

# Strategies and Tools for Teaching High School Mathematics

## 1. Challenge students with online mathematics problems!

Add a daily or weekly mathematics challenge to your seatwork assignments, math lessons, or extra credit activities.

The Math Forums [Math Problem of the Week](#) offers word problems in five categories -- math fundamentals, pre-algebra, algebra, geometry, and pre-calculus. The [AIMS Puzzle Corner](#) provides more than 100 math-related puzzles appropriate for students in upper elementary grades and middle school. Most include printable worksheets.

You can find news-related math problems at [Math Counts](#).

## 2. Assign Kahn Academy math videos to remediate and reinforce!

[http://www.khanacademy.org/search?page\\_search\\_query=math](http://www.khanacademy.org/search?page_search_query=math)

## 3. *S.O.S. MATHematics* is your free resource for math review material from Algebra to Differential Equations!

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

## 4. Use TEDTalks!

For example, *The Importance of Taking Statistics*

[www.ted.com/talks/lang/eng/arthur\\_benjamin\\_s\\_formula\\_for\\_changing\\_math\\_education.html](http://www.ted.com/talks/lang/eng/arthur_benjamin_s_formula_for_changing_math_education.html)

Arthur Benjamin teaches at Harvey Mudd College in California - recently rated the best engineering school in the country. He believes all students should have an understanding of statistics.

## 5. Utilize Web 2.0 Tools for Math Educators

Recommended by Laura Turner

[http://www.bhsu.edu/education/edfaculty/lturner/web\\_2.htm](http://www.bhsu.edu/education/edfaculty/lturner/web_2.htm)

This is a continuing series on Web2.0 and other web-based tools for educators. This information is specific to math educators, but there is some crossover into science. Math educators will find a large number of useable interactive companion web sites for the teaching of math concepts and skills.

### **3Dvinci**

<http://www.3dvinci.net/ccp0-display/splash.html>

3D design is a great motivational and instructional tool. It exercises both left-brain and right-brain skills, and appeals to students of all abilities. ModelMetrics books contain easy-to-follow projects based on the free Google SketchUp application, to show how to model anything in 3D.

### **Algebasics**

<http://www.algebasics.com>

This site contains a variety of interactive Algebra help/ problems/activities

### **Archimy**

<http://www.archimy.com>

This site has a service for drawing the graphs of all kinds of functions . With Archimy, you will draw the graph of any function and form, just use your imagination. The program must be downloaded and is free.

### **Arcademic Skill Builder**

<http://www.arcademickillbuilders.com>

Our research-based and standards-aligned free educational math games and language arts games will engage, motivate, and help teach students. Click a button below to play our free multi-player and single-player games!

### **Calc3D**

<http://www.calc3d.com>

This site has interactive Mathematical graph and charting software for geometry and statistics

### **Chart Gizmo**

<http://chartgizmo.com>

This site has an incredible chart builder for any type of data that can be typed or uploaded to this tool

### **Chart Tool**

<http://www.onlinecharttool.com>

This site is another great tool for creating Charts and graphs On Onlinecharttool.com you can design and share your own graphs online and for free We support a number of different chart types like: bar charts, pie charts, line charts, bubble charts and radar plots.

### **Concord Consortium**

<http://www.concord.org/work/software>

This site features free downloadable Math & Science software.

**CrickWeb**

<http://www.crickweb.co.uk/ks1numeracy.html>

Math interactive tools for white boards

**Flash Card Creator**

[http://www.aplusmath.com/Flashcards/Flashcard\\_Creator.html](http://www.aplusmath.com/Flashcards/Flashcard_Creator.html)

This site from aplusMath allows for the easy creation of online/printable math flash cards

**Interactive Simulations for Math and Science**

[http://phet.colorado.edu/simulations/index.php?cat=Featured\\_Sims](http://phet.colorado.edu/simulations/index.php?cat=Featured_Sims)

This site is from The University of Colorado

**Interactives**

<http://www.learner.org/interactives>

Interactives" provides educators and students with strategies, content, and activities that can enhance and improve students' skills in a variety of curricular areas.

**Interactive Library Applets for Math, Chemistry, Biology, Biochemistry & Earth Science 6-12**

[http://edinfo.securesites.net/il/il\\_math.htm](http://edinfo.securesites.net/il/il_math.htm)

The Interactive Library is about "real interactivity"! The database contains hundreds of activities that make use of sophisticated java, vrm1 and shockwave programs. Teachers can create their own activity sheet to go with the programs. Students can use these programs to supplement their classroom activities, or use one of the more advanced applets as a starting point for their science project.

**Introducing Integers (6-8)**

<http://mathstar.lacoe.edu/newmedia/integers/intro/media/media.html>

This site contains hands-on approaches for teaching the sometimes challenging concept of integers. Included are video clips, concrete models and Mat Board for solving the problems. Quick-Time media player is required.

**Java Math & Science Applets**

<http://www.falstad.com/mathphysics.html>

**Johnnie's Math Page**

<http://jmathpage.com/index.html>

Links to interactive math tools and activities for students and teachers.

**Lure of the Labyrinth**

<http://labyrinth.thinkport.org/www>

This site contains a interesting digital game for middle-school pre-algebra students. It includes a wealth of intriguing math-based puzzles wrapped into an

exciting narrative game in which students work to find their lost pet - and save the world from monsters.

**Math.com**

<http://www.math.com/students/puzzles/puzzleapps.html>

This site has a large number of math puzzles and games. Many can be used with an interactive white board

**MathsNet (K-12)**

[www.mathsnet.net](http://www.mathsnet.net)

MathsNet is an independent educational website providing free mathematics resources to the education community. Its aim is to offer truly interactive resources that are both wide and deep in terms of their applicability and usefulness. MathsNet is not an online textbook. It is interactive, requiring the user to participate rather than be a passive observer.

**Math Forum**

[http://mathforum.org/library/resource\\_types/simulations](http://mathforum.org/library/resource_types/simulations)

This site contains a listing of a number of additional sites that contain Math interactive simulations.

**MathNet Number Cruncher**

<http://mathsnet.net/cruncher/index.html>

**Math Playground**

<http://www.mathplayground.com/index.html>

Welcome to Math Playground, an action-packed site for elementary and middle school students. Practice your math skills, play a logic game and have some fun!

**MathTV**

<http://www.mathtv.org>

This site has interactive games and simulation related to math problem solving.

**Math Tool Chest**

[http://macmillanmh.com/math/mathtoolchest/mtc\\_online](http://macmillanmh.com/math/mathtoolchest/mtc_online)

This site has a 'kid' look and feel and many Math related interactive games.

**MathVids**

<http://www.mathvids.com>

MathVids.com is a website dedicated to providing high quality, instructional, free math videos to middle school, high school, and college students who need math help.

**Mathway**

<http://mathway.com>

This site is powered by Bagatrix Solved!™ technology, Mathway provides

students with the tools they need to solve their math problems. With tens of millions of problems already solved, Mathway is the #1 online problem solving resource available for students, parents, and teachers.

### **Online Calculators**

**Instacalc** <http://instacalc.com> (also creates charts)

### **Calcr**

<http://instacalc.com/calcr>

(basic calculator only - powered by Instacalc)

### **e-Tutor Graphing Calculator**

<http://www.e-tutor.com/et2/graphing> <http://www.calcoolate.com>

### **Calcoolate**

<http://www.calcoolate.com>

(Also available as a download for Windows machines.)

### **Create a Graph**

<http://nces.ed.gov/nceskids/createagraph>

(creates five kinds of graphs)

### **Online Conversion**

<http://www.onlineconversion.com>

This site can convert just about anything to anything else.

### **NumberNut**

<http://www.numbernut.com/index.html>

This site has a variety of activities and games that can be used in conjunction with interactive white boards

### **Random Number Generator** [www.random.org](http://www.random.org)

This site allows for the generation of true random numbers. Teachers could use this for probability and statistics activities as well as drawings, random sampling and more

### **SqoolTools MathFacts (K-6)**

<http://sqooltools.com/freeworkshops/mathfacts.html>

Explore all of the best K-6 math tools the web has to offer! From basic addition to geometry and fractions, from virtual manipulatives to interactive games, from online calculators and converters to graphing tools. You will discover resources for every math topic you teach.

### **Teaching Time**

<http://www.teachingtime.co.uk/>

**Teaching Tables**

<http://www.teachingtables.co.uk/>

**TUSD Interactive Math Portal**

[http://www.tusd1.org/resources/math/students\\_math.asp](http://www.tusd1.org/resources/math/students_math.asp)

**Visual Math Learning (4-8)**

[www.visualmathlearning.com](http://www.visualmathlearning.com)

This site is a free interactive multimedia on-line tutorial for math students. Its first level, Numbers and Arithmetic, is a pre-Algebra level course suitable for grades 4-8. Unlike traditional textbooks, Visual Math Learning is designed to run on any personal computer with a modern browser.

**Web 2.0 Math Symbols Drawing Applications**

<http://software.informer.com/getfree-web-2.0-drawing-math-symbols>

**Web2.0 for Math Educators - a Wiki**

<http://mathfest.wikispaces.com/Web2.0+For+Math+Educators>