

Mathematical Practices & Diagnostic Cont.

Day 5

Agenda

8/7/15

Homework:

- Complete MP Foldable
- Finish Nameplate
- Missing work

Materials:

- Foldable (worksheet)

Do Now:

1. Take out:

- Name Plate
- *Syllabus & Materials*
- *About Me WS*
- Cut along the **SOLID** lines for the foldable
 1. One person from your group grab **2** scissors for your table group from the second drawer

Foldable with 8 doors (4 each side)

1. Follow the directions on the handout
2. Draw in your own examples on the inside for homework
3. You may decorate your foldable to make it "yours"

Opening

- EQ: What are the 8 Standards for Mathematical Practice and what types of questions can I ask my peers that address these SMPs?
- Today you will be doing a group activity to help you to be an expert on one of the 8 SMPs, then you will present your SMP to the class.

SMP Activity

- Sit with your group
- Assign jobs
 1. Gopher & Time Keeper (watch time)
 2. Graphic Designer (person who will draw)
 3. Presenter (explains drawing)
 4. Leader (answers questions and makes sure everyone is on task) → not all groups will have this

SMP Activity Directions

1. After you have your job, send the gopher to get paper and your SMP.
2. Write the SMP on the BACK of your paper.
3. Discuss with your group how you will draw out the SMP to help your peers understand it. They will have to GUESS what your SMP is.
4. You have 10 minutes.

SMPs

1) Never Give Up	5) Math Tools appropriately
2) Think about numbers in different ways	6) Check your work
3) Critical Thinking	7) Use what I know
4) Show your work	8) Rules & Patterns

SMP Presentation/Closing

1. Share your drawing by explaining it.
2. Class with guess which SMP it is.
3. The posters you create will be displayed outside on our E119 Exemplary Wall.
4. HOMEWORK:
Complete your MP Foldable.
Be sure to have your Notebook by MON/
TUES

Make sense of problems and persevere in solving them



When presented with a problem, I can make a plan, carry out my plan, and evaluate its success.

BEFORE...

EXPLAIN the problem to myself.

- *Have I solved a problem like this before?*

ORGANIZE information...

- *What is the question I need to answer?*
- *What is given?*
- *What is not given?*
- *What are the relationships between known and unknown quantities?*
- *What tools will I use?*
- *What prior knowledge do I have to help me?*

DURING...

PERSEVERE

MONITOR my work

CHANGE my plan if it isn't working out

ASK myself, "Does this make sense?"

AFTER...

CHECK

- *Is my answer correct?*
- *How do my representations connect to my algorithms?*

EVALUATE

- *What worked?*
- *What didn't work?*
- *What other strategies were used?*
- *How was my solution similar to or different from my classmates'?*

Reason abstractly and quantitatively



I can use reasoning habits to help me contextualize and decontextualize problems.

CONTEXTUALIZE

I can take numbers and put them in a real-world context.

For example, if given
 $3 \times 2.5 = 7.5$

I can create a context:

I walked 2.5 miles per day for 3 days. I walked a total of 7.5 miles.

DECONTEXTUALIZE

I can take numbers out of context and work mathematically with them.

For example, if given
I walked 2.5 miles per day for 3 days. How far did I walk?,
I can write and solve

$$3 \times 2.5 = 7.5$$

Reasoning Habits include *1) creating an understandable representation of the problem solved, 2) considering the units involved, 3) attending to the meaning of quantities, and 4) using properties to help solve problems.*

Construct viable arguments and critique the reasoning of others



I can make conjectures and critique the mathematical thinking of others.

I can construct, justify, and communicate arguments by...

- ◆ considering context
- ◆ using examples and non-examples
- ◆ using objects, drawings, diagrams and actions

I can critique the reasoning of others by...

- ◆ listening
- ◆ comparing arguments
- ◆ identifying flawed logic
- ◆ asking questions to *clarify or improve arguments*

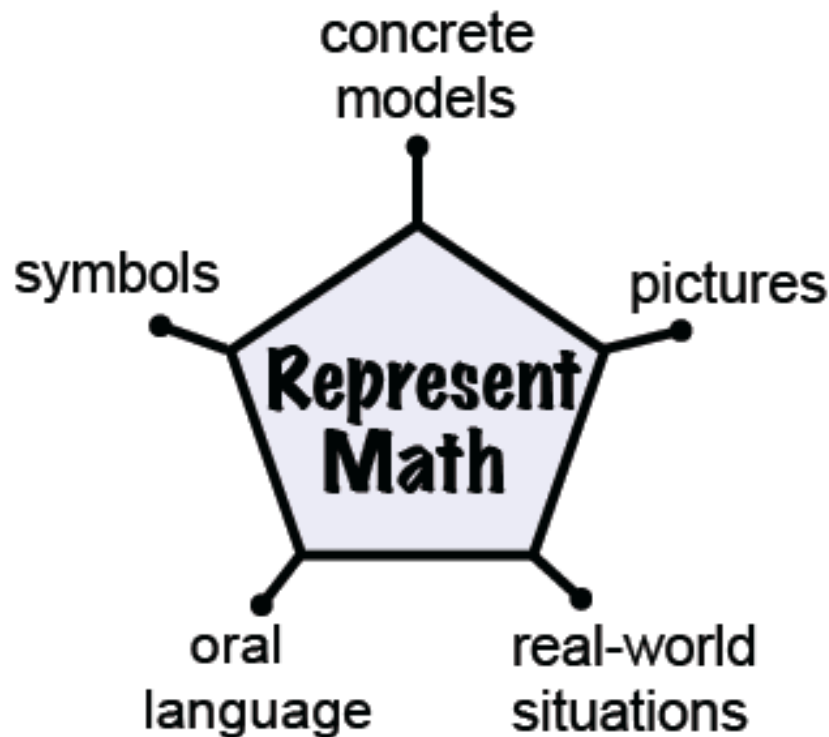
Model with mathematics



I can recognize math in everyday life and use math I know to solve everyday problems.

I can...

- ◆ **make assumptions and estimate to make complex problems easier**
- ◆ **identify important quantities and use tools to show their relationships**
- ◆ **evaluate my answer and make changes if needed**



Use appropriate tools strategically

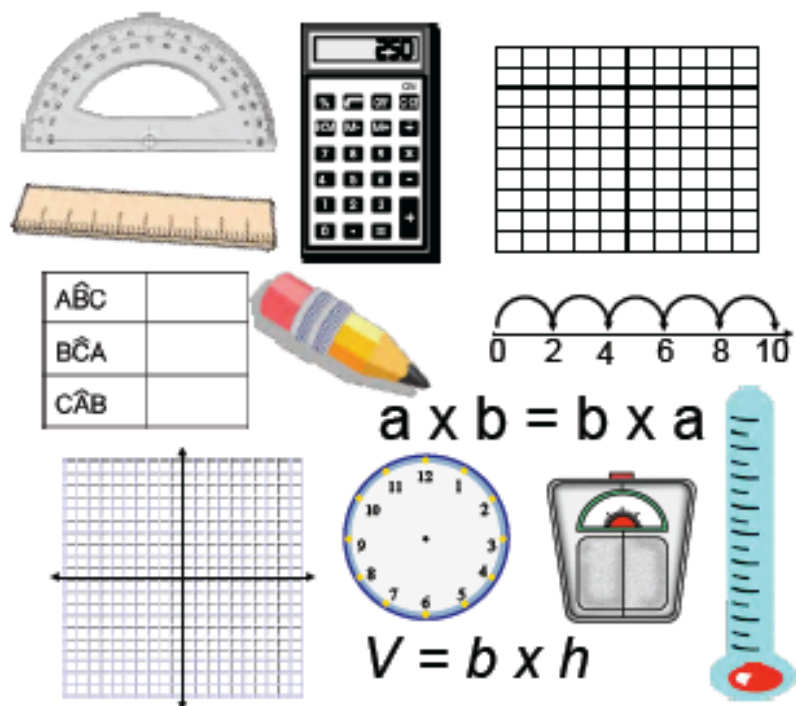


I know when to use certain tools to help me explore and deepen my math understanding.

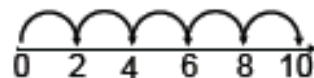
I have a math toolbox.



- ◆ I know HOW to use math tools.
- ◆ I know WHEN to use math tools.
- ◆ I can reason: "Did the tool I used give me an answer that makes sense?"



A \hat{B} C	
B \hat{C} A	
C \hat{A} B	



$$a \times b = b \times a$$

$$V = b \times h$$

Attend to precision



I can use precision when solving problems and communicating my ideas.

Problem Solving

- ◆ I can calculate accurately.
- ◆ I can calculate efficiently.
- ◆ My answer matches what the problem asked me to do - *estimate* or find an *exact answer*.

Communicating

- ◆ I can **SPEAK**, **READ**, **WRITE**, and **LISTEN** mathematically.
- ◆ I can correctly use...
 - math **symbols**
 - math **vocabulary**
 - **units of measure**

Look for and make use of structure

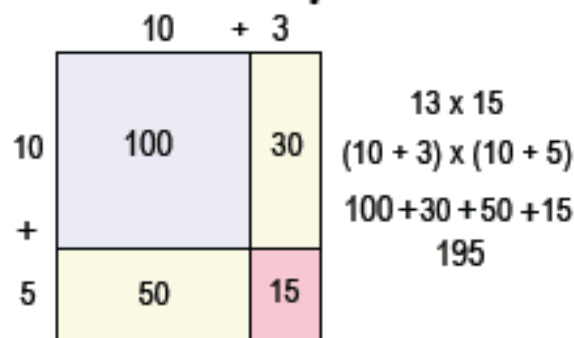


I can see and understand how numbers and spaces are organized and put together as parts and wholes.

Numbers

For Example:

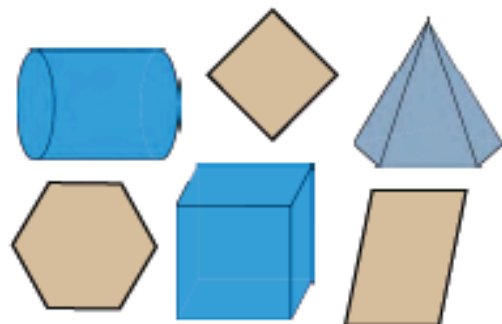
- ◆ Base 10 structure
- ◆ operations and properties
- ◆ terms, coefficients, exponents



Spaces

For Example:

- ◆ dimension
- ◆ location
- ◆ attributes
- ◆ transformation



Look for and express regularity in repeated reasoning



I can notice when calculations are repeated. Then, I can find more efficient methods and short cuts.

For example: $25 \div 11$

$$\begin{array}{r} 2.\overline{27} \\ 11 \overline{) 25.0000} \\ \underline{-22} \\ 30 \\ \underline{-22} \\ 80 \\ \underline{-77} \\ 30 \\ \underline{-22} \\ 80 \\ \underline{-77} \\ 30 \end{array}$$

I am repeating this calculation. The quotient is a repeating decimal.