



# Emerging Technologies for Math Leaders

## *Representation & Modeling*

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Jon Wray, Howard County (MD) Public Schools  
EMS&TL Project Manager

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# 4. Model with mathematics.

- **Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace.**
  - In early grades, this might be as simple as writing an addition equation to describe a situation.
  - In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community.
  - By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another.
- **Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later.**
- **They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas.**
- **They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.**

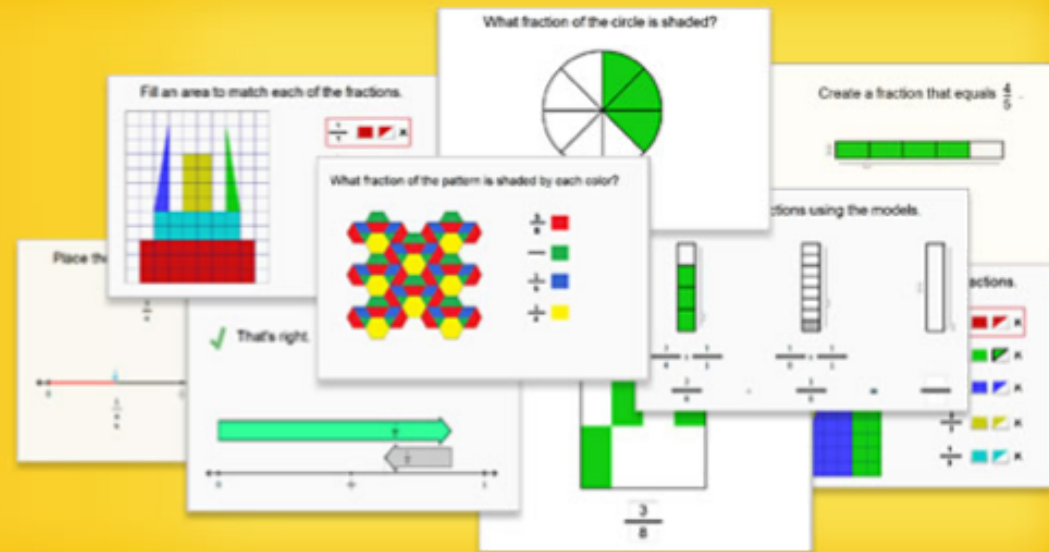
# 5. Use appropriate tools strategically.

- **Mathematically proficient students consider the available tools when solving a mathematical problem.** These tools might include:
  - pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software.
- **Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations.**
  - For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator.
- **They detect possible errors by strategically using estimation and other mathematical knowledge.**
- **When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data.**
- **Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems.**
- **They are able to use technological tools to explore and deepen their understanding of concepts.**

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05.28.2010

#### New Free Tool: Comparing Fractions!

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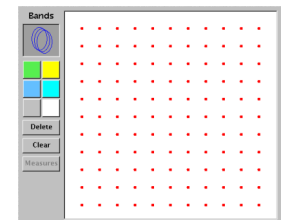
# Jing



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# Wii Remote “Hacks” (whiteboards)



# In Tough Economic Times...

website: <http://penteractive.us>

**Commercial Interactive Whiteboard on P-List \$995.00**

Nintendo Wii Remote



\$35.00

Infrared Pen



\$8.00-  
\$15.00

Tripod and "holster"  
or ceiling bracket



\$15.00-\$30.00

**Total Cost**

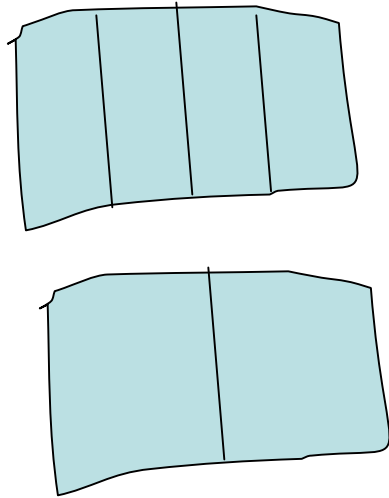
**\$58.00-\$80.00**

ems&t1

The Brookhill  
FOUNDATION

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**≥ \$915.00**



$$\frac{3}{4} \div \frac{1}{2} =$$



\$549-\$700



# Livescribe: The Pulse SmartPen



<http://www.livescribe.com/smartpen/videos.html>

What are some assumptions that you can make about this student's understanding from his representation?

Where does the fraction go? Why?

$$\frac{1}{3}$$

$$\frac{2}{10}$$

$$\frac{8}{9}$$

