History of Math Timeline Cards

Here's how to make the cards:

1. Print the cards (color is nice, but not required). Each row has three columns. The first two columns are the front and back of the card. The last row is the source of the image, which is just FYI.
2. Cut out the first two columns of each row, then fold the card on the vertical column line so that it has a front and back. Just discard the last column of the card, unless you want to fold it onto the inside of the card. *Note: I suggest removing some of the cards to tailor the topics to the knowledge level of your class. For example, my Geometry students may not yet know about trigonometry, so I would remove cards related to trigonometry for that class.*
3. Put each card in a card protector (I bought these on Amazon). If you can see the date on the back of the card through the card protector, just slip a piece of cardboard (or these from Amazon) in the card protector. After sorting the cards, students can temporarily lift this cardboard to check the date.
4. You're ready to go!

Sources:

1. Katz, Victor J. *A History of Mathematics: An Introduction*. 2nd ed., Addison-Wesley Educational Publishers, Inc., 1998.
2. *MacTutor History of Mathematics Archive Index to Chronology*. School of Mathematics and Statistics, University of St. Andrews, Scotland, http://www-history.mcs.st-and.ac.uk/Chronology/index.html. Accessed 11 July 2018.
3. Richardson, William H. *A Time-line for the History of Mathematics*. Wichita State University. http://www.math.wichita.edu/~richardson/timeline.html. Accessed 11 July 2018.
4. Kucharski, Adam. "Euclid as Founding Father." *Nautilus: Science Connected*. 13 October 2016. http://nautil.us/issue/41/selection/euclid-as-founding-father. Accessed 31 July 2018.
5. *MacTutor History of Mathematics Archive Maryam Mirzakhani*. School of Mathematics and Statistics, University of St. Andrews, Scotland, http://www-history.mcs.st-andrews.ac.uk/Biographies/Mirzakhani.html. Accessed 31 July 2018.

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~3000 - 1000 BCE	Babylonian scribes in Mesopotamia use reeds to write numbers on clay tablets in cuneiform writing. (Katz 7) • Base 60 number system (Katz 7) • Use math for practical purposes: create calendars, compute area, compute wages, make construction calculations (Katz 19, 25) • Scribes create extensive tables to aid with calculations (multiplication tables, tables of reciprocals, etc.) (Katz, 12-13) 	Image: https://commons.wikimedia.org/wiki/File:Cuneiform_tablet-_account_of_barley_and_date_disbursements,_Ebabbar_archive_MET_ME1973_25_4.jpg This file was donated to Wikimedia Commons by as part of a project by the Metropolitan Museum of Art. This file is made available under the Creative Commons CC0 1.0 Universal Public Domain Dedication.
~3000 - 1000 BCE	Ancient Egyptian scribes write numbers using hieroglyphics (walls) and hieratics (on papyrus). (Katz 6) • Base 10 number system (Katz 6) • Use math for practical purposes: create calendars, compute area, compute wages, make construction calculations (Katz 19, 25) • Papyri propose practical problems, like how to divide various numbers of loaves of bread among 10 men (Katz 10) 	Image: https://commons.wikimedia.org/wiki/File:Rhind_Mathematical_Papyrus.jpg This is a faithful photographic reproduction of a two-dimensional, public domain work of art.
~20,000 BCE	Civilizations living in an area that is now the Democratic Republic of Congo carve groups of notches on a bone. These grouped notches are possibly evidence of counting. (Katz, 5) 	Image: https://commons.wikimedia.org/wiki/File:Ishango_bone.png This file is licensed under the Creative Commons Attribution-Share Alike 4.0 International license.

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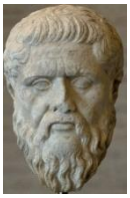
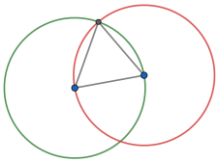
~127 BCE	Hipparchus, a Greek mathematician, calculates the length of the year within 6.5 minutes of the actual value. He compiled early trigonometric tables for his work on astronomy. (MacTutor)	
~600 BCE	Ancient Greeks begin to pursue *theoretical* mathematics: they create logical arguments that demonstrate why mathematical statements are true. (Katz 46-47) Thales, Pythagoras, Plato, Aristotle, etc. 	Image: https://commons.wikimedia.org/wiki/File:Head_Platon_Glyptothek_Munich_548.jpg
~300 BCE	Euclid, possibly a teacher at the Museum and Library in Alexandria, organizes currently known mathematical knowledge into a book called *Elements*. (Katz 58-59) 	Image: Created in GeoGebra by Jamie Back

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~810 CE	Al-Khwarizmi, an Islamic mathematician, wrote the treatise, “Calculation by Completion and Balancing”. It used no symbols and is considered the first book on algebra. One word in the title, *al-jabr*, led to the word *algebra*. The word *algorithm* comes from his name. (MacTutor)	
~970 CE	Abu’l-Wafa, an Islamic astronomer and mathematician, introduced the tangent function and created trigonometric tables with improved accuracy. (MacTutor)	
~990 CE	Al-Karaji, an Islamic mathematician, wrote about the pattern of numbers that we now know as Pascal’s Triangle. (MacTutor) 	Image: Created in Microsoft OneNote by Jamie Back

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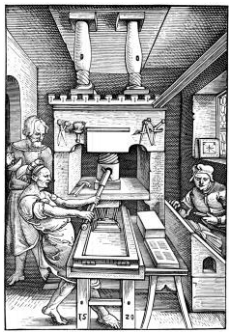
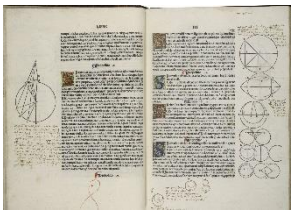
1440 CE	The printing press is invented, revolutionizing the production of books. (Richardson) 	Image: https://commons.wikimedia.org/wiki/File:Press1520.png
1482 CE	Euclid's *Elements* becomes the first math "book of significance" to be printed. (Richardson)  The only book with more editions printed is *The Bible*. (Katz 58)	Image: This file is licensed under the Creative Commons Attribution-Share Alike 4.0 International license. https://commons.wikimedia.org/wiki/File:Euclid%27s_Elements,_1482.jpg
1489 CE & 1525 CE	• First textbook appearance of the symbols + and – for addition & subtraction. (Richardson) • Symbol resembling $\sqrt{\ }$ introduced for square root. (MacTutor) $+ \quad - \quad \sqrt{\ }$	

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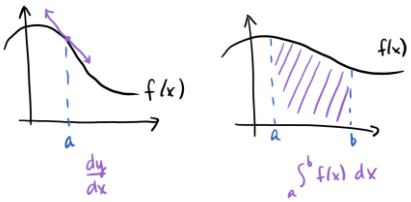
1684 CE & 1687 CE	First papers are published discussing the invention of Calculus by Gottfried Leibniz (Germany) and Isaac Newton (England). (MacTutor) 	Image created by Jamie Back
1706 CE	The symbol π is introduced in a book. (Richardson) π	
mid-1800's CE	Abraham Lincoln, while studying law, reads *Elements* to learn how to write a logical argument to demonstrate that something is true. (Kucharski) 	Image: https://commons.wikimedia.org/wiki/Abraham_Lincoln#/media/File:Abraham_Lincoln_November_1863.jpg

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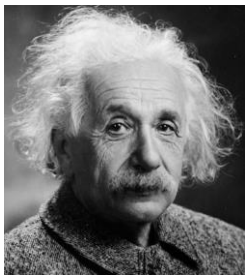
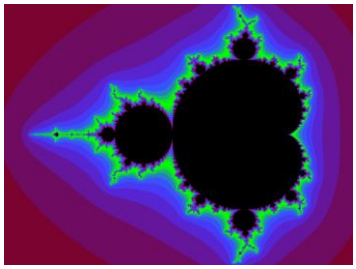
1905	Einstein publishes his theory of special relativity. (Richardson) 	Image: https://commons.wikimedia.org/wiki/Albert_Einstein#/media/File:Albert_Einstein_Head.jpg
1982 CE	Benoit Mandelbrot publishes a book introducing the theory of fractals. (Richardson) 	Image: https://commons.wikimedia.org/wiki/File:Mandelbrot_set_with_coloured_environment.png This file is licensed under the Creative Commons Attribution-Share Alike 2.5 Generic, 2.0 Generic and 1.0 Generic license.
2014	Maryam Mirzakhani is awarded the Fields Medal for her work on complex geometry. (MacTutor) Maryam is the first female to earn this award since it was first given in 1936. (MacTutor) Some consider this to be the most prestigious award that is given to mathematicians.	Image: https://commons.wikimedia.org/wiki/File:Maryam_Mirzakhani_in_Seoul_2014.jpg This file is licensed under the Creative Commons Attribution-Share Alike 2.0 Germany license. Attribution: Gert-Martin Greuel

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