

Equation Editor Help

To learn about using the Help system, press F1, or choose How to Use Help from the Help menu.

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Equation Editor Setup Help

The following are help topics for using the Equation Editor Setup program. To learn how to use Help, press F1, or choose How to Use Help from the Help menu.

[First Install](#)

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[Installing Equation Editor's fonts](#)

Special instructions for:

[Adobe Type Manager \(ATM\) users](#)

See also the [Equation Editor Help](#) index, which lists topics for using the Equation Editor application.

Equation Editor Setup: First Install

First Install installs everything you need to run Equation Editor, including Equation Editor's fonts in formats that will work with any printers you have installed in Windows. If you have Windows 3.1, TrueType fonts will be installed, and if you have Adobe Type Manager (ATM), Equation Editor's fonts for ATM will be installed. (TrueType and/or ATM must be turned on for this to work.)

[Custom Install](#)

[Easy Remove](#)

Equation Editor Setup: LaserJet font directory

The Equation Editor Setup application has detected one or more LaserJet printer(s) installed in Windows, and it is installing Equation Editor's fonts for these printers.

Or, you are explicitly installing fonts for a LaserJet printer using Custom Install. We recommend that you do not install these fonts if you have Windows 3.1, because you can use our TrueType fonts instead. TrueType fonts are scalable and can be used on both the screen and printer, so they have major advantages over LaserJet soft fonts. Also, some printer drivers do not handle LaserJet soft fonts properly under Windows 3.1, so it is best to avoid using them.

LaserJet soft fonts are usually stored in the PCLFONTS directory on your hard disk, and this is the default directory. If you have other LaserJet soft fonts already installed, you should install Equation Editor's fonts in the same directory as the existing fonts.

Equation Editor Setup: PostScript font directory

The Equation Editor Setup application has detected one or more PostScript printer(s) installed in Windows, so it is installing Equation Editor's soft fonts and printer font metrics files for these printers. Or, you are explicitly installing fonts for a PostScript printer using Custom Install.

PostScript soft fonts are usually stored in the PSFONTS directory on your hard disk, and the printer font metrics files are usually stored in the PSFONTS\PFM subdirectory. These are the defaults, and we recommend that you use them unless you have reason and knowledge to do otherwise.

Special instructions for ATM users

Equation Editor provides four PostScript Type 1 outline fonts and corresponding font metrics files that you can use with ATM. The fonts are called Fences, MT Extra, MT Symbol (plain), and MT Symbol (italic). If you have ATM properly installed into Windows and turned on, the Equation Editor Setup program will automatically install these fonts into ATM.

The names of the font files are provided below for reference. You should **not** have to install these fonts using the ATM Control Panel, as the installation will be done by the Equation Editor Setup program.

PostScript outline font file	Font metrics file
-------------------------------------	--------------------------

FENCES.PFB	FENCES.PFM
MTEXTRA.PFB	MTEXTRA.PFM
MTSYMBOL.PFB	MTSYMBOL.PFM
MTSYMITA.PFB	MTSYMITA.PFM

In the ATM Control Panel, there is a "Use Pre-built or Resident Bitmap Fonts" option. When you use Equation Editor, this box should generally **not** be checked. This is especially important if you are using a high resolution display.

If your version of ATM is earlier than 2.0, there is a problem that occurs if you use the ATM Control panel to install fonts. As mentioned above, you should not have to use the ATM Control Panel, because Equation Editor Setup will do the installation automatically. However, if for some reason you use the ATM Control Panel, note that in ATM versions prior to 2.0 the Control Panel edits the WIN.INI file incorrectly, removing instructions to download fonts to PostScript printers. This has been fixed by Adobe in version 2.0 (and higher). To correct this problem, you must re-install Equation Editor's fonts for each PostScript printer after you install Equation Editor's fonts with the ATM Control Panel. Equation Editor provides an easy way to re-install the fonts. Run Equation Editor Setup (you will find the Equation Editor Setup icon in the Equation Editor program group), and choose the Custom Install option. Select "Printer fonts" in the Custom Install listbox, and then choose the OK button. The Printer Selector window appears. Select all PostScript printers and then choose OK. This will install Equation Editor's fonts for the printers you selected. When you are asked to specify directories for font installation, do not change the directories, so that you don't end up with two copies of the fonts.

Equation Editor Setup: Custom Install

Custom Install lets you choose specific items to install. The available items are listed below. Press on an item for a brief explanation.

[Re-install everything](#)
[Update for Windows 3.1 or later](#)
[Equation Editor application](#)
[Equation Editor Setup application](#)
[Help file](#)
[Fonts for Adobe Type Manager](#)
[TrueType fonts](#)
[Bitmapped screen fonts](#)
[Printer fonts](#)
[PostScript .AFM files](#)
[PostScript Type 1 font files only](#)
[PostScript Type 3 font files only](#)
[HP LaserJet font files only](#)

Select the item(s) you want to install by clicking on them and then choose the OK button. To de-select an item, click on it again. The Equation Editor Setup program will prompt you for any information it needs.

[First Install](#)

[Easy Remove](#)

Re-install everything

This item is just like First Install. It installs everything you need to run Equation Editor and print equations. Re-installing Equation Editor may correct problems if some part of Equation Editor's installation has been accidentally damaged or modified.

Update for Windows 3.1 or later

This item makes changes that account for the differences in the way Windows 3.1 handles fonts as compared to Windows 3.0. Select this item if you upgraded to Windows 3.1 after installing Equation Editor.

Equation Editor application

The basic program file for Equation Editor.

Equation Editor Setup application

The program file for the Equation Editor Setup application, which includes First Install, Custom Install, and Easy Remove. The Setup application may be run from the Equation Editor floppy disk (type <DRIVE>:\install), so it is not necessary for it to be on your hard disk.

Help file

Equation Editor's help file includes information such as keyboard shortcuts, compatibility with other programs, and troubleshooting suggestions. If you are reading this, the Help file is already installed. If you want to remove it, delete the file EQNEDIT.HLP from Equation Editor's directory.

Fonts for Adobe Type Manager

Adobe Type Manager (ATM) scales PostScript Type 1 fonts for your screen and printer. To install Equation Editor's PostScript Type 1 fonts into ATM, make sure ATM is turned on and then choose this item.

TrueType fonts

Equation Editor's fonts in TrueType format. These can only be used with Windows 3.1 or later.

Bitmapped screen fonts

Bitmapped screen versions of Equation Editor's fonts. These are only needed if you have Windows 3.0 (not 3.1). If you change to a different kind of screen display under Windows 3.0, install new screen fonts by choosing this item.

Printer fonts

This item allows you to install Equation Editor's fonts for any PostScript or LaserJet printer currently installed in Windows. If you have a LaserJet printer under Windows 3.1 (not 3.0), you do not need to install printer fonts - use TrueType fonts or ATM instead.

If you have a dot-matrix, HP DeskJet, or other printer, Equation Editor does not supply a specific set of fonts for your printer. You can print on these types of printers if you have Equation Editor's TrueType or Adobe Type Manager fonts installed.

PostScript .AFM files

Font metrics files that you will probably never need.

PostScript Type 1 font files only

Soft fonts that can be used to print Equation Editor equations on most PostScript printers, and which are compatible with ATM (Adobe Type Manager).

PostScript Type 3 font files only

Soft fonts that can be used to print Equation Editor equations on some PostScript compatible printers (generally older PostScript clones).

HP LaserJet font files only

Soft fonts that can be used to print Equation Editor equations on Hewlett-Packard LaserJet printers. If you have Windows 3.1, use Equation Editor's TrueType fonts (or Adobe Type Manager) instead of these LaserJet fonts.

Equation Editor Setup: Easy Remove

You can use this option to remove Equation Editor or to remove printer fonts. When removing Equation Editor, you may choose to keep your Equation Editor settings files and/or fonts. Keeping the settings files is a good idea if you plan to re-install Equation Editor; this will keep all your current preferences intact. You should keep the screen and printer fonts if you want to be able to display and print existing equations after removing Equation Editor.

Removing fonts for a specific printer saves disk space if you no longer use the printer. Also, if you change the printer's port, you may want to remove the fonts from the old port.

[First Install](#)

[Custom Install](#)

Equation Editor Setup: Installing Equation Editor's fonts

When you install Equation Editor using First Install, the setup application will automatically install printer fonts for any PostScript and (under Windows 3.0) LaserJet printers you have installed in Windows. It will also install TrueType fonts if you have Windows 3.1, and fonts for Adobe Type Manager (ATM) if you have ATM installed. Note that for the TrueType fonts to be installed by the setup program, you must have TrueType enabled. Similarly, ATM must be turned on.

If you upgrade to Windows 3.1 or install ATM after installing Equation Editor, you will need to use Custom Install to install the appropriate fonts. Double-click the Equation Editor Setup icon and choose the Custom Install option to display the Custom Install listbox. If you upgrade to Windows 3.1, choose the "Update for Windows 3.1" item - this will install TrueType fonts and make additional necessary modifications. If you install ATM, choose "Fonts for Adobe Type Manager" in the Custom Install listbox. Note again that TrueType and/or ATM must be turned on.

If you install a PostScript printer into Windows after installing Equation Editor, you will need to install Equation Editor's fonts for that printer.

If you install a LaserJet printer into Windows 3.0 (not 3.1) after installing Equation Editor, you will need to install Equation Editor's fonts for that printer.

Double-click the Equation Editor Setup icon and choose the Custom Install option. In the listbox, choose "Printer fonts...". A list of your installed printers will appear. If your printer is not shown in the list, it hasn't been correctly installed into Windows. Select your new printer in the list and choose OK. This will install the appropriate fonts.

Equation Editor Setup: PostScript AFM directory

Equation Editor's Adobe Font Metrics (AFM) files are seldom needed. Users who need these files will typically know how to deal with them. If you install these files, we recommend you use the default directory.

Keyboard index

[Keyboard basics](#)

[Keyboard shortcuts](#)

[Moving the insertion point](#)

[Selecting all or part on an equation](#)

Keyboard basics

You can type characters into the Equation Editor window the same way as in most applications. Equation Editor's blinking insertion point, which initially appears in the single empty slot when you open an Equation Editor window, can be placed in any slot in an equation. Whenever the blinking insertion point is displayed, you can type text. You can also delete text the same way as in most applications.

To type characters from the keyboard

To insert characters from the keyboard into your equation, place the insertion point in the slot you want, and then type the characters. By default, the Math style will be applied to any characters you type, meaning most characters will be in italics and the SPACEBAR will be disabled (since spacing is inserted automatically). If you want to type an English phrase rather than a symbolic expression, switch to Text style to enable the SPACEBAR. For more information on the Text style, see the Style menu and [Typing an English phrase](#).

Another way to enter spaces is to choose the space symbols from the Spaces palette (second from the left on the top row of palettes). There are five different space symbols representing various spaces commonly used in mathematical typesetting. You can also use [keyboard shortcuts](#) to insert these spaces.

To erase the character to the left of the insertion point

- Press the BACKSPACE key.

To erase typing

- Immediately after typing, choose Undo Typing from the Edit menu. This will erase everything you typed since the last non-typing operation. Inserting symbols is treated as typing for the purposes of Undo and Redo commands.

Keyboard shortcuts

Choosing commands from menus

Changing the style of the next character

Inserting symbols

Inserting templates

Inserting spaces

Applying embellishments

Moving the insertion point

Selecting items in equations

Keyboard shortcuts: choosing commands from menus

Edit menu

Edit menu shortcuts are indicated on the menu itself.

View menu

To choose	Press
-----------	-------

100%	CTRL+1
------	--------

200%	CTRL+2
------	--------

400%	CTRL+4
------	--------

Redraw	CTRL+D
--------	--------

Style menu

To choose	Press
-----------	-------

Math	CTRL+SHIFT+=
------	--------------

Text	CTRL+SHIFT+E
------	--------------

Function	CTRL+SHIFT+F
----------	--------------

Variable	CTRL+SHIFT+I
----------	--------------

Greek	CTRL+SHIFT+G
-------	--------------

Matrix-Vector	CTRL+SHIFT+B
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Keyboard shortcuts: changing the style of the next character

These keyboard shortcuts change the style of the next character you type. When you press the shortcut keys, the Status Bar displays the name of the corresponding style to let you know that a special mode is in effect. After you have inserted one character, Equation Editor continues with the previous style.

To assign this style	Press
Symbol	CTRL+G
Matrix-Vector	CTRL+B

The Symbol shortcut is very handy for inserting Greek letters.

Keyboard shortcuts: inserting symbols

- Press and release CTRL+K, and then type a character that represents a commonly used symbol. The table below summarizes these symbol shortcuts.

If you press CTRL+K followed by some character, the results will be as follows:

To insert	Press CTRL+K, then
∞	I
→	A
∂	D
≤	SHIFT+<
≥	SHIFT+>
×	T
€	E
⌘	SHIFT+E
∩	C
♀	SHIFT+C











Note that all of these symbols are characters from the Symbol font, so they can also be inserted by using their ALT key character codes.

Keyboard shortcuts: inserting templates

There are two types of keyboard shortcuts for inserting templates.

















- Press CTRL+x, where x is a character that represents a common template. These shortcuts are summarized in [Inserting Templates: Table I.](#)
- Press and release CTRL+T, and then type a character that represents a template. These shortcuts are summarized in [Inserting Templates: Table II.](#) Many of the CTRL+T shortcuts perform the same actions as the CTRL+x shortcuts. However, the CTRL+T shortcuts are preferred, since they will never conflict with current or future menu shortcuts.

Inserting Templates: Table I

To insert	Press
	CTRL+(or CTRL+)
	CTRL+[or CTRL+]
	CTRL+SHIFT+{ or CTRL+SHIFT+}
	CTRL+F
	CTRL+ /
	CTRL+H
	CTRL+L
	CTRL+J
	CTRL+R
	CTRL+I





Inserting Templates: Table II

To insert Press CTRL+T, then

-  SHIFT+(or SHIFT+)
-  [or]
-  SHIFT+{ or SHIFT+}
-  |
-  F
-  /
-  H
-  L
-  J
-  R
-  N
-  S
-  P
-  I
-  M
-  U

Keyboard shortcuts: inserting spaces







In Equation Editor, the SPACEBAR is disabled unless your current style is Text. However, when you're using the Math style or any other style, you can still insert spaces of various sizes by choosing space symbols from the Spaces palette, or by using these keyboard shortcuts.

To insert	Description	Press
	Zero space	SHIFT+SPACEBAR
	One point space	CTRL+ALT+SPACEBAR
	Thin space	CTRL+SPACEBAR
	Thick space	CTRL+SHIFT+SPACEBAR

You can always create larger spaces by using several smaller spaces in succession. Note that a thick space is exactly twice as wide as a thin space, so you can produce a thick space by pressing CTRL+SPACEBAR twice.

Keyboard shortcuts: applying embellishments

These keyboard shortcuts attach the indicated embellishment to the character to the left of the insertion point.

To apply	Description	Press
	Over-bar	CTRL+SHIFT+HYPHEN
	Tilde	CTRL+SHIFT+~ (CTRL+SHIFT+" on some keyboards)
	Arrow (vector)	CTRL+ALT+HYPHEN
	Single prime	CTRL+ALT+'
	Double prime	CTRL+SHIFT+" (CTRL+SHIFT+~ on some keyboards)
	Single dot	CTRL+ALT+.

Keyboard: moving the insertion point

The keyboard methods for moving the insertion point are:

- Press the LEFT, RIGHT, UP, or DOWN arrow keys. These keys move the insertion point one character at a time or to the next slot.
- Press the TAB key. This moves the insertion point from slot to slot. You can cycle through every slot in an equation by repeatedly pressing the TAB key. If you hold down the SHIFT key while pressing the TAB key, the insertion point will move in the opposite direction.
- Press the INSERT key. This has the same effect as pressing the TAB key.

Keyboard: selecting all or part of an equation

To select an entire equation

You can select your entire equation, including any portions not visible because they are outside the window border, by pressing CTRL+A (the keyboard shortcut for the Select All command).

To select symbols that are parts of templates

Using the CTRL key, you can select a symbol that is part of a template (rather than within one of the slots in the template). These symbols cannot be selected using the ordinary methods. The class of symbols affected includes character embellishments, summation signs, and expanding fences. If you hold down the CTRL key, the pointer changes from a diagonal arrow into a vertical one. You can then select the symbol by clicking it with the vertical arrow pointer.

To select a portion of an equation

If you press the SHIFT key as you move the cursor using the LEFT ARROW and RIGHT ARROW keys, the insertion point selects whatever items it passes through as it moves.

Menu commands

Control menu

File menu

Edit menu

View menu

Format menu

Style menu

Size menu

Help menu

Menu commands: Control menu

Clicking the horizontal bar (called the Control Bar) just above the File menu displays the Control menu. Most of the commands on this menu are standard Windows commands that adjust the size, location, and status of the Equation Editor window. There are also commands that display the Windows Control Panel and Clipboard.

Close

Closes the Equation Editor window and quits the Equation Editor application (if no other equation windows are open). Also, if you opened the Equation Editor window using your word processor's Insert Object command, the equation is inserted into your word processing document. This command is equivalent to the Exit command on the File menu, or double-clicking the Control Bar.

Clipboard

Displays the Windows Clipboard, a temporary storage area used when moving text and graphics. For more information, see your Windows manual.

Control Panel

Displays the Windows Control Panel, which allows you to install fonts, choose printers, and change a variety of settings. For more information, see your Windows manual.

Menu commands: File menu

The File menu commands are used to transfer equations into your document, or to end your Equation Editor session.

Update

Transfers your equation into the word processing document without closing the Equation Editor window. This command not available unless you opened the Equation Editor window using your word processor's Insert Object command.

Exit

Closes the Equation Editor window and quits the Equation Editor application (if no other equation windows are open). Also, if you opened the Equation Editor window using your word processor's Insert Object command, the equation is inserted into your word processing document.

Menu commands: Edit menu

The Edit menu commands modify the equation in various ways. You can use these commands to move or copy portions of the equation from one place to another by placing them on the Clipboard.

Undo

Reverses the last action you performed. If the last action was an Undo, choosing this command reinstates the action that was reversed. If Equation Editor cannot reverse the last action, this command will appear dimmed in the menu.

Cut

Transfers the currently selected items to the Clipboard, and deletes them from the equation. The previous contents of the Clipboard are lost, even if you undo the Cut command.

Copy

Copies the currently selected items to the Clipboard without deleting them from the equation. The previous contents of the Clipboard are lost.

Paste

Copies the contents of the Clipboard into the equation at the insertion point, or replaces whatever is selected. If the Clipboard's contents can't be used by Equation Editor, the Paste command is unavailable.

Clear

Removes the currently selected items from the equation. This command does not affect the contents of the Clipboard.

Select All

Selects the entire equation, including any portions not visible because they are outside the window border. This command is useful for copying the equation to the Clipboard for transfer into a document.

Menu commands: View menu

The View menu commands affect the way equations are displayed in the Equation Editor window.

100%

Displays the equation in the current window at its actual size - that is, the same size as it will appear in a document or when printed.

200%

Displays the equation in the current window at twice its actual size. For most work, this is a good compromise between actual size (100%) and maximum magnification (400%). This command has no effect on the eventual size of the equation in your document.

400%

Displays the equation in the current window at four times its actual size. This is useful for viewing small characters, or for performing minor adjustments using the Nudge commands. This command has no effect on the eventual size of the equation in your document.

Redraw

Redisplays the equation in the current window at the current magnification. This is useful for cleaning up the display.

Show All

Turns on and off the display of certain special symbols in equations, including tab characters and explicit spaces.

Menu commands: Format menu

The Format menu is used to control the positioning of equations or portions of equations. The first five commands control the horizontal alignment of lines in piles. To use these commands, the current selection or insertion point must be in a pile.

Align Left

Moves lines horizontally to align their left-most characters.

Align Center

Moves lines horizontally to align their centers.

Align Right

Moves lines horizontally to align their right-most characters.

Align at =

Moves lines horizontally to align = signs and other equality and inequality signs with one another.

Align at Decimal

Moves lines horizontally to align decimal points with one another. The decimal points may be periods or commas, depending on your country's conventions.

Matrix

Modifies a previously created matrix. To use this command, either select the matrix to modify, or place the insertion point somewhere within it. The dialog box that appears is the same one you use when initially creating matrices. For more information, see [The Matrix dialog box](#).

Spacing

Displays the [Spacing dialog box](#), through which you can specify various dimensions that control the position of items in equations.

Menu commands: Style menu

The Style menu commands are used to assign fonts and styles to selected characters or to characters that you type subsequently, either through Equation Editor's system of styles or an explicit font choice. See also [Choosing fonts](#).

Math

Assigns the Math style either to selected characters or to characters that you type subsequently. When creating equations, it's best to use the Math style primarily, and switch to other styles only in the event that the default formatting isn't what you want. The Math style differentiates between functions, variables, numbers, and symbols, and formats the characters accordingly.

Text

Assigns the Text style either to selected characters or to characters that you type subsequently. This style activates the SPACEBAR on your keyboard, disables Equation Editor's automatic spacing, and formats characters in Text style (which usually means plain roman), making it easier to type ordinary text with Equation Editor. See also [Typing an English phrase](#).

Function

Assigns the Function style either to selected characters or to characters that you type subsequently. This command is useful for applying the Function style to a function abbreviation that Equation Editor doesn't recognize.

Variable

Assigns the Variable style either to selected characters or to characters that you type subsequently. This command is useful in situations where Equation Editor recognizes a sequence of characters as a function abbreviation, when in the context of your equation the characters should be formatted as variables.

Greek

Assigns one of the two Greek styles either to selected characters or to characters that you type subsequently. Lower case characters are assigned the L.C. Greek style, and upper case ones are assigned the U.C. Greek style. If you press CTRL+G, then the next character you type will be assigned the Greek style; after one character Equation Editor will continue with the previous style. You can fully invoke the Greek style command by pressing CTRL+SHIFT+G.

Matrix-Vector

Assigns the Matrix-Vector style either to selected characters or to characters that you type subsequently. If you press CTRL+B, then the next character you type will be assigned the Matrix-Vector style; after one character Equation Editor will continue with the previous style. You can fully invoke the Matrix-Vector style command by pressing CTRL+SHIFT+B.

Other

Assigns a font and character style explicitly either to selected characters or to characters that you type subsequently.

Define

Displays the [Styles dialog box](#), through which you can change the font and character style assignments for Equation Editor's styles.

Menu commands: Size menu

Each of the commands on the Size menu is used to assign a specific typesize either to a selected group of characters or to characters that you type subsequently. See also [Choosing font sizes](#).

Full

Assigns the Full typesize either to selected characters or to characters that you type subsequently.

Subscript

Assigns the Subscript typesize either to selected characters or to characters that you type subsequently.

Sub-subscript

Assigns the Sub-subscript typesize either to selected characters or to characters that you type subsequently.

Symbol

Assigns the Symbol typesize either to selected characters or to characters that you type subsequently.

Sub-symbol

Assigns the Sub-symbol typesize either to selected characters or to characters that you type subsequently.

Other

Allows you to choose any point size for selected characters or to characters that you type subsequently.

Define

Displays the [Sizes dialog box](#), through which you can change the typesizes assigned to the first five Size commands.

Menu commands: Help menu

The Help menu commands provide information about Equation Editor. The first five commands display topics in Equation Editor's Help file.

Index

Lists available Help topics for Equation Editor.

Keyboard

Explains keyboard techniques for using Equation Editor, including keyboard shortcuts for many Equation Editor operations.

Commands

Explains each of the commands on Equation Editor's menus.

Procedures

Provides step-by-step instructions for using Equation Editor.

Troubleshooting

Provides information on specific problems you may encounter using Equation Editor.

Using Help

Provides a short tutorial and other information about using Windows Help.

About

Displays the version number of your copy of Equation Editor.

The Sizes dialog box

You can change the typesizes that Equation Editor uses through this dialog box. If you click in one of the boxes containing typesize data, the graphic in the dialog box will show characters that would be affected by changing that value.

To change a typesize

1. Click in the box containing the typesize you want to change.
2. Enter the new typesize, using Equation Editor's system of units (see [Entering data in a dialog box](#)). It's often a good idea to specify a typesize as a percentage of your Full typesize, because then you won't need to change it in the event that you change your Full typesize. To do this, enter a number followed by %.

Default

Sets all typesizes to their default values, which are the standard sizes for creating equations in documents with 12 point text.

Apply

Displays your equation using the new typesizes, letting you preview their effect. The dialog box remains open.

Cancel

Allows you to quit the Sizes dialog box without making any changes, even if you previously clicked Apply.

Entering data in a dialog box

When you specify typesizes or dimensions, you must use Equation Editor's system of units. The default unit of measurement is points, so if you just type a number points will be assumed. This table shows the available unit abbreviations:

For this unit	Type a number followed by
----------------------	----------------------------------

Inches	in
Centimeters	cm
Millimeters	mm
Points	pt
Picas	pi
Percent of full size	%

The Matrix dialog box

The Matrix dialog box appears when you choose one of the bottom three templates in the matrix palette, or when you choose Matrix from the Format menu. This dialog box allows you to specify the number of rows and columns in your matrix, and how they are aligned. You can also create tables, or boxes around equations.

Column align

Horizontally positions the entries in each column according to the option you choose. The alignment options are the same as those on the Format menu.

Equal column widths

Adjusts column widths so that each column is the width of the widest one, as determined by the widest column entry. If this is not checked, Equation Editor determines the width of each column individually.

Row align

Vertically positions the entries in each row according to the option you choose.

Equal row heights

Adjusts row heights so that each row is the height of the tallest one, as determined by the tallest row entry. If this is not checked, Equation Editor determines the height of each row individually.

Row and column spacing

You can adjust row and column spacing using the Spacing command on the Format menu. In the Spacing dialog box, change the Matrix Column Spacing and Matrix Row Spacing parameters.

Partition lines, tables, and boxes

If you click in the gaps between the matrix cells in the dialog box, you can create various types of lines to partition the matrix. Your first click produces a solid line, clicking it again changes it to a dashed line, a third click makes it dotted, and a fourth click removes it. You can also click around the outside of the matrix cells to create lines around the edge of the matrix. By placing lines between matrix cells and/or around the edge of the matrix, you can construct tables.

To enclose an equation in a box, first create a 1 × 1 matrix with solid lines around its edges (i.e., a box). Then, create the equation within the single matrix slot.

The Styles dialog box

Each row in this dialog box gives the current definition of one of Equation Editor's eight styles.

Font

The Font column shows the name of the font currently assigned to each style. You can select new fonts in the dialog box. The available fonts will depend on the default printer you have selected.

Character Style

The two Character Style columns allow you to assign bold or italic character style to each font.

Generally, you should define the styles as follows:

For this style	Use this font
-----------------------	----------------------

Text	The font used for text in your document
Function	Same as Text
Variable	Same as Text, italic
L.C. Greek	Symbol
U.C. Greek	Symbol
Function	Symbol
Matrix-Vector	Same as Text, bold
Number	Same as Text

Cancel

Closes the Styles dialog box without altering anything.

OK

Updates the style definitions to the new ones you have selected. Any equations in open Equation Editor windows will be reformatted to reflect the changes. Equations saved in documents will not be affected unless you bring them back into Equation Editor.

For more information, see [Choosing fonts](#) and [Style menu commands](#).

The Spacing dialog box

Equation Editor's automatic spacing is controlled by the dimensions you specify in this dialog box. There are 19 different values you can change, as you can see if you scroll through the list. If you click in one of the boxes containing dimension data, the graphic display on the right in the dialog box will show you the meaning of that dimension.

To change a dimension

1. Click in the data box corresponding to the dimension you want to change.
2. Type in the new dimension, using Equation Editor's system of units (see [Entering data in a dialog box](#)).

It's often a good idea to specify a dimension as a percentage of your Full typesize (the size of most equation characters), because then you won't need to change it in the event that you change typesizes. You can do this by typing a number followed by a % sign.

Piles

A pile is created when you press ENTER. A new line appears beneath the current one. You can type an expression on the new line, press ENTER again, and so forth, forming a vertical stack. A pile can be created from any position in an equation. There could be several piles within an equation, or you could have a pile of equations.

The Math style

When the Math style is in effect, Equation Editor analyzes selected characters or characters you type subsequently to determine their style. It applies the Function style to standard function abbreviations, such as sin for the sine function. The Variable style is used for other alphabetic characters. The Number style is applied to numbers, and the Symbol style is used for operators and other symbols.

Procedures index

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Procedures: inserting symbols and templates

Equation Editor's symbols and templates are contained in the two rows of palettes across the top of the Equation Editor window. The uppermost row contains symbols, and the lower row contains templates.

To insert a symbol or template

To insert a symbol or template from a palette:

1. Position the arrow pointer over a symbol or template palette.
2. Press and hold the mouse button to display the contents of the palette.
3. While holding the mouse button, drag the pointer to the symbol or template you want to insert.
4. When the symbol or template is highlighted, release the mouse button.

Symbols are single characters such as logic symbols, set theory symbols, and Greek characters. Templates are symbols combined with one or more empty slots, which provide a framework for creating basic mathematical constructs such as fractions and integrals. You insert a template and then fill in its empty slots.

You can also insert symbols and templates using [keyboard shortcuts](#).

Procedures: choosing fonts

Equation Editor's "styles" determine the fonts that are used as you create equations. You can define the styles with the fonts of your choice. When you're working in the Math style mode, Equation Editor analyzes characters as you type to determine their style. It applies the Function style to standard function abbreviations, such as sin for the sine function. The Variable style is used for other alphabetic characters. The Number style is applied to numbers, and the Symbol style is used for operators and other symbols. Once you have chosen fonts that you like for each style, Equation Editor's automatic style assignments will give you the results you want most of the time. However, there may be cases where you would like to override a style assignment, or assign a font that's not used in any of the style definitions.

[To define Equation Editor's styles](#)

[To over-ride a font choice](#)

To define Equation Editor's styles

The choices of font and character style for each style are made by using the Define command on the Style menu.

1. Choose Define from Equation Editor's style menu.
2. Select the fonts you want using the font menus in the dialog box. The fonts shown are those available on your default printer.
3. To specify a bold or italic character style, click the corresponding check box. Click again to clear the character style.

For the Text, Function, and Number styles, you will probably want to use the same font as you use for text in the document in which you place your equations. By convention, the Variable style should be the text font with italic character style, and the Vector-Matrix style should be the text font with bold character style. The Greek and Symbol styles should always use the Symbol font.

When you change style definitions, all equations in open Equation Editor windows will be redrawn using the new fonts. Equations that are saved in documents will not be affected unless you bring them back into Equation Editor.

To over-ride a font choice

To apply a different style or explicitly choose a font:

1. Do one of the following:

- _____ Select the characters to be assigned the new font or style.
- _____ Position the insertion point where you want the new font or style to begin.

2. From the Style menu, do one of the following:

- _____ Choose one of the styles.
- _____ Choose the Other command. This displays a dialog box with a list of the fonts available on your default printer. Select the font you want, and click the appropriate check box if you want bold or italic character style.

Procedures: choosing font sizes

Equation Editor automatically assigns one of five font sizes to each character you insert, depending on its position in the equation. These default font sizes are defined using the Define command on the Size menu.

The five sizes correspond to the first five commands on the Size menu. A check mark in the Size menu indicates which size is currently assigned. You can over-ride a font size by choosing a different option from the Size menu, or you can specify a size not used in the size definitions.

To change Equation Editor's default sizes

To explicitly choose a size

To change Equation Editor's default sizes

To change the font sizes that Equation Editor applies:

1. Choose Define from Equation Editor's Size menu.
2. Click in the box containing the size data you want to change. The graphic display on the right in the dialog box shows which characters will be affected by the change.
3. Type in the new size, using Equation Editor's system of units (see [Entering data in a dialog box](#)).

When change size definitions, all equations in open Equation Editor windows will be redrawn using the new sizes. You can click the Apply button to see the effect of your changes before keeping them. Equations that are saved in documents will not be affected unless you bring them back into Equation Editor.

To explicitly choose a size

To explicitly choose the font sizes of specific characters or words:

1. Do one of the following:

- Select the characters to be assigned the new font size.
- Place the insertion point where you want the new font size to begin.

2. From the Size menu, do one of the following:

- Choose one of the sizes.
- Choose the Other command. This displays a dialog box that allows you to specify any point size.

Procedures: importing an equation into a document

There are two methods of transferring the contents of the Equation Editor window into your document. If your word processor has an Insert Object command and you use that command to start Equation Editor, you can return the finished equation to your document by choosing the Exit command on Equation Editor's File menu (or by double-clicking the Control Bar). This will insert the equation into your document automatically, replacing any previous version.

Alternatively, you can use the Clipboard to transfer equations from the Equation Editor window into your document, as follows:

1. Select the entire equation. Two ways of doing this are:
 - From the Edit menu, choose Select All.
 - Double-click the equation near the equal sign (=).
2. To transfer the equation to the Clipboard, choose Cut or Copy from Equation Editor's Edit menu.
3. Click your document to make it active.
4. To place the equation in your document, choose Paste from your word processor's Edit menu.

Procedures: typing an English phrase

To type a brief non-mathematical phrase such as "for all" in an expression like

$$|x_n - x_0| < \varepsilon \text{ for all } n \geq N$$

use the Text style. This will enable the SPACEBAR and, if you have Equation Editor's styles defined in the recommended way, this will apply plain roman character style to the text phrase. The steps are as follows:

1. Place the insertion point where you want the phrase to start.
2. Do one of the following:
 - From the Style menu, choose Text.
 - Press CTRL+SHIFT+E.
3. Type the phrase.
4. To return to the Math style, do one of the following:
 - From the Style menu, choose Math.
 - Press CTRL+SHIFT+=.

For more information about the recommended style definitions, see [To define Equation Editor's styles.](#)

Procedures: Adjusting an item's position

With the Nudge commands, you can make minor adjustments to the layout of your equation. For example, you can move a subscript or a superscript, the limits of a summation, or the bar over an X either horizontally or vertically in steps as small as 1/4 of a point.

To reposition part of an equation:

1. Select the part of the equation that you want to reposition. To select an embellishment or another item that's part of a template, you must use the CTRL key -- see [Keyboard: selecting all or part of an equation](#) for more information.
2. Nudge the selected items by using the arrow keys:

To Nudge	Press
----------	-------

To the left	CTRL+LEFT ARROW
-------------	-----------------

Upwards	CTRL+UP ARROW
---------	---------------

Downwards	CTRL+DOWN ARROW
-----------	-----------------

To the right	CTRL+RIGHT ARROW
--------------	------------------

The selected items are moved in small increments in the indicated direction. The size of the increment depends on the current display scale: at 100%, the increment is 1 pt; at 200%, it's 1/2 pt, and at 400%, it's 1/4 pt.

Note: to adjust Equation Editor's overall formatting, rather than repositioning individual characters, use the Spacing command on the [Format menu](#).

Procedures: aligning parts of an equation

There are several ways you can align rows of expressions. For example, you can align a column of numbers at their decimal points, or align a series of equations at their equal signs. To achieve the desired alignment, you can use the alignment commands on the Format menu, or you can use a matrix template. In addition, in some cases it may be useful to insert alignment symbols.

The alignment commands on the Format menu apply to piles created by pressing the ENTER key.

To align a pile:

1. Do one of the following:
 - Select the pile.
 - Position the insertion point within the pile.
2. Choose a command from the Format menu.

A matrix template may be more appropriate in some situations. The rows and columns in a matrix can be aligned horizontally and vertically. Matrix rows, like the rows in a pile, can be aligned left, right, or center, or at decimal points or equal signs. For more information, see The Matrix dialog box.

Another alignment tool is the alignment symbol (Δ), which over-rides the alignment position established by either the Format Menu commands or Matrix formatting. To set the alignment position for a given row using this symbol, place the insertion point at the desired position within the row, and then choose the

Δ icon from the Spaces palette. You will see the effect immediately.

Alignment symbols will not display when you import the equation into a document, and they will not print.

The default printer

There is always a default printer chosen from among the printers you have installed in Windows. Your choice of default printer can affect what fonts are available to Equation Editor. To change the default printer, click the Printers icon in the Windows Control Panel.

Troubleshooting index

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Troubleshooting: Overview of printing equations

Equation Editor comes with two special fonts for printing equations: Fences and MTExtra. In addition, Equation Editor's Symbol font or a standard Windows Symbol font (such as the one that comes with Adobe Type Manager) is required. You can print equations on any type of printer provided these fonts are properly installed for your printer. Equation Editor supplies PostScript Type 1 fonts for PostScript printers and Adobe Type Manager, HP LaserJet (PCL) fonts for LaserJet printers, and TrueType fonts, which may be used for printing on various types of printers including dot-matrix and HP DeskJet models. When you install Equation Editor, the fonts you need are automatically installed for each printer you have installed in Windows.

Sometimes, due to any number of factors, fonts are not properly installed into Windows. You can usually correct the situation by re-installing the fonts. In Equation Editor's case, the easiest way to do this is usually to re-install the Equation Editor application. Since it's a small application, re-installing will not take too much time.

Note: if you have Windows 3.0 instead of 3.1, you will not be able to print on dot-matrix and HP DeskJet printers, and you will only be able to print on HP LaserJet printers at specific point sizes, unless you use Adobe Type Manager (ATM). For these reasons, we strongly recommend you either upgrade to Windows 3.1 or obtain a copy of ATM.

Troubleshooting: Equation Editor's fonts not available on default printer

Equation Editor's fonts have to be installed separately for each printer/port combination you want to print equations on. If you get a "fonts not available on default printer" message, Equation Editor's fonts have not been installed for the current default printer. The reason may be that you installed the default printer after installing Equation Editor. Re-installing Equation Editor will correct the situation. Or, you can change the default printer to one for which Equation Editor's fonts have been installed.

If you have Windows 3.0 instead of 3.1 and you're printing on an HP LaserJet, another possibility is that you're printing in Landscape orientation, rather than Portrait orientation. Try changing the page orientation using the LaserJet printer driver. You can print in either orientation if you use Adobe Type Manager.

Troubleshooting: Equation Editor's screen fonts not available

If you get this message, you may have inadvertently removed Equation Editor's screen fonts, or changed to a new type of screen display. You can obtain the fonts you need by re-installing Equation Editor.

Troubleshooting: Font & Style X not available on the default printer; Y was substituted

You may get this error message after you have changed the default printer using the Windows Control Panel, or after you have installed (or removed) some fonts. It means that Equation Editor cannot find a font used in the definition of one of its styles. This is not a serious problem if there are other fonts on your new default printer that are acceptable. Use the Define command on Equation Editor's style menu to change fonts.

Another way to get around the problem is to change to a default printer that has the fonts you need. Or you may be able to install the fonts for your new default printer, using the installation program that came with the fonts.

Troubleshooting: equations display incorrectly in a document

After you have imported an equation into a document, it may sometimes be displayed using the wrong fonts or sizes. Some possible causes are:

- You removed screen or printer fonts that are used by the equation. If a screen font is missing, the equation should print properly. If a printer font is missing, you must re-install it.
 - The default printer has changed since the equation was created, and the fonts used by the equation are not available on the new default printer. To fix this, you can either change the default printer (using the Windows Control Panel), install the fonts for the current default printer, or edit the equation and choose different fonts.
 - Windows is choosing the wrong screen font or handling italics poorly. You can't do anything about this, but it will not affect the printing of the document.
 - Some word processors do not retain the proper size of equations. You may be able to work around this by resizing your equation within the document, perhaps by explicitly assigning height and width values to the equation graphic.
- Overall, equations will display more consistently if you use TrueType fonts or Adobe Type Manager.

Troubleshooting: HP LaserJet prints characters at the wrong sizes

Characters in equations printed on an older HP LaserJet printer (such as a LaserJet II) under Windows 3.0 might appear at unexpected sizes. This is caused by the printer not having access to the right font sizes. The PCL fonts normally used on these types of printers are not scalable, so you have to have a separate PCL font for each different size you use. Equation Editor's PCL fonts come in the sizes commonly used for equations in documents with 12 pt text. If you want to use other sizes, you will need to either upgrade to Windows 3.1 so that you can use Equation Editor's TrueType fonts (which can be scaled to any size), or use Adobe Type Manager (which can scale Equation Editor's PostScript fonts to any size). After upgrading Windows or installing Adobe Type Manager, you will need to re-install Equation Editor to install the scalable fonts.

