

Technology in Action Guide

Elementary Mathematics



Practice Standards Connections

- MP1**—Make sense of problems and persevere in solving them.
- MP2**—Reason abstractly and quantitatively
- MP3**—Construct viable arguments and critique the reasoning of others
- MP4**—Model with mathematics

- MP5**—Use appropriate tools strategically
- MP6**—Attend to precision
- MP7**—Look for and make use of structure
- MP8**—Look for an express regularity in repeated reasoning

Social Emotional Learning Standards Connections— SEL Goal 2— use social-awareness and interpersonal skills to establish and maintain positive relationships—directly connects to MP3. Many of these resources can be used in a group or partner situation to build on both MP3 and SEL 2.



Online Activities



Illustrations (from NCTM) website has a large collection of interactive activities/games for all grade levels and all standards. Educators can search by standard or grade level. Many of the activities can be used on an interactive whiteboard (smart-board or Promethean). No login is required to use the activities. There are also lesson plans available on the website to work in conjunction with the interactive platform. <http://bit.ly/2woYEqr>



Prodigy has content from all major topics and will seamlessly cover Grades 1 - 8 to help ensure students are ready for standardized testing. With a diagnostic test to place students in the correct grade, embedded assessments, and automatic differentiation, Prodigy ensures that each one of the students succeed at their own pace. All math, reporting, and access to the program is free. They do make money with an optional parent upgrade, which only unlocks extra game content (e.g., new hairstyles for a student's character), and has absolutely no impact on Prodigy's educational quality. <https://prodigygame.com/>








Refraction focuses on teaching fractions and discovering optimal learning pathways for math education. Refraction lets you bend, split, and redirect lasers to power spaceships filled with lost animals! Help free as many animals as you can by expanding your knowledge of fractions. <http://bit.ly/2woMBJQ>



The Math Learning Center's web/mobile apps are based on the visual models featured in the curriculum Bridges in Mathematics. All apps are available in two or more versions: a web app for all modern browsers, and downloadable versions for specific operating systems and devices (such as Apple iOS for iPad). All will work with a ChromeBook! <https://www.mathlearningcenter.org/resources/apps>



Math Snacks isn't a curriculum, but a series of activities you can use with the curriculum already being used in grades 4-8. Math Snacks materials address critical content including number sense, ratio, proportion, measurement, scale factor, and pre-algebra. Don't think of the animations and games as "free time activities." Each of these have been designed to be used as part of instruction. All Math Snacks products have lesson guides, and additional instructional resources. The games and animations can be used by students at anytime, there is no login required. Most are available in Spanish! <http://mathsnacks.com/index.html>

	Number Frame		Number Pieces		Number Rack
	Money Pieces		Math Vocabulary Cards		



Mathematical Videos



Mathematics in Movies - This is a collection of movie clips in which Mathematics appears. The site is now in HTML5 video and should be accessible by all devices. If not, chose the direct video links. To include a clip into a presentation, chose the QuickTime version. A wide variety of genres and decades, some that students won't recognize but will certainly enjoy the connection. <http://www.math.harvard.edu/~knill/mathmovies/>



WatchKnowLearn is a video platform that has educational videos curated not only by the website developers, but users can also upload videos. The subcategory MATHEMATICS splits into every math content available, from math for young learners to calculus. Educators can create accounts and save videos to a playlist so they are ready when needed in the classroom. Most all are hosted on YouTube and educators are encouraged to review first. <http://bit.ly/2wp01W6>



Safe Share TV is a platform to watch YouTube without any additional videos or advertisements appearing on the screen. By copying and pasting the YouTube link into the box on the home page, the website will generate a new LINK to the video. This link will never expire and now will direct to a video display that removes all the unwanted items. Educators can now place this link in a PowerPoint or an assignment in GAFE (Google Apps For Education) that the students can select and they will not be shown "other" items. <http://safeshare.tv/>

Mobile Apps



10 Frame Fill provides students practice with recognizing additive "10 Families" (e.g., 1 and 9, 2 and 8, etc.). Set the 10 frame to fill in sequence or randomly. Use contrasting color chips to fill the 10 frame as users determine the answer. Select to show a corresponding number sentence. <http://apple.co/2wx6MFp>



Thinking Blocks Addition teaches children how to model and solve word problems involving addition and subtraction. In this interactive tutorial, children are introduced to 6 problem solving models. The models help children organize information and visualize number relationships. <http://apple.co/2wwOggx>



Number Frames is an app that Use standard 5-, 10-, 20-, and 100-frames, or create custom frames up to 12 x 12. Choose from a variety of counters and colors. Drag single counters — or stacks of 5 and 10 — into frames or on to the workspace. Apply a 5s grid to frames to emphasize every 5th line and reinforce grouping by five. Use the drawing tools to annotate work and show understanding. Write equations and expressions with the math text tool. <http://apple.co/2wx4cPE>



Math Snacks HD is a math video app with 5 videos and includes learner's guides, comic book transcripts, and teacher's guides. Topics include Ratios, Number lines, units and proportions and scale factors. <http://apple.co/2wwP3hv>



Virtual Manipulatives use photos and an interactive white board to work with manipulatives in fractions, percent, and decimals. easy to manipulate for all ages. NOT A GAME, used for instruction and modeling. iOS only <https://apple.co/2lkhxh>



Moose math teaches counting, addition, subtraction, sorting, geometry and more. While playing 5 multi-level activities in the Moose Juice Store, Puck's Pet Shop and Lost & Found, kids can earn rewards to help build their own city and decorate buildings. <http://apple.co/2wwlKdG>



Online Virtual Tools



Draw.io is an online flowchart tool that allows users to create any type of drawing using simple to complex shapes and diagrams. Numbers and text included so student could use this to show the process in completing an equation. The platform has built in shapes that can be dragged onto the page and aligned to build the chart. The drawing can be saved to Google drive, Dropbox or Onedrive or printed out. Users can create an account, but it is not necessary to use the tool. <https://www.draw.io/>



GeoGebra is dynamic mathematics for all levels of education that brings together geometry, algebra, spreadsheets, graphing, statistics and calculus in one easy-to-use package. GeoGebra is a rapidly expanding community of millions of users located in just about every country. <http://bit.ly/2v7fNRY>



Desmos is the best-in-class HTML5 graphing calculator, which millions of students around the world use for free. The platform also has activities on top of that calculator, helping students use a powerful tool to experience all the curiosity, beauty, and sense that math has to offer. Those activities were used so often by so many teachers around the world that they decided to create an Activity Builder, helping every teacher create digital math activities that equal and exceed the activities we create ourselves. Users can create an account to save graphs and data for works in progress. Graphs can be printed or emailed. (calculator platform can be changed into 33 different languages.) (iOS and Android apps available as well.) <http://bit.ly/2v7m1RW>



Daum Equation Editor - Online equation editor that will allow the user to save to Google drive, save as an image or text file, increase text and modify the color of different characters in the equation to help educators highlight portions of the instruction. <http://bit.ly/2v7AJ4P>



PhET Simulations from University of Colorado provides fun, free, interactive, research-based science and mathematics simulations. The simulations are written in Java, Flash or HTML5, and can be run online or downloaded to your computer. All simulations are open source. Simulations are all grade levels and subjects are physics, biology, chemistry, earth science and math. Users can play with the simulations without an account. Educators can use an account to keep track of students and simulations. <https://phet.colorado.edu/>



The National Library of Virtual Manipulatives (NLVM) is an NSF supported project that began in 1999 to develop a library of uniquely interactive, web-based virtual manipulatives or concept tutorials, mostly in the form of Java applets, for mathematics instruction (K-12 emphasis). Utah State University team is building Java-based mathematical tools and editors that allow us to create exciting new approaches to interactive mathematical instruction. The use of Java as a programming language provides platform independence and web-based accessibility. The NLVM is a resource from which teachers may freely draw to enrich their mathematics classrooms. <http://bit.ly/2v7j9V4>

Even MORE Resources

To find more resources and the latest up-to-date technology to support technology integration, please visit www.ilclassroomtech.weebly.com.

- ◆ Assessment tools
- ◆ Audio/video tools
- ◆ Content area support
- ◆ Digital portfolios
- ◆ Computer science
- ◆ Learning management systems
- ◆ Mobile apps
- ◆ Research tools
- ◆ Social Emotional Learning
- ◆ Technology terms

