **Arrange/Forward One**.

- To send a selected object back by one layer:
Use **Arrange/Back One**.

The extent to which one object obscures another overlapping object is also affected by the color of that object. You can apply a wide range of colors to lines and fills, all of which are opaque, except Clear, which is transparent and allows the object underneath to show through. Finally, you can use **Arrange/Combine** on a group or multiple selection to create

"holes" where the objects within the multiple selection overlap. The
"holes" are transparent.

Component Object Properties

This section describes the basic component objects that DrawPlus
provides. Large and complex drawings are made out of many component
objects.

Lines and closed shapes

Line objects and closed shapes in DrawPlus are made up of line segments
that meet at corner nodes. The line segments are created using the three
tools available from the Line flyout. Each line segment can be straight or
curved, and the corner nodes can be smooth or sharp. Smooth corner
nodes have a curved line segment on one or both sides, sharp corner
nodes have straight line segments on both sides.

A line has line color and line weight properties. When a line has been
drawn which forms a complete enclosed outline, the object is known as a
"closed shape". The closed shape has line color, line weight and fill color
properties.

When a line or closed shape is selected with the Node tool, the Node tool
draws node handles at every corner node. You select a corner node by
clicking on it with the Node tool. The selected node is drawn slightly
larger and is given a red center to identify it. You can reshape the object
by dragging the node handles.

If the selected node is a smooth corner node, the Node tool will draw
handles for the attractor nodes. Attractor handles control the shape of the
curved line segment. They are drawn as smaller hollow handles attached
to the corner nodes by a blue line. Drag the attractor handles to alter the
shape of a curved line segment.

Creating lines and closed shapes

You create lines and closed shapes in one of the following ways:

- By drawing with the Freehand line tool.
- By drawing with the Straight line tool.

- By drawing with the Curved line tool.
- By creating any object and using the Convert to Curves function

The Freehand line tool is for sketching curves in a freeform way. The line follows your mouse movements as you drag on the page. The Straight line tool makes straight lines which can be constrained to be horizontal or vertical by using the SHIFT key. The Curved line tool is used to create curved line segments.

However they are created, all the lines behave in a similar manner. For example, you can create some text with the Text tool, click on the *Convert to Curves* button in the top toolbar, select the Node tool and edit the curves that make up the letters as if you had drawn the letter shapes by hand using the line tools.

Changing lines and closed shapes

Once a line or closed shape has been created you can do the following:

- Reshape it by dragging its nodes using the Node tools.
- Extend it by drawing more line segments. Use one of the line tools, and start the drag on one of the existing line's end control nodes.
- Close the line to create a closed shape that has an interior which is filled. Join its end points together by adding a line segment which joins the start and end control nodes or use the Curve Editor.
- Break open a closed shape to convert it back in to a line so as more line segments can be added using the line tools. This is done by using the Curve Editor.
- Change straight line segments into curved line segments and vice versa by using the Curve Editor.
- Change the type of corner nodes from sharp and pointed to smooth and vice versa by using the Curve Editor.

See **The DrawPlus Window** chapter which follows for more details on using the Line tools and Curve Editor.

QuickShapes

QuickShapes are pre-designed objects, provided by DrawPlus to save you time. The QuickShape flyout contains a wide variety of commonly used shapes, including boxes, ovals, arrows, polygons and stars. Some of the shapes are quite complex - for example the QuickSpiral would be very difficult to draw by hand.

All the shapes can be positioned, scaled, rotated and filled. What's more, you can adjust their designs by using the Node tool. For example, dragging the handles on a QuickPolygon QuickShape will change the number of sides to make a triangle, pentagon, hexagon or other polygon. Dragging the handles on a QuickBox QuickShape alters the box corners to make them more or less rounded. Dragging the handles of a QuickOval QuickShape will alter the oval into a "pie" shape. Each shape changes in a logical way to allow its exact appearance to be altered. The ability to alter the appearance of QuickShape objects makes them more flexible and convenient than clipart pictures of similar designs.

Creating QuickShapes

All the QuickShapes are created by using the QuickShape flyout in the left toolbar.

To create a QuickShape, select a shape from the flyout and than drag over the page. The QuickShape fills the area you drag. When you release the mouse button, the QuickShape tool reverts to the Node tool.

Using QuickShapes

To adjust the appearance of a QuickShape, select it with the Node tool. The Node tool will draw handles on the shape. Different QuickShapes have different handles - you can find out what each handle does for a particular shape by moving the Node tool over the handle and reading the HintLine.

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To alter the appearance of a QuickShape, click and drag on its handles.

Text

Text objects in DrawPlus have the usual text attributes you would expect to find in any text application. Font, font style and pointsize and other attributes can be altered. The great thing about DrawPlus is that text also behaves like other graphic objects. Text can be stretched, rotated, sheared, enveloped and combined with other objects. Text also has line color, line weight and fill color properties. Text really can be treated in a similar manner to any other graphic object such as a QuickShape.

Creating text

Select the Text tool to create or edit text. Click on the page to create text at the current default pointsize or drag out an area to create text which will be automatically sized to the area dragged. The text font, style, line color, line weight and fill color will all be set to the defaults at the time when the text is created.

Using text

To edit text, click over the existing text object with the Text tool. The Text Edit window appears with the text ready for editing. Remember that DrawPlus does not word wrap text: if you want multiple lines of text in a text object, use the **ENTER** key to start new lines where desired in the Text Edit window.
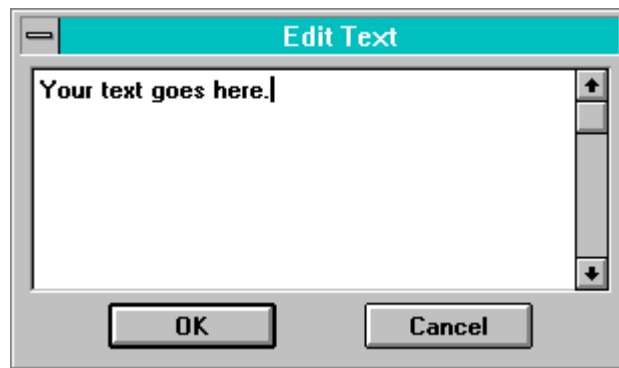
To change text attributes, use the Text menu or the shortcut buttons in the top toolbar. You can also change the pointsize and width of text by

dragging the handles of the text object with the Pointer tool. The leading (line spacing) and tracking (letter spacing) can be visually altered by dragging on the handles shown when the text object is selected with the Node tool.

If you want greater control over the shape of the characters for the text, try converting it to curves. As curves, you can position every character individually and even edit the character shapes, exactly as if you had drawn the character shapes by hand using the Line tools. Details on the **Convert to Curves** function can be found later in this chapter.

Bitmaps

DrawPlus only provides the ability to position and size bitmaps.

DrawPlus does not create bitmap objects, they are only created as a result of importing or pasting from the clipboard.

They are only used when it is necessary to use a bitmap created in another application, as part of a drawing or illustration being created in DrawPlus.

If you need more sophisticated bitmap handling, try one of Serif's other applications, such as PhotoPlus or PagePlus.

Composite objects

This section describes objects which are made from one or more of component objects.

Permanent groups

Permanent groups are a way of permanently "locking" objects together, so that they behave as if they were a single object. This is very useful, since most drawings are made up from elements, where each element is made up of several individual objects. Once an element has been created, it would be normal to convert the objects which make up that element into a permanent group. This allows the element to be treated as a whole. The objects within a permanent group maintain their position and size relative to each other whenever the group is moved or sized.

Permanent group objects behave in a similar manner to other objects. Property changes applied to a group such as changing line or fill color, will alter all the objects that make up the group. The exceptions are:

- Group objects cannot be Combined with other objects.
- Group objects cannot be edited using the Node tool.
- Text within a group object cannot be edited or converted to curves.

Creating permanent groups

To create a permanent group you must first have a multiple selection containing the objects which are to be converted into a permanent group selected.

To create a permanent group use **Arrange/Group**, or the *Group* shortcut button in the top toolbar. The *Group* shortcut button is down when a permanent group object is selected.

You can ungroup the objects to change them back into a multiple selection by clicking on the *Group* shortcut button a second time. To alter one of the component objects that made up the group, click the pointer tool on a blank area of the page to unselect the multiple selection, and then select the desired component object in the normal manner.

A permanent group is automatically created when a picture is imported. This means that you can treat the imported picture as a single element. To select the components which make up the picture, the permanent group must be ungrouped.

Using groups

You can use Groups to make your own picture elements which behave like standard objects. For example, you can make a pipe U-bend out of two QuickCorner Right-Angle sections. First create a QuickCorner QuickShape, then copy it by holding the CONTROL key down while you drag, then flip the copy and move it back to touch the original to make the U-bend. Then select both objects and use the *Group* button. You now have a U-Bend that selects and scales like a single object.

Combinations

A Combination is a special composite object made from several component objects. The combination object has an interior which has "holes" where the component objects overlapped one another. Combinations are useful for creating "mask" or "stencil" effects.

Combined objects behave in a similar manner to group objects except that a combined object changes the line color, line weight and fill color to be the same for all objects in the combination. When the combination is "broken" apart, the line color, line weight and fill color of the component objects are restored.

Creating combinations

To combine some objects, first create a multiple selection containing the objects to be combined, then use **Arrange/Combine** or the *Combine* shortcut button on the top toolbar. If only one object, rather than a multiple selection, is selected, **Combine** automatically creates a rectangle just bigger than the selected object and uses this as a second object for the combination.

Only text, QuickShapes and closed shapes can be combined. Lines that are not closed, bitmaps and permanent groups are ignored by the Combine option. If the selection consists of only a single permanent group, it will be ungrouped automatically and the resulting collection of objects will be combined.

Using combinations

You can get some interesting effects by combining objects. For example, create two QuickSpiral QuickShapes, flip one of them and make them overlap each other. Select both, and then click on *Combine*. This produces a complex mandela pattern

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Another idea is to create a text object, for example the word MAZE, then click on the *Combine* shortcut button. This makes a rectangle with a "MAZE" shaped hole. You can put other objects behind the combined object and they will show through. For example, you could use a spiral or the mandela pattern to give the appearance of spiral-filled text.

Envelopes

An envelope is a shape with an editable outline made up of curves. Envelopes are used as boundaries into which objects are stretched or squeezed. This can produce interesting effects. For example, you can use envelopes to bend text into a heart or just about any other shape.

Applying envelopes

To apply an envelope, first select the object or objects you want to be enveloped. Then click on the *Envelope* button and select an envelope from the flyout. The first palette entry removes an existing envelope from the selected object, a shortcut for **Effects/Remove Envelope**. The second palette entry is a "store" of the most recently selected "user" modified envelope. The third creates a plain envelope, which is used as a base for creating new envelopes. The rest of the palette is filled with predefined envelopes of various shapes.

When an envelope is applied to an object or multiple selection, a single envelope object is created. This object behaves in a similar manner to a permanent group, allowing most normal object operations to be used. DrawPlus selects the Node tool automatically when an envelope is applied.

Using envelopes

You can use the Node tool to edit the envelope outline and thus alter the warp effect. It is very similar to editing curved lines. The envelope outline has corner nodes and attractor nodes which are selected and dragged in the same way. The only difference is that you cannot add or delete corner nodes to an envelope. Envelopes always have exactly eight line segments, two on each side.

You can edit any of the predefined envelopes once they have been applied.

Copying envelopes

If you want to use an envelope which you have edited, on a second object, you make use of the most recently user modified envelope which is stored in the second button of the *Envelope* flyout.

First remove any envelope from the second object using **Effects/Remove Envelope**, or by clicking on the first button in the *Envelope* flyout. Then select the object which has the envelope you wish to use a second time. Finally select the second object and click on the second button in the *Envelope* flyout. This will apply the envelope stored to the second object.