

Math Web Resources

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U. S. Census Bureau

Address: <http://www.census.gov/>

Description of content:

This web site is so full of information you really have to navigate through it to find the areas that are useful for educational purposes. The first page actually has a population data counter that changes constantly. Once you enter, you'll find every kind of Census Bureau data from A-Z. Go to the letter "E" and click on "Education"; there you will find a section labeled "Educational Resources at the Census Bureau." In this section, there are six sections, but only two pertain to math: "Tiger Map Server" and "American Agriculture." Tiger Map Server is helpful for students creating online maps with whatever features they want to include. This site also links you to AmericaFactFinder, which provides all sorts of detailed data about populations, agriculture etc, that can be used to create graphs, time lines, charts, pie charts as well as addition and subtraction problems and word problems.

The "Lesson Plan" link guides you directly to a Mathematics section. This will take you to "Youth Resources" where you can create lesson plans about how American agriculture is counted, measured, etc. This section also has games, puzzles and quizzes that teachers can use in their classrooms. The "Economic Research Center" provides even more data about populations. Several "Census of Agriculture" math lesson plans are provided as well.

How you can use this source:

- You can use any Census Bureau Data to have students create maps, charts, time lines, graphs, word problems or you can actually use the activities and lesson plans provided as a guide.
- When using this site, your options are endless, so be creative and analyze it thoroughly to see how you could incorporate this information into some of your future lesson plans.
- Even the population data counter could be used in any math class or lesson.

U.S.Census Bureau. (2010). Retrieved September 10, 2010, from <http://www.census.gov/>

United Nations Statistics Division

Address: <http://unstats.un.org/unsd/demographic/>

Description of contents:

For a global perspective of international populations and living conditions, the United Nations Statistics Division offers a broad range of global data on “demographic and social concerns.” The site is easy to navigate and draws from individual country databases as well as from UN sources. Separate pages offer comprehensive data across ten broad categories of demographic information. Every page details the standards and methods for individual databases. Data is presented in pdf files as well as html and excel format from sources released as late as September 2010. This site provides a useful math tie-in for social studies lessons, providing comprehensive community and economic information for countries around the world.

Databases include:

- Size and structure of population, births, deaths, migration, density, urbanization, and ethnocultural characteristics:
- Family formation, families and households: Data on marriage and divorce rates by urban/rural residence, age of bride and groom, and birth rates current as of 2005/2006.
- Health, human functioning and disability
- Housing and its environment
- Learning and education
- Economic activity
- Allocation of time and time use (recreation and leisure time) (incomplete data)
- Social security and welfare (indirect link)
- Distribution of income and consumption; wealth and poverty (indirect link)
- Public order and safety, offenders and their victims (indirect link)

How you can use this source:

- Analyze demographic data (population, birth rate, literacy, ethnocultural breakdown) for an individual country across time
- Compare and contrast population data using graphs, charts, maps
 - Between countries on different continents (Europe vs Africa)
 - Between countries within a continent (Algeria vs Chad)
 - For a specific nation across decades (1950 vs 2000)
- Compare analysis from UN data with interactive cartograms such as <http://show.mappingworlds.com/world/>

United Nations Statistics Division, (2010). Retrieved September 9, 2010 from <http://unstats.un.org/unsd/demographic>

Math Dictionary.com

Address: <http://mathdictionary.com>

Description of Contents:

Math Dictionary is a free resource guide that can be used to obtain mathematical terms, strategies and tables for all grade levels.

There are several sections: “Calculator,” which is divided into “Circle Solver,” “Savings Calculator,” “Quadrant Equation,” and “Prime Number.” If you need to convert measurements, the “Tools” section is a “Unit Converter” that converts units for length, area, liquid, volume, energy and mass, as well as pressure and velocity. If you want your students to play logical games, the “Games” section includes: English 16, Peg Solitaire, Tower of Hanoi, Hex-7, TACTIX and several others.

The dictionary section is quite lengthy and contains even the most obscure definitions for mathematical terms. If you need a definition for basically ANY math term, click on any letter A-Z to find what you need. Clicking on “Angle” brings up a detailed definition and description of several different angles. If your primary student is wondering about Triangles, just click on “triangle” and a detailed definition is provided. I liked the definition and description for “circle” because it provided a detailed drawing of a circle that included the diameter, radius etc., as well as the definitions, but which could be easily understood.

How you can use this source:

- You can use this in Centers and have your students play games or if you need a unit converted, instead of searching everywhere to find the conversion, use this site.
- Have students use this site to study for tests, SOL’s, SAT’s etc.
- Use when you need to look up a mathematical term.

Math Dictionary.com. (2010). Retrieved September 10, 2010, from <http://mathdictionary.com>

BrainPop

Address: <http://www.brainpop.com>

Description of Contents:

When you enter this site, it is clearly an animated educational site, with lots of bright colors and action. The home page guides you to social studies, math, English, art, health and engineering. You can also link into any state's standards if you need to.

Every section begins with a short animated movie entitled, "The Mysteries of Life" which is narrated by Tim, and also presents Moby the robot as his helper. If your student wants to learn more about decimals, "The Mysteries of Life" movie will start and Tim will ask a question, define decimals and give several examples. Every section also contains related activities, quizzes and experiments. If your student has a question about Calculations and Computations, click on this and it will bring up 42 squares to choose from. Some examples include: absolute value, binary division, graphs, division etc.

There is also BrainPop Jr., geared towards K-3rd grade, BrainPop Spanish, and BrainPop Educator. BrainPop Educator contains lot of resources for teachers including lesson plans for every subject up to the eighth grade. This will also take you to whichever state's standards you need. If you are looking for a fun and easy math lesson plan for K-3, four are provided for you: "Adding with Moby," "Basic Subtraction," "Fractions with Moby," and "Making Sense with Cents." BrainPop Educator also provides you with quick links to activity pages that include: whiteboard resources, graphic organizer, Taxes, Pi, angles, geometry and binary to name a few.

How you can use this source:

- This source can be used in any classroom, the library, the computer lab and at home etc. It does require a subscription and it is not free. Hopefully your school will pick up the cost.
- Use as a great Centers activity and definitely for the review of SOL's.

BrainPop. (2010). Retrieved September 10, 2010, from <http://www.brainpop.com>

Math Playground

Address: <http://www.mathplayground.com/games.html>

Description of contents:

For students who enjoy electronic gaming, Math Playground offers interactive math activities for all grade levels broken down into three broad categories: Math Games, Word Problems, and Logic Puzzles. The site also provides student support through a page of “Math Videos” with more than seventy short presentations addressing numbers and their properties, arithmetic, fractions, decimals, percent, ratio and proportion, measurement and data, algebra and pre-algebra, and geometry.

The Math Games page includes practice of math concepts from general math knowledge to algebraic reasoning across two dozen games including titles such as “Math Millionaire,” “Calculator Chaos,” and “Bridge Builders.” The Logic Puzzle page offers a recognizable collection of games such as Connect 4, Tangrams, Tetra Squares, and Battleship. The Word Problem page provides grade level tags on its ten categories of activities and presents games with sports themes, puzzles, and SAT format simulations. An example of Math Playground is Grand Slam Math on the Word Problem page. This baseball themed game has two levels and provides practice for both single and multistep word problems. The first level has 15 addition and subtraction problems and the second has 12 multiplication and division problems. The introduction alerts students that the game is designed to become progressively more difficult. When the student answers incorrectly, an explanation of how to provide the solution is offered but the answer is not provided.

How you can use this source:

- Students can use this site independently to review and reinforce math concepts.
- Teachers can use this site as a computer center for review and reinforcement. Given the large selection of options and levels, teachers can find an appropriate level of challenge to meet each student’s unique abilities.

Math Playground, (2010). Retrieved September 9, 2010 from <http://www.mathplayground.com/games.html>

Wonderful World of Weather

Address: <http://www.proteacher.com/cgi-bin/outside.cgi?id=11486&external=http://www.k12science.org/curriculum/weatherpr oj/index.html&original=http://www.proteacher.com/110022.shtml&title=Wonderful%20World%20of%20Weather>

Description of contents:

The Stevens Institute of Technology's Center for Innovation in Engineering and Science Education designed this interdisciplinary site as a resource tool for elementary school teachers. Wonderful World of Weather is one of Stevens' nine "Real Time Data Projects" linked to curriculum standards and is the only module aimed for grades K-6. Seven of the eight remaining Real Time Data Projects are appropriate for grades five or six and focus on activities such as ocean waves and tides, seismic activity, cargo ship navigation, and ozone levels. The ninth module addresses aircraft flight data and is intended for high school students

The Wonderful World of Weather module allows students the opportunity to apply math skills to their lived experience of weather. The Teacher Guide section is organized into three pages: Using Real-Time Data, Implementation Assistance, and Lesson Plans. The Lesson Plan page provides a complete learning unit comprised of three introductory activities, ten follow-up core lessons, handouts, and sample handouts completed by students. Through this site, the teacher has the flexibility to tailor the weather investigation to the students' local community or to expand their perspective to a national or global view. All lesson plans are grounded in the application of math concepts. In addition, the site lists "Ask An Expert" and Stevens Institute "Project Leader" contact information for this weather module.

How you can use this source:

- "Reference Page" provides links to more than twenty-five weather-data sites including one that compiled Martian weather data collected from the Mars Global Surveyor.
- Core Lesson Plan #1: "Relative Weather" investigates weather conditions in discrete locales and focuses on math by asking students to compile and organize data and then to calculate averages and display results in graphs and charts.
- Core Lesson Plan #5: Elevation and Temperature asks students to calculate differences in data readings for cities at the same latitude but different elevations.

Stevens Institute of Technology (2010). Wonderful World of Weather. Retrieved September 10, 2010 from <http://www.proteacher.com/cgi-bin/outside.cgi?id=11486&external=http://www.k12science.org/curriculum/weatherpr oj/index.html&original=http://www.proteacher.com/110022.shtml&title=Wonderful%20World%20of%20Weather>