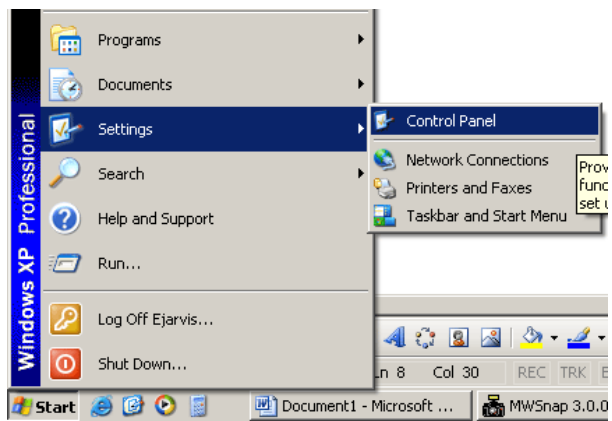
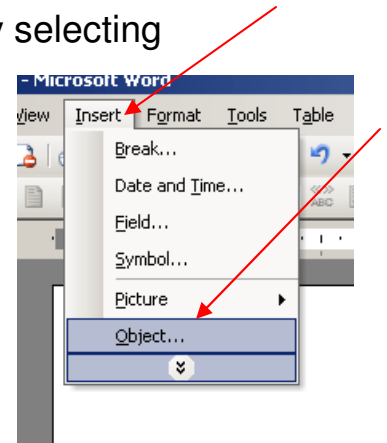


Microsoft Equation Editor

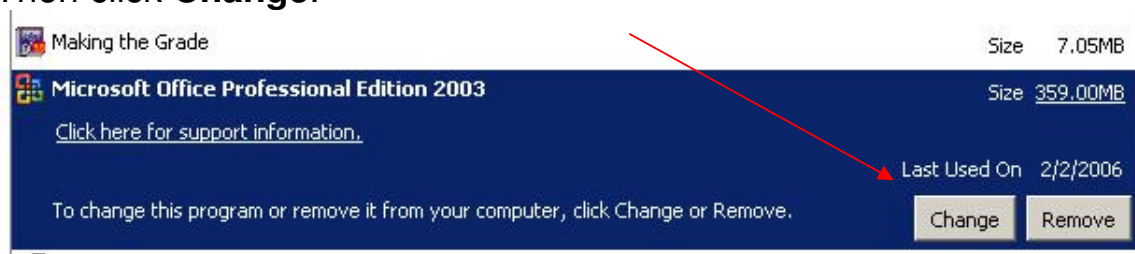
1. Microsoft Equation Editor is accessed within Word by selecting Insert ⇒ then Object. From there, you'll see a list of program "add-ons." If Microsoft Equation is not present, you'll need to follow the steps below to install it on your computer.
2. Quit Microsoft Word
3. Begin installing by clicking **Start** ⇒ then **Settings** ⇒ Followed by **Control Panels**.



4. Once in the Control Panels, click on **Add or Remove Programs**.



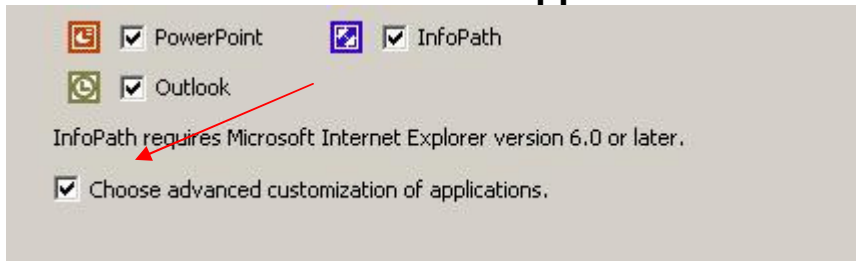
5. Once there, select Microsoft Office Professional Edition 2003. Then click **Change**.



6. Then click on the option that states **Add or Remove Features**.

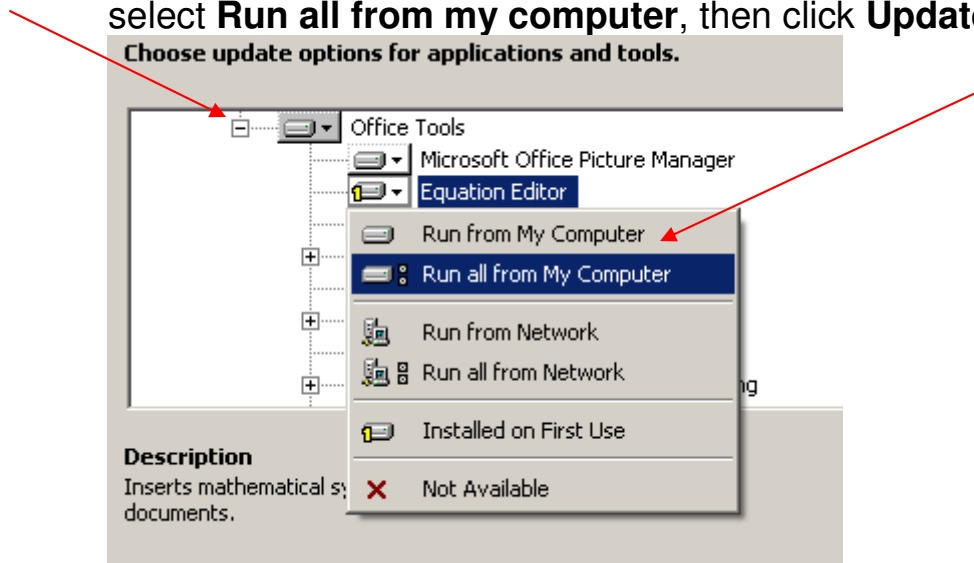


7. After clicking Next, Select the check box that states **Choose Advanced Customization of Applications**.



8. After clicking Next, click the maximize option (plus sign) next to **Office Tools**.

9. Finally, click on the drop-down menu next to **Equation Editor**, select **Run all from my computer**, then click **Update**.

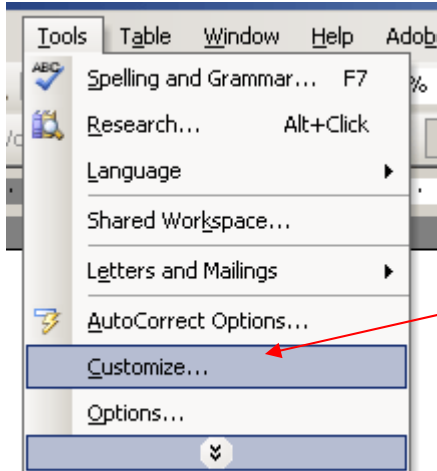


10. Clicking update should start the installation process. If you are asked to install a disk, contact Eric Jarvis at ejarvis@slcusd.org. A disk with that feature can be provided for you.

11. Open Microsoft Word. Select Insert ⇒ followed by **Object** ⇒ followed by ⇒ **Microsoft Equation 3.0**.

Placing a shortcut button to Equation Editor on your toolbar

12. Go to **Tools** ⇒ then **Customize...**



13. Select **Commands**; then click **Insert** on the left side of the pop-up window; select **Equation Editor** on the right side of the menu. You may have to scroll down to find the **Equation Editor** icon.



14. Once you've found the Equation Editor icon, drag it to your Standard tool bar. I placed mine right next to the save icon.



Below are some basic instructions on using Microsoft Equation Editor that were created by Steve Simonds of Portland Community College.

Basic operation of the Equation Editor

Once your Equation Editor button is in place, all you need to do to open an Equation Box is left-click that button. Upon your click an Equation Box like that shown in Figure 2 will appear as well as the Equation Editor Menu shown in Figure 3. (As a side note I should mention that the Equation Editor Menu has the unfortunate habit of sometimes opening directly on top of the location at which you are typing. ☹ Should this happen, simply left-click and drag the solid strip across the top of the box until the box is out of the way.)

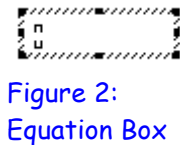


Figure 2:
Equation Box

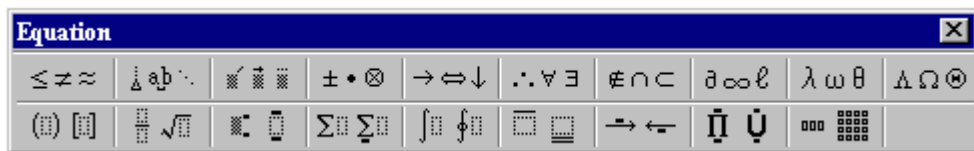


Figure 3: Equation Editor Menu

The Equation Editor Menu can be used to insert both symbols and templates for complicated mathematical expressions. For example, Figure 4 shows what you click to insert the Pi symbol; Figure 5 shows what to click to insert a fraction template.

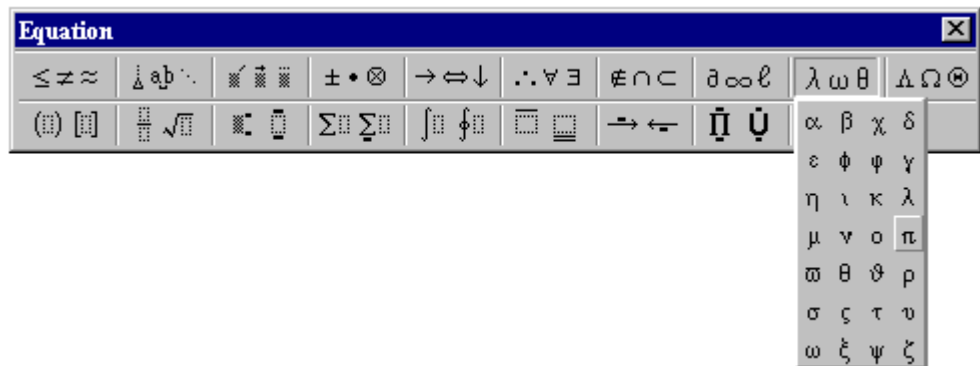


Figure 4: Inserting a Pi symbol

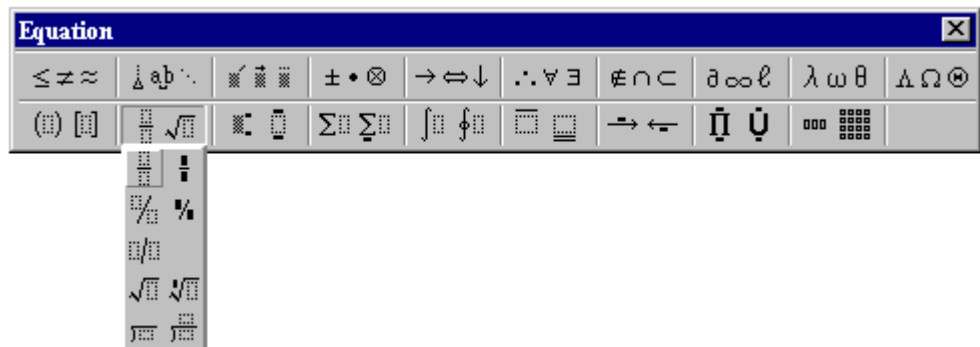


Figure 5: Inserting a Fraction Template

Once a template has been inserted into your Equation Box, you need to look and see where inside the template the cursor is flashing. You then go ahead and type the information that goes into *that* location. To move to the *next* location in the template you press the **Tab** key. You also press the **Tab** key to exit the template. When you are done typing in your expression, you left-click anywhere outside of the Equation Box. If you need to edit an existing Equation Box you simply double-click anywhere over the expression contained within the box.

Shortcut Keys are your very best friend

Mousing all of your math symbols and templates gets real old real fast; thankfully there are shortcut keys that enable you to avoid your mouse in most circumstances. The shortcut keys are found in the Help Menu *when you have an Equation Box open*. I have copied the most commonly used shortcut keys into figures 6, 7, and 8.

















To insert	Template	Press
	Parentheses	CTRL+9 or CTRL+0
	Brackets	CTRL+[or CTRL+]
	Braces	CTRL+{ or CTRL+}
	Fraction	CTRL+F
	Slash fraction	CTRL+I
	Superscript (high)	CTRL+H
	Subscript (low)	CTRL+L
	Joint sub/superscript	CTRL+J
	Integral	CTRL+I
	Absolute value	CTRL+SHIFT+T,
	Root	CTRL+R
	<i>n</i> th root	CTRL+T, N
	Summation	CTRL+T, S
	Product	CTRL+T, P
	Matrix template 3X3	CTRL+T, M
	Underscript (limit)	CTRL+T, U

Figure 6: Shortcut Keys for selected Math Templates

Applying embellishments in an equation using ke

You can attach an embellishment to the character to the left of the insertion point with keyboard shortcuts.







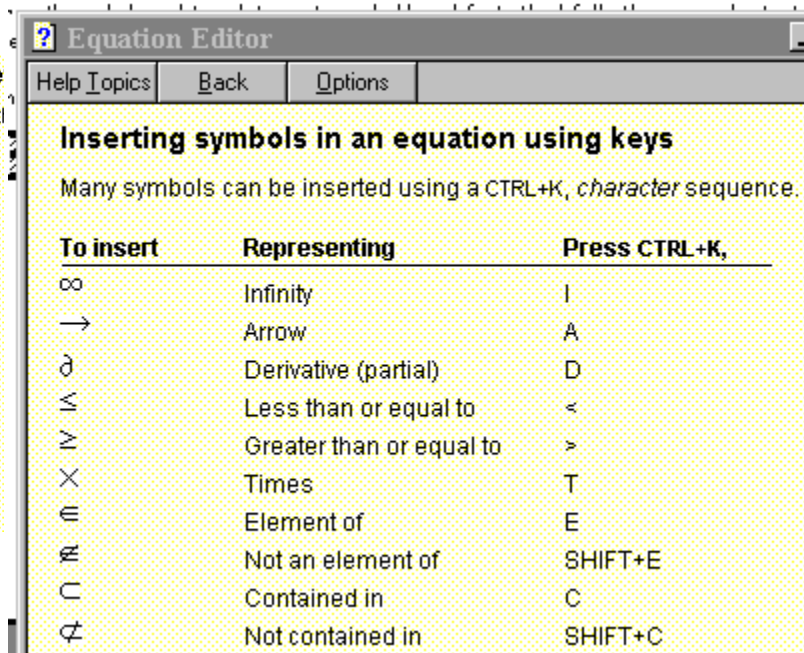
To apply	Description	Press
	Overbar	CTRL+SHIFT+HYPHEN
	Tilde	CTRL+~ (CTRL+SHIFT+~ on some keyboards)
	Arrow (vector)	CTRL+ALT+HYPHEN
	Single prime	CTRL+ALT+'
	Double prime	CTRL+~ (CTRL+SHIFT+~ on some keyboards)
	Single dot	CTRL+ALT+PERIOD

Figure 7: Shortcut Keys for *after the fact* symbol Embellishments



To insert	Representing	Press CTRL+K,
∞	Infinity	I
\rightarrow	Arrow	A
∂	Derivative (partial)	D
\leq	Less than or equal to	<
\geq	Greater than or equal to	>
\times	Times	T
\in	Element of	E
\notin	Not an element of	SHIFT+E
\subset	Contained in	C
$\not\subset$	Not contained in	SHIFT+C

Figure 8: Shortcut keys for selected math symbols

Simonds' tips on using the equation editor

- **Always** add a full space **before and after** an equal sign, **before and after** a plus or minus sign, **after** a limit sign or integral sign, and **before each** limit on a definite integral. A full space is created inside an equation box by pressing **Ctrl+Shift+Space Bar**.
- Always add a half space between a coefficient and a variable and before and after the arrow sign in a limit. A half space is created by pressing **Ctrl+Space Bar**.
- To line up your equal signs (☺) you need to use the format/align option shown in Figure 9.

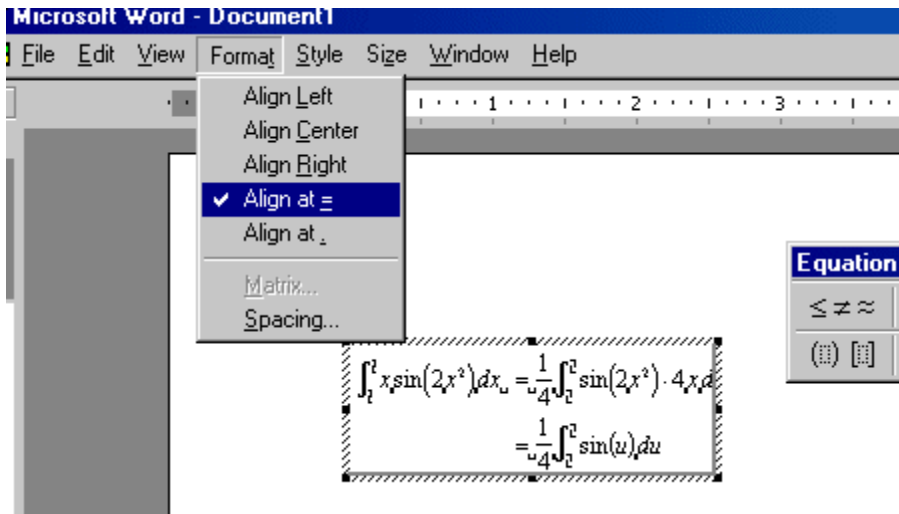


Figure 9: Gotta' line up them equal signs!

- You can add *text* inside an Equation box by selecting **Style - Text** from the toolbar menu. (See Figure 10.)

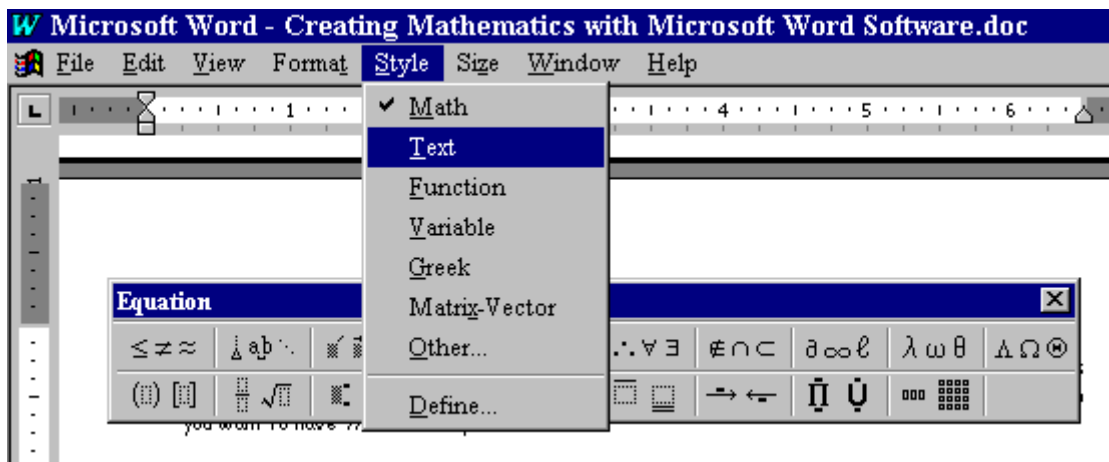


Figure 10: Adding *text* inside an Equation Box

- Sometimes you might want to insert text along with a multistep simplification or other type process. One way to achieve this is with a matrix. For example, the simplification shown in Figure 11 was typed using a matrix with 7 rows and two columns. The style used in the left column was "Math" while the style used in the right column was "Text." I always insert a blank row between every line to avoid crowding - that's why the matrix had seven rows as opposed to four. The appropriate Menu and Dialogue Box are shown in Figures 12 and 13.

$$\begin{aligned} \lim_{x \rightarrow 2} \frac{x^2 - 4x + 4}{x^2 - 7x + 10} &= \lim_{x \rightarrow 2} \frac{(x-2)(x-2)}{(x-2)(x-5)} \\ &= \lim_{x \rightarrow 2} \frac{x-2}{x-5} \\ &= \frac{\lim_{x \rightarrow 2} (x-2)}{\lim_{x \rightarrow 2} (x-5)} && \text{Limit Law 2.3.5} \\ &= \frac{\lim_{x \rightarrow 2} x - \lim_{x \rightarrow 2} 2}{\lim_{x \rightarrow 2} x - \lim_{x \rightarrow 2} 5} && \text{Limit Law 2.3.2} \end{aligned}$$

Figure 11: Adding text along with mathematics

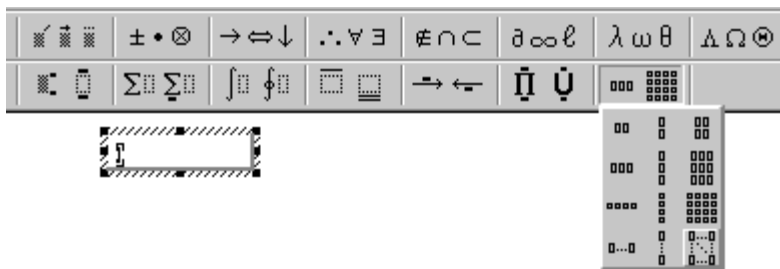


Figure 12: The Matrix Menu Bar

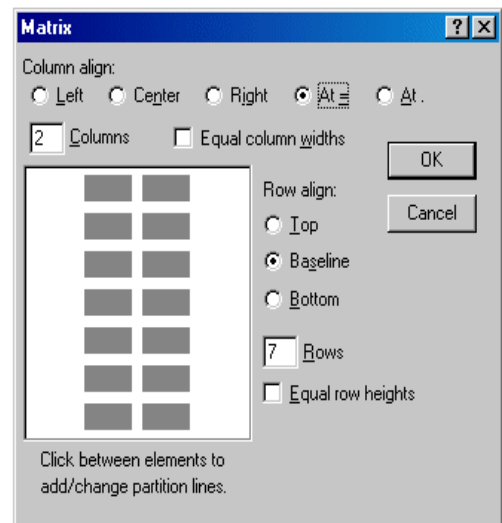


Figure 13: The Matrix Dialogue Box

Finally, you will find below is a keystroke guide for creating the

expression $\lim_{h \rightarrow 0} \frac{(3+h)^2 - 9}{h}$.

1. Open an Equation Box
2. press **Ctrl+t, u**
3. type in "lim" (don't type the quotes ☺)
4. press **Tab**
5. **type in "h"**
6. press **Ctrl+Space Bar**
7. press **Ctrl+k, a**
8. press **Ctrl+Space Bar**
9. type in "0"
10. press **Tab**
11. press **Ctrl+Shift+Space Bar**

12. press **Ctrl+f**
13. press **Ctrl+9**
14. type in "3"
15. press **Ctrl+shift+Space Bar**
16. type in "+"
17. press **Ctrl+shift+Space Bar**
18. type in "h"
19. press **Tab**
20. press **Ctrl+h**
21. type "2"
22. press **Tab**
23. press **Ctrl+Shift+Space Bar**
24. type in "-"
25. press **Ctrl+Shift+Space Bar**
26. type in "9"
27. press **Tab**
28. type in "h"
29. press **Tab**
30. click anywhere outside the Equation Box to close the equation box