# How to Insert Math and work with KeyGraph on BrailleNote Touch+ V 6

KeyMath has been a staple of the BrailleNote Touch and Touch+ units since their inception. Inserting math has been a multi-step process, often requiring various keystrokes to accomplish the task.

## Introducing Math Mode

The way to insert a math expression into a document on the BrailleNote Touch+ is via KeyWord. Teachers or other Microsoft Word users can create documents containing math expressions via the equation editor in Microsoft Word (which outputs via MathML). This equation is then readable by a KeyWord user, and this user can insert their expression, as follows, once in a KeyWord document:

* From the Main Menu, navigate to Word Processor > create to open a new document.
* Press **Enter + M** and you will hear “Math Mode on”, followed by a dollar sign, dots 1-2-4-6 and the braille letters “ms” indicating “Math Start”.
* Write your expression in either Nemeth or UEB math, (the math code can be set in the KeyWord Settings menu by going to Word Processor>Settings>Preferred Braille Type for Math and choosing the one you wish to use)
* After each expression, you may press **Enter** to insert a new line for an additional expression until you finish the equation, (you have unlimited lines to use).
* Users can also bring up the “Insert Math symbol” which can also be used a great learning math tool. Press **Backspace with dots 3 and 5** to open the symbol selector.
* When you are finished typing all expressions in an equation, press **Enter + M** to exit math mode and have the math immediately processed into the document. The BrailleNote will say “Math mode off. Alert processing math”.
* Sighted users will see a box with an X inside it denoting math content.
* Sighted users may also check the accuracy of the work by creating a visual preview.
* To create a visual preview, press **Enter + V**. This option is also available from the context menu, **Space + M** or hold the **square button** on the front of the device for two seconds, and then choose file functions>preview.

## Changing the Math braille table for KeyWord.

To change the math braille table from Nemeth to UEB or vice versa, you will need to do the following:

1. From the Main Menu, navigate to Word Processor > Settings.
2. Select Math code and select your preferred math code to use.

## Editing Math Objects

If there is a mistake found in an expression, you can easily edit the object where the mistake occurred. Using your inner right and inner left thumb keys to pan through your document, find the object that you’d like to edit. Each object is preceded by a dollar sign, dots 1-2-4-6 followed by the letters “ms” for “Math Start”, and succeeded by the dollar sign and the letters “me” for “Math End”.

Once you find the object you want to edit, press a cursor router key anywhere in the line where the object is. You will feel the cursor highlight the start of the object with a series of dots 7-8 to alert the user to the beginning of the selected object. The speech will say “Math Start”.

Press **Enter + M** to go into math mode. The speech will say “Math mode on”. Your cursor will be placed at the end of the object. Navigate around the object by routing your cursor where you need to be to make the edits.

Note: only the currently selected object, (the line you are working on), will be editable. You can view other objects around where you are editing, but you will not be able to route your cursor to them or edit them.

When you have finished editing your object, press **Enter + M** to exit Math Mode and have your updated object immediately inserted into the document. The BrailleNote will say “Math end. Math mode off. Processing math.” You will then be returned to your document.

## Inserting a Symbol into an Equation

When you are writing an equation and wish to insert a symbol into your expression, while in math mode, press **Backspace + dots 3-5**. You can also access the symbols list from the context menu, (Editing functions>Insert symbol). Choose the symbol that you need to insert, and press enter. It will be inserted into your math object.

## Deleting a Math Object

To delete a math object that is in your document, navigate to it and press a cursor routing key. This will then highlight/select the object.

Press **Backspace + dots 3-6** to delete the object. The BrailleNote will say “Delete math object?” You can choose either yes or no.

# KeyGraph

KeyGraph is a stand-alone program that allows a user to write an equation to create a visual graph that is inserted into a KeyWord document.

## Insert a Graph using KeyGraph

From the Main Menu, choose Word Processor>Create to open a new document. From within this document, press **Backspace + M** to insert a graph. You will be placed in KeyGraph. The BrailleNote will say “Nemeth graphing calculator mode”. If your braille code is set to UEB, however, that is what will be announced when you enter the program.

To adjust your braille code for input, (from Nemeth to UEB, for instance), while in the KeyGraph program, press **Space + M** for the context menu. Navigate to Setttings>Preferred Braille Code, and choose the one you wish to use.

Write the equation that will be used to create the graph. For example: y+x+2 = 0.

When you have finished typing your expression, press **Backspace+E** to export your work. The BrailleNote will say “Moved to clipboard”. You will be placed in your original KeyWord document.

Press **Backspace + V** to paste your equation. Generating a visual preview will display the graph for sighted users, while braille users will be able to read the equation.

To generate a visual preview, from within your document, press **Enter + V**, or navigate to the option via the context menu: File Functions>Preview.

## Inserting a Symbol into a Graph

If you wish to insert a symbol into the equation to create the graph:

While in KeyGraph, press **Backspace + dots 3-5**, or navigate to “Insert symbol” from within the context menu.

Choose the symbol you wish to use and press **enter** to insert it into the graph.