



BVCPS

Instructional Technology

Math 5-12

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Math Trivia

- In a room full of 23 people, there is a 50% chance that two people have the same birthday.
- The = sign ("equals sign") was invented by 16th Century Welsh mathematician Robert Recorde, who was fed up with writing "is equal to" in his equations. He chose the two lines because "noe 2 thynges can be moare equalle".

<http://www.factme.com/>

Seeing Math™ Secondary: Teaching through Interactives

Seeing Math™ has developed interactive software tools to clarify key mathematical ideas in middle and high school mathematics. Each interactive provides a real-time connection between representations of the mathematics (symbolic, graphical, etc.), so that changes in one representation instantly cause changes in the other.

Seeing Math offers graduate level courses and professional development online through PBS TeacherLine. Courses typically cost \$295.00 for recertification points. Two (2) graduate credits are available for an additional \$158 (Adams State University) and \$160 (Boise State University). More information about the resources available and the courses may be found on the Seeing Math website.

Available courses include:

[Proportional Reasoning](#)

[Linear Functions](#)

[Transformations of Linear Functions](#)

[Linear Equations](#)

[Systems of Linear Equations](#)

[Quadratic Functions](#)

[Transformations of Quadratic Functions](#)

[Quadratic Equations](#)

[Data Analysis](#)

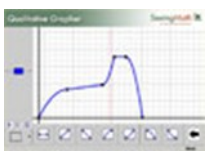
Sample graphing interactives are available online or may be downloaded onto your computer for offline use. These resources are free for teachers.

Technical note: all interactives (except Ploplt!) were updated in December 2009 to work with Java 1.5 and higher. If you experience any problems using these, please email us at info@concord.org and try the earlier [versions](#).

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Seeing Math™ Secondary: Teaching through Interactives (cont. from page 1)

Qualitative Grapher



Highlight the meaning of a function, and see how it can be seen as something changing

over time, with this tool that links a motion model to a graph. [Sample Activity](#) (.pdf)

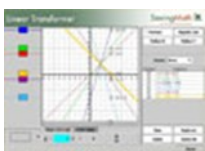
Piecewise Linear Grapher



Highlight the language of domain and range, and the ideas of continuity and

discontinuity, with this tool that links symbolic and graphic representations of each interval of a piecewise linear function. [User's Guide](#), [FAQ](#), [Warm-Up](#), [Sample Activity](#) (.pdf)

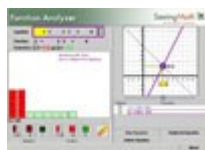
Linear Transformer



Highlight the meaning of each component of a linear function's symbolic expression

with this tool that links symbolic and graphic representations of translating (dragging) a line vertically or horizontally, rotating it around a fixed point, or reflecting it around the x- or y-axis. [User's Guide](#), [FAQ](#), [Warm-Up](#), [Sample Activity](#) (.pdf)

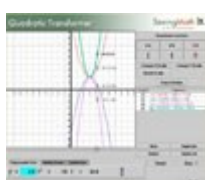
Function Analyzer



Highlight the rationale behind symbolic operations used to solve a linear

equation with this tool that displays changes in the graphic and area models of functions as you change the value of each symbolic element. [User's Guide](#), [Warm-Up](#), [Sample Activity](#) (.pdf)

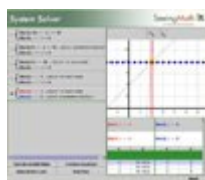
Quadratic Transformer



Highlight the meaning of each component of a quadratic function's symbolic expression with this

tool that links symbolic and graphic representations of translating (dragging) a parabola vertically or horizontally, dilating it, or reflecting it around the x- or y-axis. [User's Guide](#), [FAQ](#), [Warm-Up](#), [Sample Activity](#) (.pdf)

System Solver

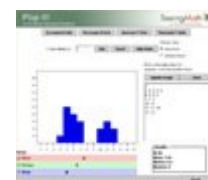


Highlight how symbolic operations on a system of linear equations do (or do not) change the

graphic or tabular representations of the system.

Note that the System Solver is a tool intended to illustrate the rationale behind the symbolic operations used to solve systems of linear equations, and not a way to learn what procedures to follow. [User's Guide](#), [FAQ](#), [Warm-Up](#), [Sample Activity](#) (.pdf)

Plop It!



Highlight how changing a data set affects the mean, median, and mode with this tool

(created by The Shodor Education Foundation and modified by The Concord Consortium) that allows you to add and delete data graphically. [User's Guide](#), [Warm-Up](#), [Sample Activity](#) (.pdf)

Proportioner

Highlight proportion and scale with



this tool that allows you to compare image dimensions by using one image to "paint" another.

[User's Guide](#), [Warm-Up](#), [Sample Activity](#) (.pdf)

Download All Interactives for Offline Use

Technology-infused Lesson Ideas

Using a GPS Handheld Receiver to Determine the Perimeters of Polygons, Distance, and Speed

In this activity students use the Global Positioning System (GPS) handheld receiver to determine their track as they walk the perimeter of several polygons. Students will also calculate

their average speed after walking a specified distance.

Using a GPS Handheld Receiver to Determine Distance and Area of Polygonal Plots

This activity explores how distances and areas of convex polygonal plots

of land (and concave plots with modification) can be determined using a GPS, the Geometer's Sketchpad, and Excel.

Source: Center for Technology and Teacher Education, a cross-disciplinary group of faculty working together in the [Curry School of Education](#) at the [University of Virginia](#).