
K-5 Math Night

November 2, 2016

7-8PM

Agenda

Agenda:

7PM- Enter cafeteria

7:05-7:20- Opening remarks
from Kim Tew, Amanda Matticks
and Jillian Vaz

7:25- Walk to 4th grade hallway

7:30- Breakout sessions to
explore Math Tools/Models and
K-5 Problem Solving and
Perseverance

Continued...

7:35- Participants engage in first
activity

7:45- Participants switch to the
second activity

7:55- Wrap up the activities and
end the night

8:00- Thank you for joining us!

Tonight's Purpose

- I can actively listen to an overview of the content, practices, and skills that my child is working on.
- I can experience the content, practices, and skills that are emphasized in my child's math class.
- I can discover meaningful math activities to implement at home with my child.

K-5 Math Content Standard Strands

Operations and Algebraic Thinking

- Represent and Solve Problems
- Properties of Operations

Numbers and Operations

- Understand Place Value, Counting, and Cardinality
- Number and Operations: Base Ten and Fractions

Measurement and Data

- Solve Problems Involving Measurement
- Represent and Interpret Data

Geometry

- Reason with Shapes and Their Attributes

Content and Skill Spiral



Spiral Trace: Skills, Concepts, and Applications



Mastery Expectations This Spiral Trace outlines instructional trajectories for key standards in Unit 1. For each standard, it highlights opportunities for Focus instruction, Warm Up and Practice activities, as well as formative and summative assessment. It describes the **degree of mastery**—as measured against the entire standard—expected at this point in the year.

Operations and Algebraic Thinking

3.OA.1

Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5×7 .*



By the end of Unit 1, expect children to interpret multiplication in terms of equal groups for multiples of 5 and 10.

3.OA.3

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.



By the end of Unit 1, expect children to solve word problems in situations involving equal groups and arrays by using drawings to

The Eight Mathematical Practices

Standards for Student Mathematical Practice

1 Make sense of problems and persevere in solving them.



Keep on going!

2 Reason abstractly and quantitatively.

Write a story for the mathematical equation

$$\frac{1}{2} \times 4$$

DeJuan exercises $\frac{1}{2}$ hour a day for 4 days.
How many total hours does he exercise?

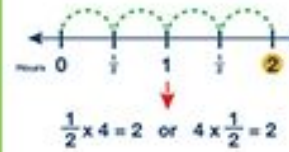
Think what makes sense.

3 Construct viable arguments and critique the reasoning of others.



Talk and explain.

4 Model with mathematics.



Show your thinking.

5 Use appropriate tools strategically.

$3 \times 2 = 6$



Use the right tools.

6 Attend to precision.

120 minutes = 2 hours

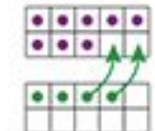
symbol: equals (the same as)

units of measure

Check your work.

7 Look for and make use of structure.

$8 + 4 = 12$



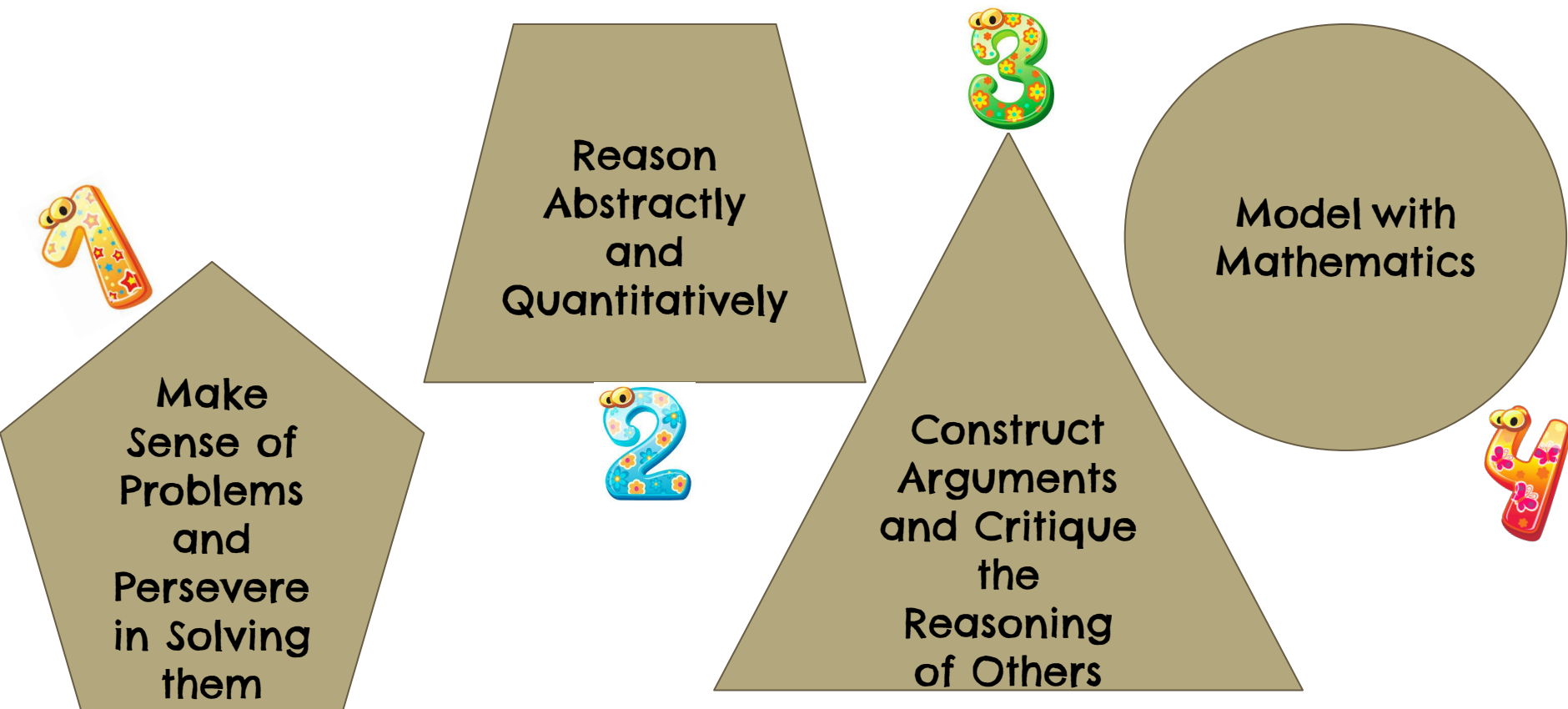
See the pattern or connection.

8 Look for and express regularity in repeated reasoning.



See the pattern or connection.

The Mathematical Practices



The Mathematical Practices



Use
Appropriate
Tools
Strategically

Attend to
Precision



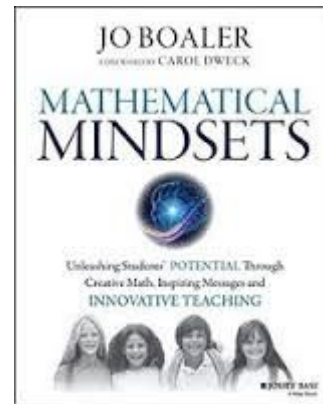
Look for
and
Make use
of
Structure

Look for
and
Express
Regularity
in
Repeated
Reasoning



Advice from Professor Jo Boaler - Author of Mathematical Mindsets

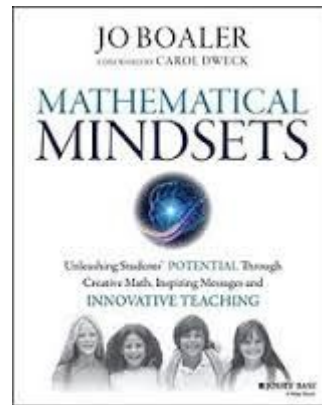
Adapted from youcubed.org



1. Encourage children to play math puzzles and games. This encourages children to enjoy math and develop number sense, which are both critically important.
2. Stay encouraging while children are problem solving. For example: If your child multiplies 3 by 4 and gets 7, say – Oh I see what you are thinking, you are using what you know about addition to add 3 and 4, when we multiply we have 4 groups of 3...

Advice from Professor Jo Boaler - Author of Mathematical Mindsets

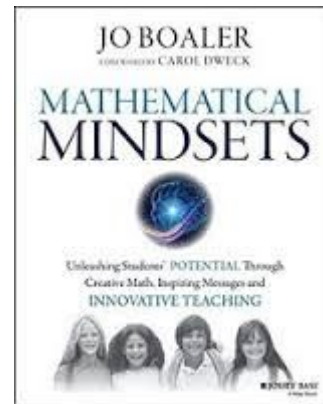
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3. Never share with your children the idea that you were bad at math at school or you dislike it – especially if you are a mother. Researchers found that as soon as mothers shared that idea with their daughters, their daughter's achievement went down.

Advice from Professor Jo Boaler - Author of Mathematical Mindsets

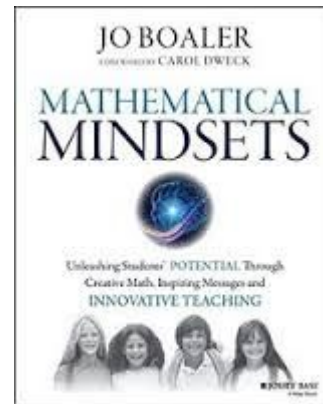
Adapted from youcubed.org



4. Encourage number sense. What separates high and low achievers is number sense – having an idea of the size of numbers and being able to separate and combine numbers flexibly. For example, when working out $29 + 56$, if you take one from the 56 and make it $30 + 55$, it is much easier to work out. The flexibility to work with numbers in this way is what is called number sense and it is very important.

Advice from Professor Jo Boaler - Author of Mathematical Mindsets

Adapted from youcubed.org



5. Perhaps most important of all – encourage a “growth mindset” let students know that they have unlimited math potential and that being good at math is all about working hard. When children have a growth mindset, they do well with challenges and do better in school overall. When they tell you something is hard for them, or they have made a mistake, tell them: “That’s wonderful, your brain is growing!”

Math Tools and Models

K-5

- You will have the opportunity to experience different math activities for you to implement at home with your child.
- You will be able to choose and manipulate appropriate tools and models to solve a mathematical task
- Examples will be grouped by K-1, 2-3, and 4-5

Problem Solving & Perseverance

K-5

- Examples will be grouped by K-2 and 3-5.
- You will have the opportunity to experience an open ended response along with ways to persevere and reflect
_____ on your work.

Resources

- **Advice from Jo Boaler:**

<https://bhi61nm2cr3mkdgk1dtaov18-wpengine.netdna-ssl.com/wp-content/uploads/2016/03/Parent-Night-Handout-vF-1.pdf>

- **New Jersey Student Learning Standards**

<http://www.state.nj.us/education/cccs/>

- **Standards for Mathematical Practices**

<http://www.corestandards.org/Math/Practice/>

Breakout Sessions

Room # (4th grade hallway)	Last Names
E-4 (Berkey)	A, B, C, D
E-6 (Cucinotti)	E, F, G, H
E-7 (Castronovo)	I, J, K, L
E-9 (Wilson)	M, N, O, P
E-10 (Zaffarese)	Q, R, S
E-11 (Dilts)	T, U, V
E-12 (Biondi)	W, X, Y, Z