



Calculus Keyboard User Manual

Safety Information



Risk of suffocation from packaging materials; please keep away from children and pets.

Please review the following information for this electronic equipment. Basic care is required to prevent injury from fire, electrical shock or injury.

- 1. Do not expose to fluids. If exposure occurs, tip any edge of the keyboard up slightly to help the fluid exit. Wipe with a cloth immediately. Allow to dry before use.**
- 2. Do not expose to extreme temperatures above 100 degrees or below 30 degrees.**
- 3. Avoid dropping or mechanical trauma**
- 4. Do not expose to fire or chemicals**
- 5. Do not bite, bend, or cut the cord. A small electrical shock may occur if the device is plugged into power source and the user's bite breaks protective rubber coating.**
- 6. To clean, wipe with a dry or damp cloth and allow to dry**
- 7. Do NOT dispose of keyboard in trash; please use an electronic recycling center**

Product Specifications

Matte black wired keyboard

Approximate dimensions:

4 inches x 6.25 inches x 2 inches

Approximate weight: 9.8 oz

9V, 1A DC

External male USB-A connector

Compatible devices: OS (Chrome, Linux, Mac, or Windows 10 or newer)

Number of keys: 24

High profile, mechanical, clicky keys

LED lighting of 1 key: 2nd

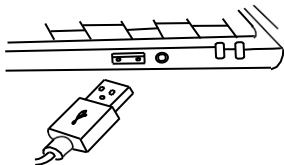
Quick Start Up Instructions

To ensure compatibility with your computer's Operating System, please see the instructions below. (Note: The keyboard is not compatible with an iPad or iPhone. The iOS virtual version of the ArithmeType math keyboard is available on the App Store).

Start Up Instructions

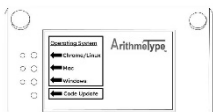
Of course, first carefully remove the keyboard from the shipping box and packaging; then, remove the keyboard from the carrying case.

STEP 1. Attach the cord.



Plug the USB connector into your laptop or desktop computer. If additional USB ports are needed, USB multi-port devices (splitters, extenders) are available online. If you're using a computer without a USB-A port (i.e., a Mac Operating System), a female USB-A to male USB- C adapter will be necessary.

STEP 2. Select the correct operating system (OS) for Chrome/ Linux, Mac, or Windows.





Turn the keyboard over and note the label with arrows pointing to the 3 different OS. Using a slim tool such as a pencil or pen, push the small button inside the hole closest to the desired OS. This will light up the OS that matches your computer in the adjacent hole. The keyboard will keep your selection unless a code update is performed. This hidden system is created to prevent inadvertent OS switching during use or transfers.


Chromebook/Linux ➡ press the corresponding button for CHROME/LINUX. That's it! You're ready to type.

Macintosh/Apple ➡ press the corresponding button for MAC.

On the arithmetype.com website, go to the Keyboard Operation Manual & Downloads tab. Please click the Mac

Installer button  and follow the steps to help your computer identify the keyboard and enable Unicode Hex Input. Just follow the few onscreen prompts, and then you're set!

Microsoft Windows 10 or newer (note: older versions not supported)  press the corresponding button for WINDOWS.

Next, download the free WinCompose app  from the Keyboard Operation Manual & Downloads tab of the home page.

(Please note, if this app download is blocked by your school district account, it can be downloaded from an alternate non-school account onto the computer or downloaded onto a removable USB drive and then uploaded to the student's computer).

STEP 3. Simply open the compatible document editor or website, and then you can start typing math!

(Note: If your keyboard does not start typing characters immediately wait 5 seconds and try again. If no characters appear, simply unplug and re-plug the keyboard and start

typing again. Also, you may want to double check that you selected the correct Operating System on the backside of the keyboard. For additional troubleshooting, please see the Full Keyboard Operation Manual.)

Compatible Browsers:

Chrome is preferred and the keyboard is optimized for this browser. For best performance, we recommend that you utilize Chrome.

Compatible Platforms/Editors:

Google Docs, Sheets, Slides
Microsoft Word, Excel, and
OneNote MacBook Notes,
TextEdit, or any document editor

Compatible Websites: ArithmeType, Desmos,
DeltaMath, and most standard websites

Compatible Extensions: EquatIO, MathType,
OrbitNote, Kami, and most PDF editors, extensions,
and add-ons

Compatible Screen Readers*: NVDA, JAWS

*Any unspoken characters can be added with the
screen reader software.

Operating Instructions


Most of the characters will display on the computer screen just as they appear on the key. Just push the key. It's that easy.

Special keys on the keyboard:

- ***Two options keys (examples):***



As you can see, on these keys there are two different options listed--one option is large font and the other option is smaller font. A simple keypress will activate the large font option to display on the screen. To activate the smaller font option, first

press the 2nd key  and then press the desired key. Following that, it will then be reset to the original option. For example, if you press the key with **u** δ , you get u. If you press 2nd, then **u** δ , you get δ .

- ***Start Google Docs EQ key:***



This key, featured in purple, only works in Google Docs on the first press and creates a shortcut to opening the equation editor. The 2nd option of this key will open the equation editor in Word or OneNote.

Once the Google Docs EQ button is pressed, after a slight pause, a box will appear on the screen with a flashing cursor inside. (Note: Google Docs must be in standard menu mode for this key to function correctly. This means that File, Edit, View, Insert, etc. are visible on the menu bar). Once the Google Docs Equation Editor is activated, it allows the user to create:

- ***Limits, Sums, and Integrals with spatial formatting:***



$$\lim_{x \rightarrow \infty} 5x^3 \quad \sum_{n=2}^8 7x \quad \int_2^6 x^2$$

In Google Docs Equation Editor: Press the 2nd key followed by the desired key. The symbol will appear with a flashing cursor below it. Enter a number, letter, or symbol then press enter. The cursor will move to the next position. Press enter again to enter additional characters. Press enter to exit the equation editor.

In Word/OneNote Equation Editor:

For limits, press “lim” key. Then on the main math keyboard, evoke the subscript EQ key by pressing 2nd, then subscript. If more than one digit is being typed to go below the limit, put the terms into parentheses. Then press space to see the formatting appear and this moves the cursor to the original line of typing. Enter the next term and press the arrow key to the right to advance out of that entry. Press enter to exit the equation editor.

For Sums, press the 2nd key, then Σ . Then on the main math keyboard, evoke the subscript EQ key by pressing 2nd, then subscript. If more than one digit is being typed to go below the limit, put the terms into parentheses. To enter the term on top, press ^ and the term. Then press space to see the formatting appear and this moves the cursor to the original line of typing. Enter the next term and press the arrow key to the right to advance out of that entry. Press enter to exit the equation editor.

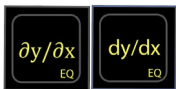
Note: The full enhanced formatting is better displayed when typing the equation on a new line rather than on the current line of typing. The equation will appear in the center of the line when it is in optimal form.

For integrals, press the \int or \oint key. Then on the main math keyboard, evoke the subscript EQ key by pressing 2nd, then subscript. If more than one digit is being typed to go below the limit, put the terms into parentheses. To enter the term on top, press ^ and the term. Then press space to

see the formatting appear and this moves the cursor to the original line of typing. Enter the next term and press the arrow key to the right to advance out of that entry. Press enter to exit the equation editor.

(Note: The full enhanced formatting is better displayed when typing the equation on a new line rather than on the current line of typing. The equation will appear in the center of the line when it is in optimal form.)

- **Formatted Fractions**



$$\frac{\partial y}{\partial x} \quad \frac{dy}{dx}$$

In Google Docs Equation Editor, press 2nd key, then $\partial y/\partial x$ or dy/dx key. Press enter to leave the Equation Editor.

In Word/OneNote Equation Editor, press $\partial y/\partial x$ or dy/dx key. Press enter to leave the Equation Editor.

- **Vector Symbol**



$$\vec{u} \quad \overrightarrow{prt}$$

In Google Docs Equation Editor, press 2nd key, then \rightarrow key. The vector will elevate over the characters. Enter the desired characters below the vector. Press enter to move out from under the vector symbol. Press enter to leave the Equation Editor.

In Word/OneNote Equation Editor, first enter the characters to put beneath the vector. If more than one character, put them in parentheses. Next press, the 2nd key, then \rightarrow , then press spacebar. The vector will now be over the characters. Press enter to leave the Equation Editor.

- $\left| \begin{matrix} a \\ b \end{matrix} \right.$ **GD EQ or | Tall line**



$$\int f(x) \Big|_b^a$$

This denotes the limit of a function and typically written at the end of the function.

In Google Docs Equation Editor, press this key and a tall bar will appear with the cursor now below the line of text at the lower limit. Type the value for the lower limit. Press Enter, and the cursor will go to the upper limit value. Type the upper limit value and press enter. Press enter again to leave the Equation Editor.

In Word/OneNote Equation Editor, Then on the main math keyboard, evoke the subscript EQ key by pressing 2nd, then subscript. If more than one digit is being typed to go below the limit, put the terms into parentheses. To enter the term on top, press ^ and the term. Then press space to see the formatting appear and this moves

the cursor to the original line of typing. Press enter to exit the equation editor.

In MathQuill websites such as ArithmeType, Desmos, DeltaMath, and more, press the 2nd key, then the | key. To type the lower limit, on the main math keyboard evoke the subscript EQ key by pressing 2nd, then subscript. Type the entry and press tab to move the cursor back to the baseline. Next, to type the upper limit on top, press ^ and type the term. Then press tab and this moves the cursor to the original line of typing.

- ***Boldface Type:***



Pictured in pink, this turns on/off boldface in any document. As stated, this function only works in documents such as Google Docs, Word, OneNote, TextEdit, etc. This is useful for typed vector notation which is typically boldfaced.

- ***Boldface Unicode characters (example):***



Boldface characters **i**, **j**, **k**, **u**, **v** are common vectors used in multivariable calculus. Again, these are most consistently displayed on a document but can often be used on websites, extensions, PDF editors, etc. It may be font specific, meaning it will only display in certain fonts. We recommend using fonts such as Cambria Math, Times New Roman, Latin Modern, Asana Math, XITS Math.

Code Update

Rarely, the code for the keyboard may need to be updated to conform with any changes that a particular OS may require. Perform the following steps below.

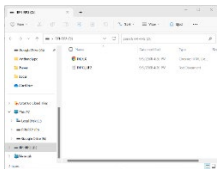
1. Put the keyboard into reset mode. Choose **one** of the two methods below.

- a. Hold the top left key down (Start GD EQ)

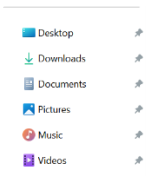


- while plugging the USB into your laptop. Keep holding the key a few seconds and then release. A chime may be heard. The keyboard is now in reset mode.
- b. Hold down the Code Update button on the back of the keyboard while plugging in the keyboard. Keep holding the button a few seconds and then release. A chime may be heard. The keyboard is now in reset mode.

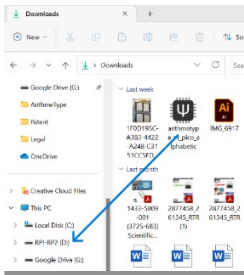
2. A new drive called RP1-RP2 will open.



3. Next, on the ArithmeType home page click the UPDATE button to download the new file.
4. Now open the files icon on your computer and find the downloads file. Double Click to open it.



5. The ArithmeType download will be displayed there. Drag and drop the file into the RP1-RP2 drive. A chime may be heard.



6. The keyboard has now been updated. Be sure to reselect the correct OS on the back of the keyboard since its previous selection was erased during the reset.

Screen Readers

The ArithmeType Math Keyboard is most compatible with NVDA and JAWS. For optimal use, screen readers should be set to recognize Unicode characters. There will be variability in different screen reader's interpretation of the multikey commands, such as Start Google Docs EQ. This may instead be read as "e" since the command is alt, i, e. Please utilize Google Chrome for the best experience using screen readers with the ArithmeType Math Keyboard. See Reference table below for a verbal description of the keyboard. Any non-spoken characters can be added using the software for the screen reader.

Reference Table for Keys (EQ=Equation Editor)

Start Google Docs EQ; Word EQ	Left angle bracket; union	Right angle bracket; intersection	Cross product; element of
Bold Capital F; bold capital G	Bold i; alpha	Bold j; beta	Bold k; gamma
Bold doc only	Bold u; delta	Bold v; nabla	Vector; EQ
Tall line limit superscript a	Integral; EQ	Line integral; EQ	Surface integral;

over subscript b; Tall line only			volume integral
lim; EQ	Cap sigma (sum); EQ	Partial derivative	Partial derivative y /partial derivative x; EQ
2 nd	Prime	Dx	dy/dx; EQ

Troubleshooting

Keyboard does not type	Wait 5-10 seconds and try typing again. If there is still no response, unplug and re-plug the USB into your computer. If using a MacBook, be sure to follow to follow the steps to help your computer identify the keyboard.
Special characters display as a series of strange number and symbols	Please turn the keyboard over and make sure you have selected the correct Operating System to match your

	computer. Mac OS users, please ensure you have used the Mac Installer download and followed the instructions to help recognize the keyboard and Unicode language.
Google Docs EQ button types a capital E and doesn't open the equation editor	Make sure you are in Google Docs and the menu options are displayed at the top of the screen (File, Edit, Insert, etc.). If you are in the Search Menu mode, click the top right corner down caret to switch to "Show the menus". Also, Caps Lock must be off.
a/b appears as $\frac{a}{b}$ or $\frac{a}{b}$	This button only works in the Google Docs Equation Editor. Press the "Start Google Docs EQ" button first, then the a/b button to make fractions with a horizontal bar. Also, Caps Lock must be off.
Extra u in symbols	There is an update that needs to occur on the website programming to eliminate the

	extra “u”. Please contact us at info@arithmetype.com to help facilitate this update with the website.
Subscript not working	Please see the subscript key section for the math keyboard to review which editors support this key. It is very useful but has limited editors that support its function.
Superscript key ^ doesn't elevate character	Please review the ^ key section of the math keyboard to learn the specific editors that support this key and how to use it correctly.

LIMITED PRODUCT WARRANTY

ArithmeType LLC, a Minnesota limited liability company (the “Company”), expressly warrants to the original purchaser (the “Buyer”); that, for a period of one (1) year from the date of purchase and delivery, the ArithmeType keyboard (the “Product”) will be reasonably free of defects in materials and workmanship. This Limited Warranty only applies to Company’s Products, which are used, stored, and handled in the manner recommended by the Company.

The Company will, at its option, repair or replace the Product without charge, if the Product fails or does not perform as warranted solely due to a manufacturing defect within the warranty period, subject to the exclusions set forth in this Limited Warranty. Repair or replacement during this one (1) year warranty shall include reasonable labor charges necessary to repair or replace the defective product. During the entire one (1) year warranty, the Company’s obligation as to repair or replacement shall further be limited to repair or replacement with the styles, models, products, colors, etc. of the Product that are available at the time of the repair or replacement, and shall be limited to the repair or replacement of only the specific Product that fails due to a manufacturing defect. Any repaired or replaced product shall also remain subject to the original one (1) year warranty from the date

of the original purchase, and any repair or replacement shall not extend the original warranty period in any manner or start a new warranty period. There are no other remedies available under this warranty.

Disclaimer of Warranties

The Product must be stored, handled, installed, used and maintained in accordance with instructions provided by Company, and this Limited Warranty is conditioned upon compliance with all such instructions. Copies of the Company's instruction manual is available from the Company at the address listed below. You may also obtain these materials on the Company's website at arithmetype.com or by contacting the Company at (651-661-MATH(6284)).

This Limited Warranty does not cover defects caused by:

1. noncompliance with Company's instruction manual. Such failures include, but are not limited to, exposure to physical abuse, including, but not limited to liquid damage, chemical abuse (e.g. harsh cleansers and solvents), thermal abuse or shock (e.g. excessive heat or cold), mechanical abuse (forceful pressure/dropping) or misuse;
2. improper storage, installation, handling, and/or use of the Product;

3. damage not resulting from manufacturing defects that occur while the Product is in the customer's possession or its transportation or delivery;
4. unreasonable or unintended use of Product;
5. minor conditions such as stains, scratches, etc;
6. failure or dissatisfaction with the appearance of the Product.

Any information or suggestion by the Company with respect to the Product concerning applications, specifications or compliance with codes and standards is provided solely for your convenient reference and are made without any representation as to accuracy or suitability. You must verify and test the suitability of any information with respect to the Product for your specific application.

THE WARRANTIES SET FORTH HEREIN ARE THE ONLY WARRANTIES MADE BY THE COMPANY IN CONNECTION WITH THIS PRODUCT. THE COMPANY CAN NOT AND DOES NOT MAKE ANY IMPLIED OR EXPRESS WARRANTIES WITH RESPECT TO THE PRODUCT, AND DISCLAIMS ALL OTHER WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. PRODUCTS SOLD BY THE COMPANY ARE SOLD ONLY TO THE SPECIFICATIONS SPECIFICALLY SET FORTH BY THE COMPANY IN WRITING. OTHER THAN THE LIMITED WARRANTY SET FORTH HEREIN, THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY'S SOLE OBLIGATION UNDER THIS WARRANTY SHALL BE REPAIR OR REPLACEMENT OF A NON-CONFORMING PRODUCT, OR AT THE OPTION OF THE COMPANY, RETURN OF THE PRODUCT AND A REFUND OF THE PURCHASE PRICE. THE BUYER ASSUMES ALL RISK WHATSOEVER AS TO THE RESULT OF THE USE OF THE PRODUCT PURCHASED, WHETHER USED SINGULARLY OR IN COMBINATION WITH ANY OTHER PRODUCTS OR SUBSTANCES.

Limitation of Liability

NO CLAIM BY THE BUYER OF ANY KIND, INCLUDING CLAIMS FOR INDEMNIFICATION, SHALL BE GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT IN RESPECT TO WHICH DAMAGES ARE CLAIMED. IN NO EVENT SHALL THE COMPANY BE

LIABLE TO THE BUYER IN TORT, CONTRACT OR OTHERWISE, FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, RELIANCE, STATUTORY, SPECIAL, PUNITIVE OR EXEMPLARY DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, LOSS OF USE, LOSS OF TIME, LOSS OF REVENUES, INCONVENIENCE, LOSS OF BUSINESS OPPORTUNITIES, DAMAGE TO GOODWILL OR REPUTATION, OR LOSS OF DATA, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR SUCH DAMAGES COULD HAVE BEEN REASONABLY FORESEEN, IN CONNECTION WITH, ARISING OUT OF, OR AS A RESULT OF, THE SALE, DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCT SOLD HEREUNDER, OR FOR ANY LIABILITY OF THE BUYER TO ANY THIRD PARTY WITH RESPECT THERETO.

Contact Information

Any question concerning this warranty should be addressed to:

ArithmeType LLC

Address: 1 Spring Marsh Lane, North Oaks, MN 55127

Attention: Shannon Canas

Phone: 651-661-MATH(6284)

Website address: info@arithmetype.com

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