Using Internet-based Resources in Mathematics Teaching

Mark Ellis
CSU Fullerton

http://faculty.fullerton.edu/mellis
Agenda

- Math-related videos/motivators
- Lesson activities
  - Number and Operation
  - Algebra
  - Geometry
  - Problem Solving
  - Real World Applications
- Assessment ideas
- Teacher resources
- Websites for Students and Families
- Time to play!
Videos for Concepts & Motivation

- **United Streaming** [paid by OUSD]
- **The Futures Channel**
- **ESPN Sports Figures**
- **Why do we need to learn algebra?**
  - Webquest for students to do online
- **Teacher Tube** (believe it or not!)
  - The rapping teacher
Number and Operations

Understand meanings of operations and how they relate to one another.

- Develop an understanding to work flexibly with fraction operations
- Factors and Area of Rectangle
Algebra Standard

Identify functions as linear or non-linear and contrast their properties from tables, graphs, or equations.

- Gcalc graphing calculator
- Slope Slider
- Cockroach game!
Geometry Standard

Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.

- Exterior angles of a polygon
- Scale factors and similar triangles exploration
Problem Solving

- Action Math
- Math Playground
- Thinking Blocks
- Math Counts Problem of the Week
Connecting to Real World

- Grains and Fences activity
- Credit Cards webquest
- Number Systems webquest
Lesson Activities

- National Virtual Manipulative Library
- Math Forum Math Tools
- Lesson Activities from Illuminations
- Manipulatives on Math Playground
- HotMath Activities and Games
- Funbrain.com
  - Students can play a variety of math games, and teachers can create online “quizzes”.
- Mathematics Developmental Curriculum - Key concepts and skills K-9 with links to lesson activities that address common misconceptions
Assessment Resources

- Woodward, *Using Writing In Mathematics*
- *Creating Open-Ended Questions*
- *Using Authentic Assessment*
- Here is a neat website that uses released items from the TIMSS
- Also using TTMSS items, this site lets you select specific grade level and content strands
  - [http://www.getsmarter.org/index.cfm](http://www.getsmarter.org/index.cfm)
- Glencoe has automatically generated multiple choice questions for all of its books (select your book and click on the Standardized Test Practice link)
- Released CA state test items
  - [http://www.cde.ca.gov/ta/tg/sr/css05rtq.asp](http://www.cde.ca.gov/ta/tg/sr/css05rtq.asp)
Planning Resources

- Lesson Openers and Problems
- Graphic Organizers for Mathematics
- Concrete-Representational-Abstract approach
- National Whiteboard Network
Vocabulary Resources

- A Maths Dictionary for Kids
- Spanish-English Math Dictionary
- English-Spanish glossary with visual examples
Professional Development

- Take a class for math teachers!
- Watch these online videos of math lessons
  - Geometry lesson
  - Teaching Probability
- After each one, have a group discussion about the teacher’s actions and how these did or did not support students’ active engagement and mathematical learning.
Sites for Students and Families

1. Figure This! (English and Spanish)  http://www.figurethis.org
3. A Math Dictionary for Kids  
   http://www.amathsdictionaryforkids.com/
5. Fun Brain Math Games  
   http://www.funbrain.com/brain/MathBrain/MathBrain.html
8. The Futures Channel  http://www.thefutureschannel.com
9. Hot Math (homework help – some fee-based sections)  
   http://hotmath.com/
10. National Virtual Manipulative Library (English & Spanish) 
    http://nlvm.usu.edu/