



PARENT EDUCATION WORKSHOPS

COMMON CORE MATH: Strategies and Resources to Help Your Child

Crocker Highlands
Iris Wheeler & Heather Fink
September 14th, 2017

What is Math?

**Parents' beliefs
about math change
children's achievement.**

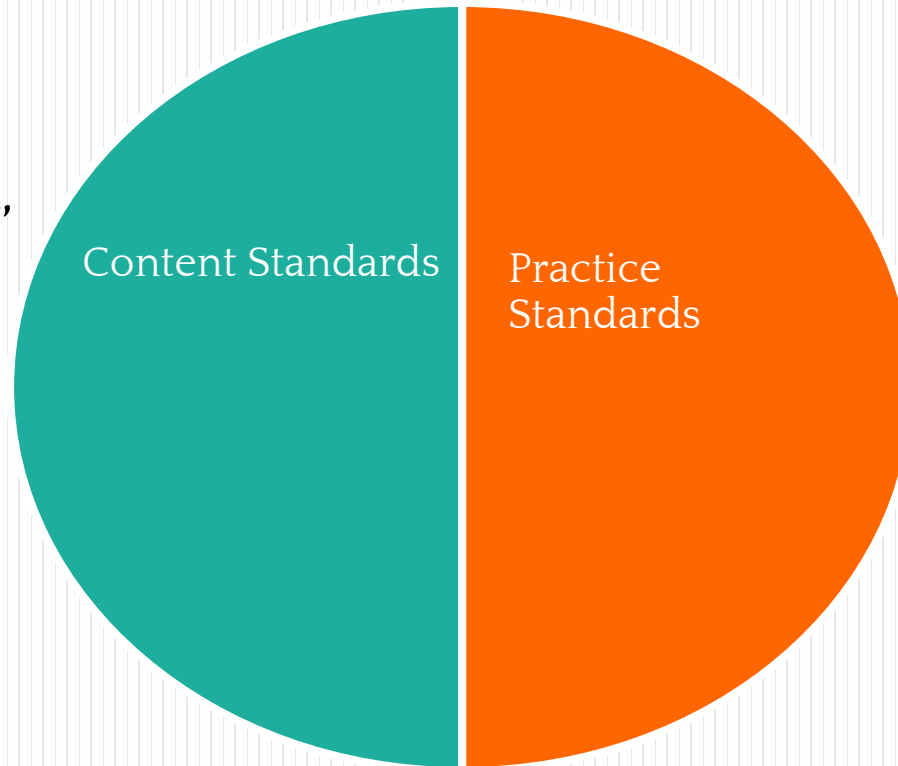
OBJECTIVES

- Learn and practice a few of the new strategies being used in mathematics instruction at Crocker
- Hear the history and reasoning behind Common Core State Standards for Mathematics
- Insight into Crocker's methods, approaches and materials
- Where and how to find useful information online
- How students should approach the material
- How to support your child at home with math

AGENDA

- Welcome
- What is Math?
- Common Core Standards for Mathematics
- Math Talk
- Open Math Task
- Math Strategies and Resources
- Questions

CCSS-M Standards



- The “what” of math
- Different for each grade

- The “how” of math
- Same for K-12

COMMON CORE STATE STANDARDS FOR MATHEMATICAL PRACTICE

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.**

Math Shifts at Crocker Highlands

Students will:

- Experience rich mathematics
- Talk about math & share 'how' they know (metacognitive skills)
- Think about numbers flexibly
- Use multiple strategies
- Solve problems through productive struggle
- Explore patterns and relationships in mathematics
- Learn that everyone can be good at math

Math Talk

$$12 \times 15 =$$

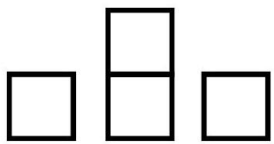
Math Talks *are a routine that supports some of the key goals of the common core*

(Number talks are math talks that focus on developing number sense, fluency and flexibility)

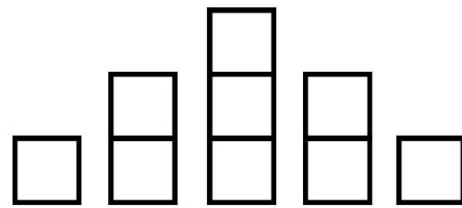
- Number sense – an awareness and understanding about what numbers are, their relationships and their magnitude, including the use of mental math and estimation
- Fluency – knowing how a number can be composed and decomposed and using that information to be flexible and efficient with solving problems

OPEN MATH TASKS

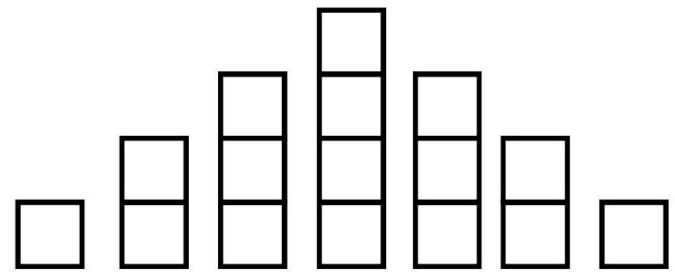
How do you see the shapes growing?



Case 1



Case 2



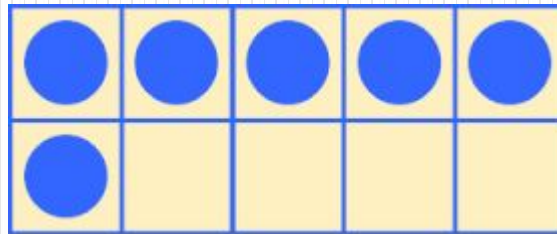
Case 3



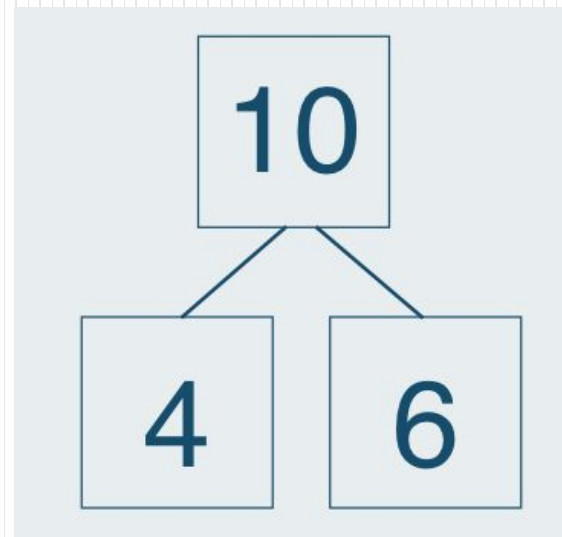
Math Strategies that Promote Number Sense and Conceptual Understanding

KINDERGARTEN AND FIRST GRADE -- MODELS

- Ten Frames



- Counting forward and backward by 2's, 5's, 10's, 100's
- Doubling and halving
- Patterns
- Subitizing
- Number Bonds:
(5, 10, 20, 100)



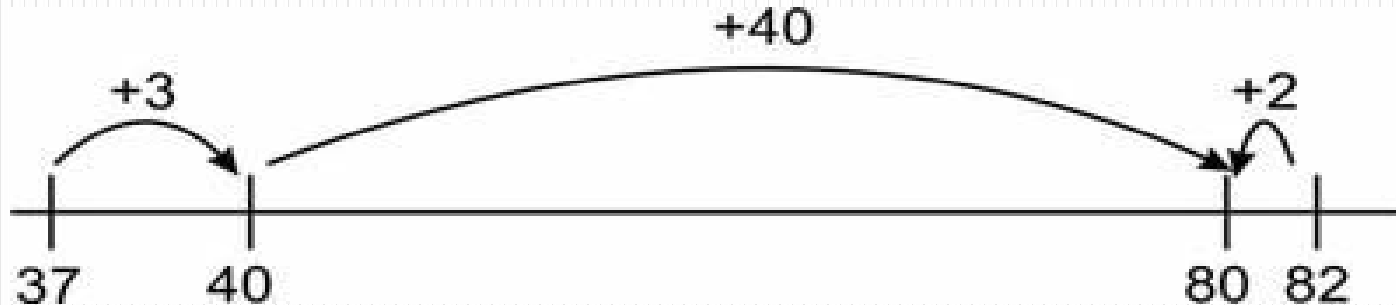
Math Strategies that Promote Number Sense and Conceptual Understanding

FIRST THROUGH FIFTH GRADE -- MODELS

SUBTRACTION STRATEGIES

Rewrite the problem: $82 (+3)$ 85
 $- \underline{37 (+3)}$ $- \underline{40}$

Count on:



$$82 - 37 = \underline{\quad}$$

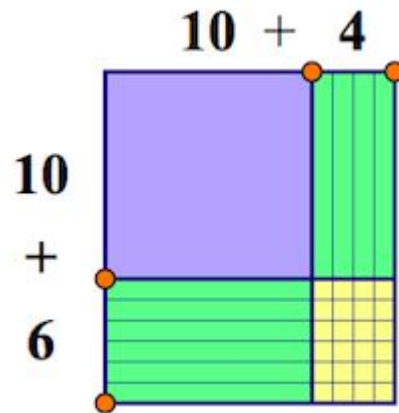
Math Strategies that Promote Number Sense and Conceptual Understanding

THIRD THROUGH FIFTH GRADE - MODELS

Multiplication Strategies - Area Models

$$14 \times 16 =$$

Base Ten Blocks:



100
40
60
<u>+ 24</u>
224

Place Value (Box) Method:

	10	+	4
10	100		40
+	6	60	24

Math Strategies that Promote Number Sense and Conceptual Understanding

THIRD THROUGH FIFTH GRADE

Multiplication Strategies – Mental Math

$$14 \times 16 =$$

Rewrite the problem:

$$14 \times 10 = 140$$

$$14 \times 5 = 70$$

$$14 \times 1 = \underline{+14}$$

(Doubling and/or halving)

$$14 \times 10 = 140$$

$$14 \times 5 = 70 \text{ (half of 140)}$$

HELPING YOUR CHILD BUILD NUMBER SENSE

Questions to ask:

- How did you get that answer?
- Can you think of another way you could solve that?
- Is there a simpler way you could solve it?
- Does that answer make sense?
- Have you found all the ways?
- How do you know?
- How can you know your answer is correct?

HELPFUL MATH RESOURCES

Online:

- nrich.maths.org
- youcubed.org
- TedEd ed.ted.com
- Numberphile Videos
- The Story of Maths (Netflix)
- mathisfun.com
- Crocker Math Site

Apps:

- Fibo! Sudoku, KenKen

MORE HELPFUL MATH RESOURCES

Books:

- How to Be Good at Math (DK Press)
- Go Figure!, Johnny Ball
- What's Math Got to Do With It?, Jo Boaler
- The Boy Who Loved Math, D Helligman
- The Joy of X, Steven Strogatz
- A Slice of Pi: All the Math You Forgot to Remember from School, Liz Strachan

Games:

- Set, Monopoly, Sorry, Chutes and Ladders, Any type of puzzles, logic games, patterns



*Mathematics, rightly viewed, possesses
not only truth, but supreme beauty....*

-Bertrand Russell



QUESTIONS?

PARENT EDUCATION WORKSHOPS

COMMON CORE MATH:
Strategies and Resources
to Help Your Child

Crocker Highlands
Iris Wheeler & Heather Fink
September 14th, 2017