March

VOLUME 1 ISSUE 6

MATH MOMENTS

Learning the mathematical practices!

MATHEMATICAL PRACTICE #5

Use Appropriate Tools Strategically

8 MATHEMATICAL PRACTICES

1. Make Sense of Problems and Persevere in Solving Them
2. Reason Abstractly and Quantitatively
3. Construct Viable Arguments and Critique the Reasoning of Others
4. Model with Mathematics
5. **Use Appropriate Tools Strategically**
6. Attend to Precision
7. Look For and Make Use of Structure
8. Look For and Express Regularity in Repeated Reasoning

Mathematically proficient students are able to...

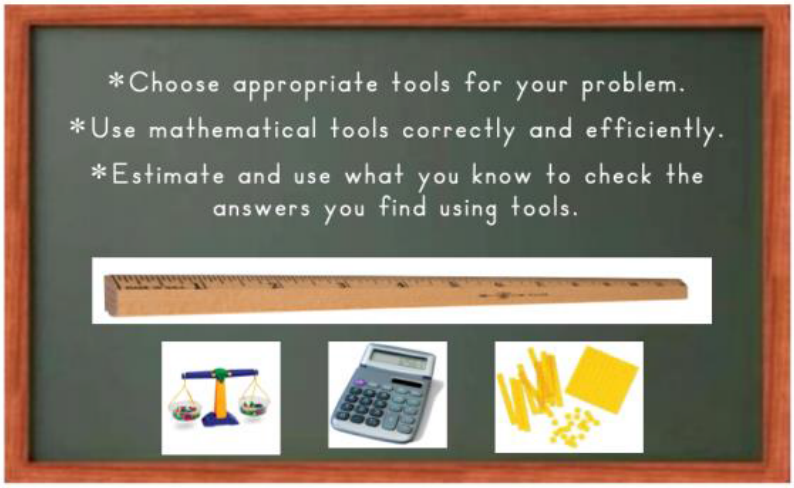
...consider the available tools when solving a mathematical problem.
...become familiar with tools that are appropriate for their grade or course.
...make sound decisions about when these tools might be helpful.
...recognize both the positive outcomes to using a specific tool and/or its limitations.

These tools might include:

- *pencil and paper;*
- *concrete models;*
- *a ruler for measuring or straight edge;*
- *a protractor;*
- *a calculator;*
- *and technology!*

Standard for Mathematical Practice #5

Use appropriate tools strategically.



VIDEO EXAMPLE:

standard 5:

use appropriate tools strategically

http://goo.gl/fbLXBx

inside + × = ÷ mathematics **...invites you into the practices!**

Visit: http://www.insidemathematics.org/

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Utah State University

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MATHEMATICAL PRACTICE #5

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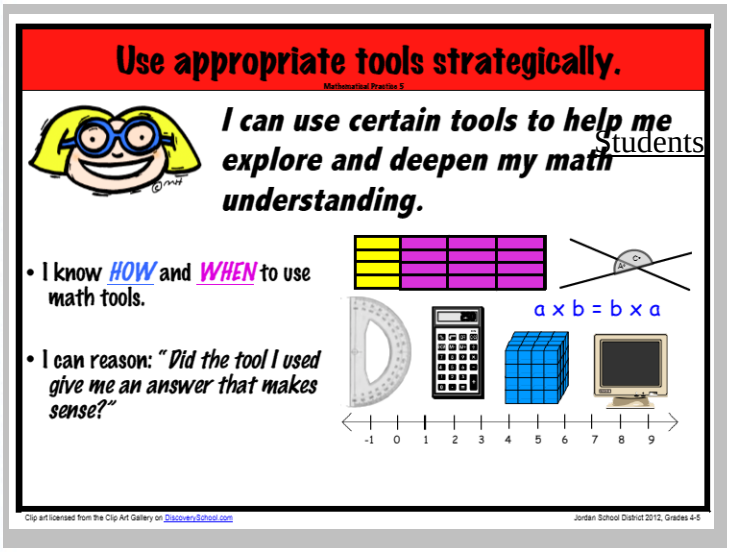


WHAT ARE STUDENTS DOING?

- Detecting possible errors when using tools by strategically using estimation and other mathematical knowledge.
- Making sound decisions about tool selection.
- Consider the available tools when solving a problem (i.e. manipulatives, ruler, protractor, calculator)
- Are able to use technological tools.

-Tompkins Seneca Tioga BOCES (2012)

WHAT DOES IT LOOK LIKE AT EACH LEVEL?

Elementary: Students use the appropriate tool to find the solution.

Middle School: Students select from a variety of tools the ones that can be used to solve a problem and explain their reasonging for the selection.

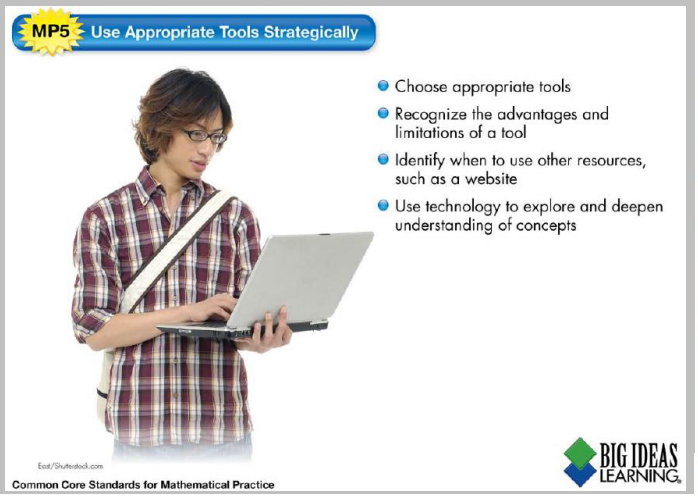
High School: Students combine various tools, including technology, explore and solve a problem as well as justify their tool selection and problem solution.

-adapted from Arizona Dept. of Ed. Mathematics Standards 2010

What it means: Students can select the appropriate math tool to use and use it correctly to solve problems.

Own it: Don't tell students what tool to use, try to leave the decision open ended and then discuss what worked best and why.

Reference taken from: Scholastic (http://goo.gl/mv6nFi)



QUESTIONS TO ASK STUDENTS: *---What strategy could you use to make that calculation easier? ---How would estimation help you solve that problem? ---Why did you decide to use....(tool)?*

-GO Math! Houghton Mifflin Harcourt (2012)

"The important thing is to not stop questioning, curiosity has its own reason for existing."

-Albert Einstein