

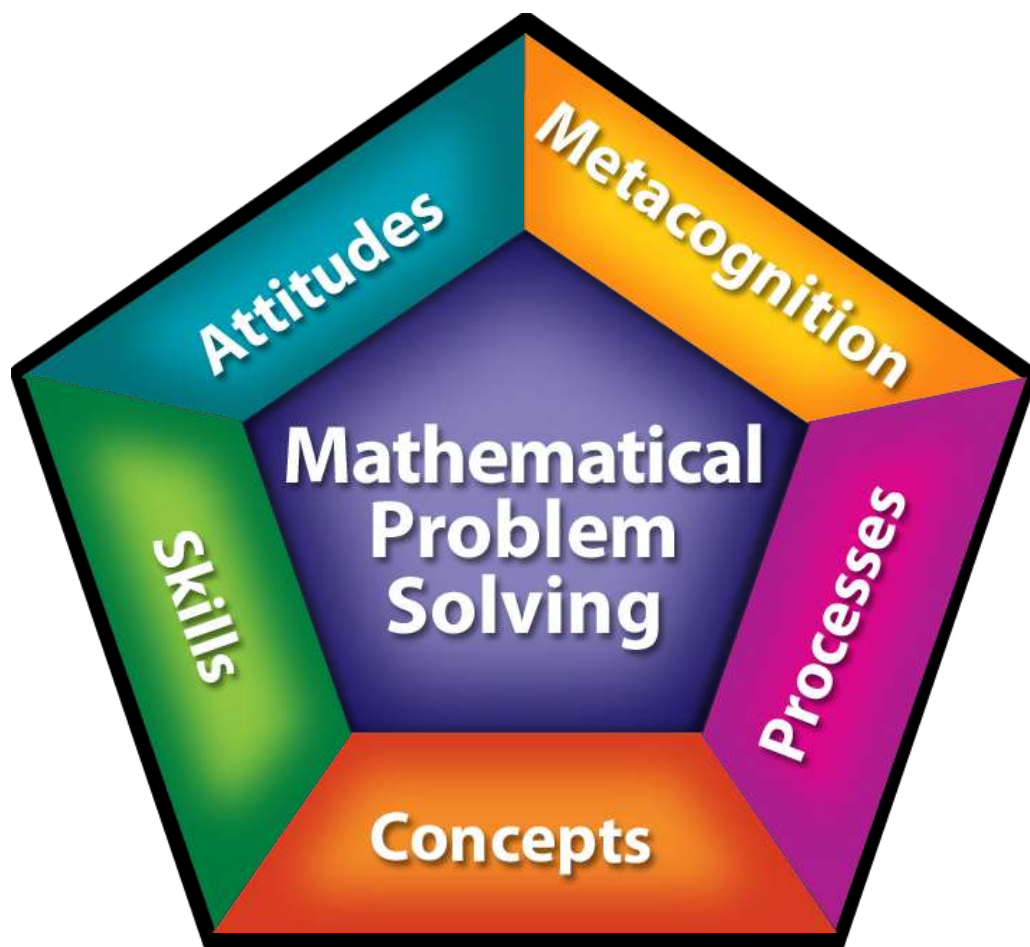


Elementary Math Instruction at Seattle Public Schools

Seattle Public Schools is proud to use *Math in Focus* because it:

- Teaches concepts, not procedures
- Focuses on developing number sense
- Uses concrete to pictorial to abstract sequence
- Problem solving is at the heart of instruction
- Model drawing is the main problem solving strategy
- Mental math is an integral part of the program

The center of the program revolves around mathematical problem-solving. All skills, processes and concepts develop problem-solving attitude and understanding. Students grow as thinkers as well as mathematicians.



Math in Focus heavily emphasizes Mental Math

Look at the following list. Can you compute all these quickly without paper? Can you explain your methods to someone else?

$$3 + 10$$

$$2 \times 3$$

$$11 \times 12$$

$$11 + 29$$

$$321 \times 8$$

$$60 - 13$$

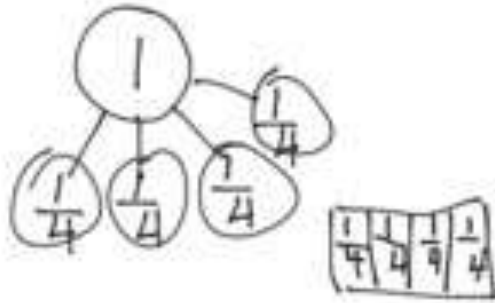
Some lingo *Math in Focus* uses:

- Number bonds
- Branching and decomposing numbers
- Bar models

Math Models

A mathematical model is a way to represent a situation in order to understand it and to solve a problem. A model is a “picture” of the situation.

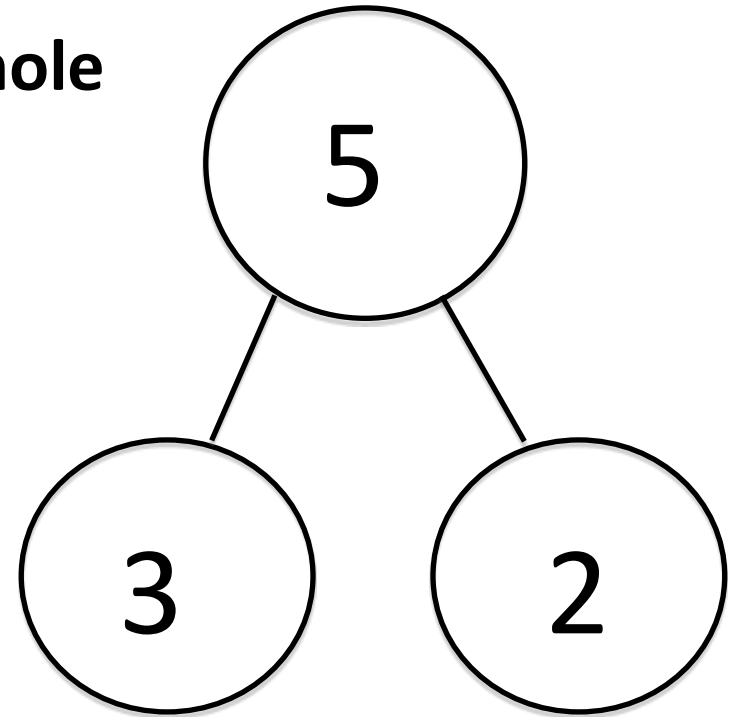
- Many different ways to draw models
 - **Number bonds**
 - Number lines
 - Area model
 - Bar models
 - And many, many more!



Number Bonds

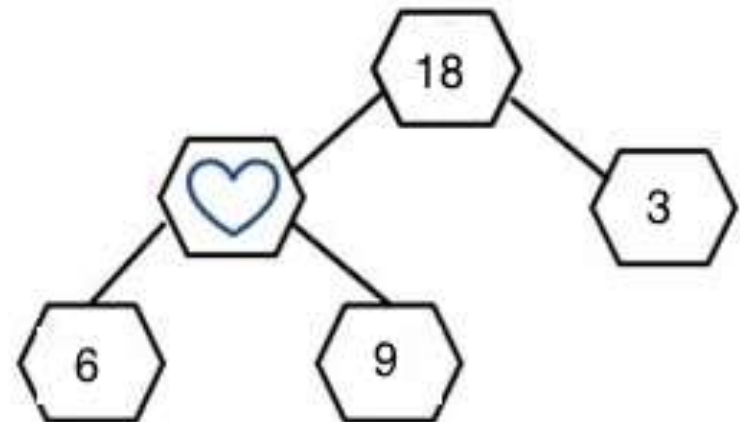
- part/part whole
- decomposing numbers
- relationship between addition & subtraction

Whole



Part

Part



Modeling with a Number Bond

Example:

- Andra has 3 apples and Yosef has 2 apples. How many apples do they have altogether?

Progression of Models

- Objects (**concrete**): **apples, blocks, counters**
- Drawings that do or don't look like the objects (**pictorial**): **apples, circle for each apple, triangle for each person with numbers inside**
- Equations, tables, graphs (**abstract**): **$3 + 2 = \underline{\quad}$**

Students will learn about “branching and decomposing” numbers

Addition with Number Decomposing (Branching) – encourages thinking about place value. This strategy builds on number bonding. Students should be proficient at decomposing single numbers before attempting adding using this strategy.

$$\begin{array}{c} 21 + 14 = \\ \diagdown \quad \diagup \\ 20 \quad 1 \quad 10 \quad 4 \end{array}$$

Break up each number into its place value parts—the tens and the ones.

$$21 + 14 =$$

$$20 + 10 + 1 + 4 =$$

$$30 + 5 = 35$$

Add the tens together. Add the ones together.

Add the two sums together to get the final answer.

Math Models

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- Many different ways to draw models
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**A Bar Model is
one or more
rectangular bars
with labels**

Bar Model Examples – 2nd Grade

Label 1	Label 2
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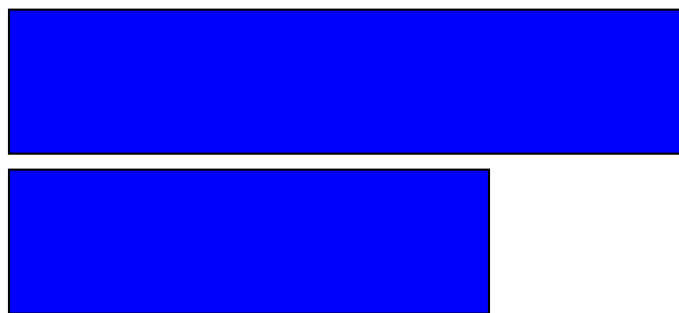
- Helen has 14 breadsticks. Her friend has 17. How many do they have altogether?
- Helen has 14 breadsticks. Her friend has 8 more. How many do they have altogether?

Students may be asked to make a model drawing this year that looks like this.

Bar Model Drawing



Part/Part/Whole



Comparison



Equal Parts

Bar Models 3rd & 4th Grade

- 3rd grade: Jack has 4 boxes of pears for sale. Each box contains 8 pears. Katrina bought 15 pears from Jack. How many pears does Jack have left?
- 4th grade: Garrett had three times as many books as Hilary. If they had 60 books altogether, how many books did Deana have?

Bar Models – 5th Grade

- $\frac{2}{3}$ of Casey's money is equal to $\frac{1}{3}$ of Linda's money, and their total funds equal \$180. Find out how much they each have.

Social Media



singaporemathblog.com



<http://www.facebook.com/mathinfocus>



twitter.com/singapore_math

Singapore Math Comes to the United States!

Since 1995 Singapore has scored at the top on the Trends in International Math and Science Study (TIMSS). *Math in Focus* is the U.S. Edition of Singapore's most widely used program.

ARRIVED FROM SINGAPORE

SEARCH

HOME SCHOOL BLOGGERS EDTECH EVENTS MATH NEWS MIF TALKS RESEARCH THINK CENTRAL VIDEO

Sept 19

New Survey: How Do You Assess Math Understanding in Kindergarten?

by kellitrainer (Edit post)

Kindergarten teachers are notoriously spontaneous and creative. They know how to ask great questions and to lead students to the learning goal. But how can you keep track of 25 active 5-year-olds physically and academically? Share your ideas in this week's poll daddy survey. We'll feature some of your ideas and probably ask for you for more!

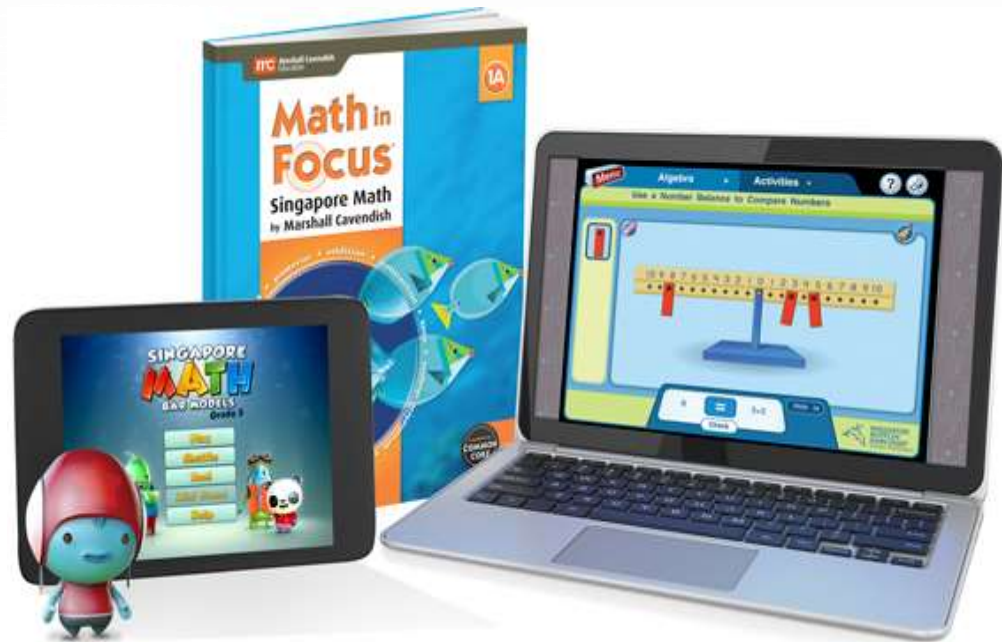
Math in Focus
The Singapore Approach

Houghton Mifflin Harcourt

<http://www.mathplayground.com/thinkingblocks.html>

To get online textbooks,
including Spanish versions,
videos, and virtual
manipulatives, go to
www.seattleschools.org

- Students
- Support
- Resources by Subject
- Math in Focus (bottom of the left column)
 - user name: *studentsps*
 - password: *access*
- Choose a resource





Thank you!!!

Thank you for your high level of engagement this evening!

For further questions contact:

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