A Common Sense Approach to the Common Core

Math

Math teaches us more than just content

Standards for Mathematical Practice

- **Make sense of problems and persevere in solving them.**
- **Reason abstractly and quantitatively.**
- **Construct viable arguments and critique the reasoning of others.**
- **Model with mathematics.**
- **Use appropriate tools strategically.**
- **Attend to precision.**
- **Look for and make use of structure.**
- **Look for and express regularity in repeated reasoning.**

How has Math Instruction Changed…

Students will learn ***more*** about ***fewer topics***

- In Class…
  - Student will focus on fewer topics.
- At Home…
  - Parents can become familiar with the main topics of instruction

Students will learn ***more*** about ***fewer topics***… Grade Kindergarten

Counting and Cardinality

- Count, write, order and compare numbers.

Operations and Algebraic Thinking

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.
- Add with a sum of 10 or less
- Subtract from a number of 10 less or less

Number and Operations in Base Ten

- Work with numbers 11-19 to grain foundations for place value.

Students will learn ***more*** about ***fewer topics***… Grade 1

Operations and Algebraic Thinking

- Understand and apply properties of operations and the relationship between addition and subtraction to solve word problems.
- Add and subtract using the “Make Ten” strategy

Number and Operations in Base Ten

- Extend the counting sequence.
- Understand place value to add and subtract using regrouping or decomposing.

Measurement and Data

- Measure lengths indirectly and by iterating length units.

Students will learn ***more*** about ***fewer topics***… Grade 2

Operations and Algebraic Thinking

- Solve two step word problems involving addition and subtraction.
- Work with equal groups of objects to gain foundations for multiplication.

Number and Operations in Base Ten

- Expand numbers to the thousands.
- Understand place value to add/subtract 3-digti numbers.

Measurement and Data

- Measure and estimate lengths in standard units.
- Solve addition and subtraction problems involving length.

How has Math Instruction Changed…

Skills are developed ***<u>across grades</u>***

- In Class…
  - Student will build new ideas from earlier topics
- At Home…
  - Parents can understand how these skills are connected
  - Be aware of topics of difficulty

Skills are developed ***across grades***…
(Numbers)

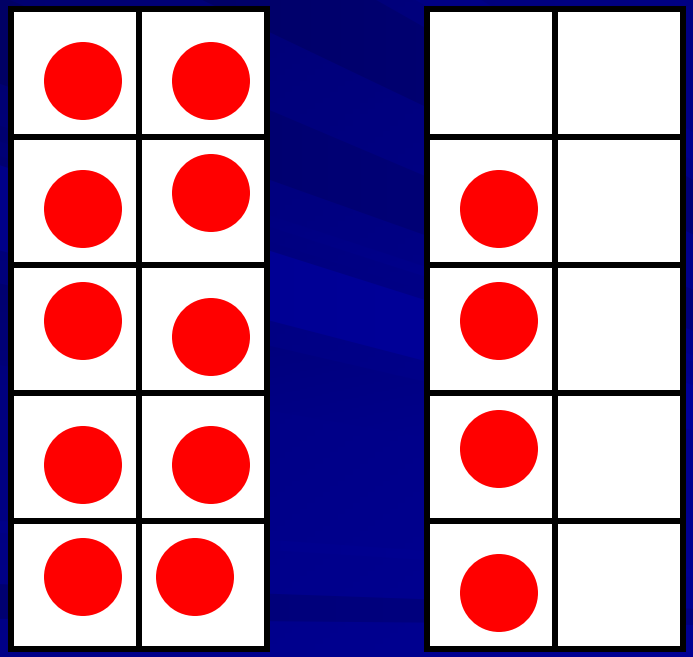
- Grade K:
  - Count to 100 by ones and tens
  - Understand that numbers from 11 to 19 contain a ten and some leftover ones (for example, 14 = 10 + 4)
- Grade 1:
  - Understand that the two digits of a two-digit number represent amounts of tens and ones (place value)
- Grade 2:
  - Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones (place value)
- Grade 3:
  - Begin to recognize fractions as part of a whole

What are we using in the classroom… and at home? (Numbers)

- Kindergarten: Ten Frames
  - Using a ten frame to begin place value
- Grade 1: Bundles of Ten
  - Bundle objects to make groups of ten
- Grade 2: Base ten blocks
  - Composing and decomposing numbers

What are we using in the classroom… and at home? (Numbers)

- Kindergarten: Ten Frames
  - Using a ten frame to begin place value



14 = 10 + 4

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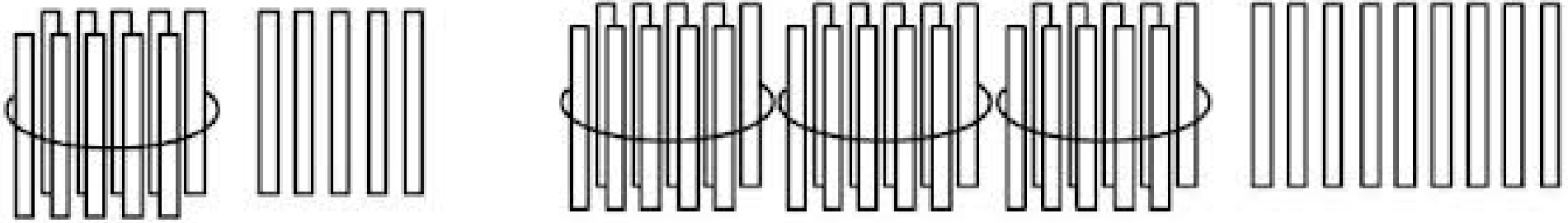
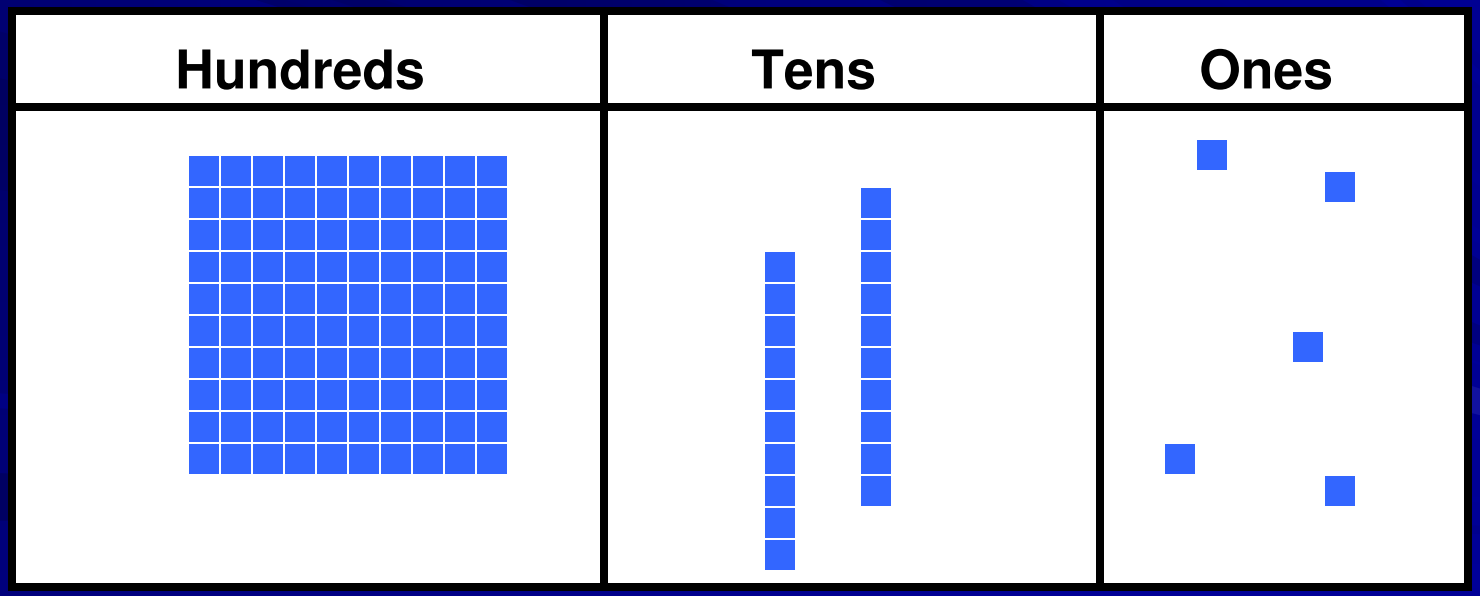


What are we using in the classroom… and at home? (Numbers)

- Grade 2: Base ten blocks
  - Composing and decomposing numbers



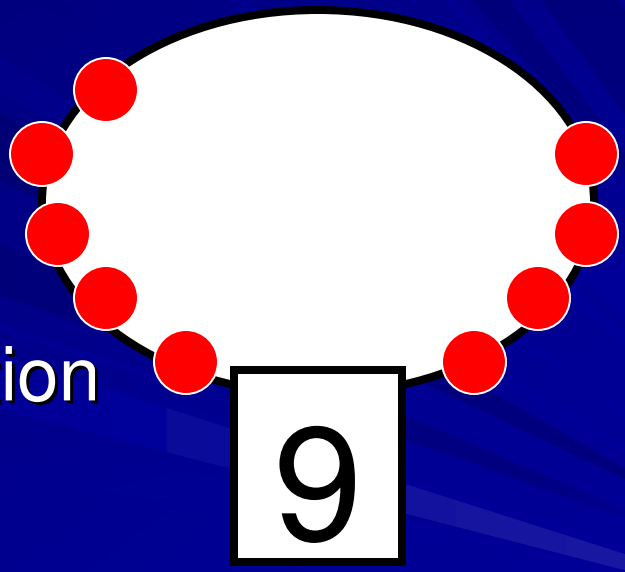
125 = 100 + 20 + 5

Skills are developed ***across grades***…
(Operations)

- Grade K:
  - Represent addition and subtraction with objects, fingers, drawings, etc.
  - Solve word problems by adding or subtracting numbers up through 10 using objects and drawings
- Grade 1:
  - Solve word problems by adding or subtracting numbers up through 20.
  - Solve addition and subtraction problems for different unknown numbers (20 - ? = 15, 9 + 4 = ?)
- Grade 2:
  - Solve one- and two-step word problems by adding or subtracting numbers up through 100
- Grade 3:
  - Multiply and divide numbers up through 100

What are we using in the classroom… and at home? (Operations)

- Kindergarten:
  - Using the terms “put together” and “take apart”
- Grade 1:
  - Models for addition/subtraction



5 + 4 = 9
3 6

What are we using in the classroom… and at home? (Operations)

- Kindergarten:
  - Using the terms “put together” and “take apart”
- Grade 1:
  - Models for addition/subtraction
- Grade 2:
  - Models for addition/subtraction of larger numbers
  - The standard addition/subtraction algorithms

How has Math Instruction Changed…

Not all standards are created equal

- In Class…
  - Student will spend time practicing problems on the same topic
- At Home…
  - Parents can encourage children to memorize their basic facts

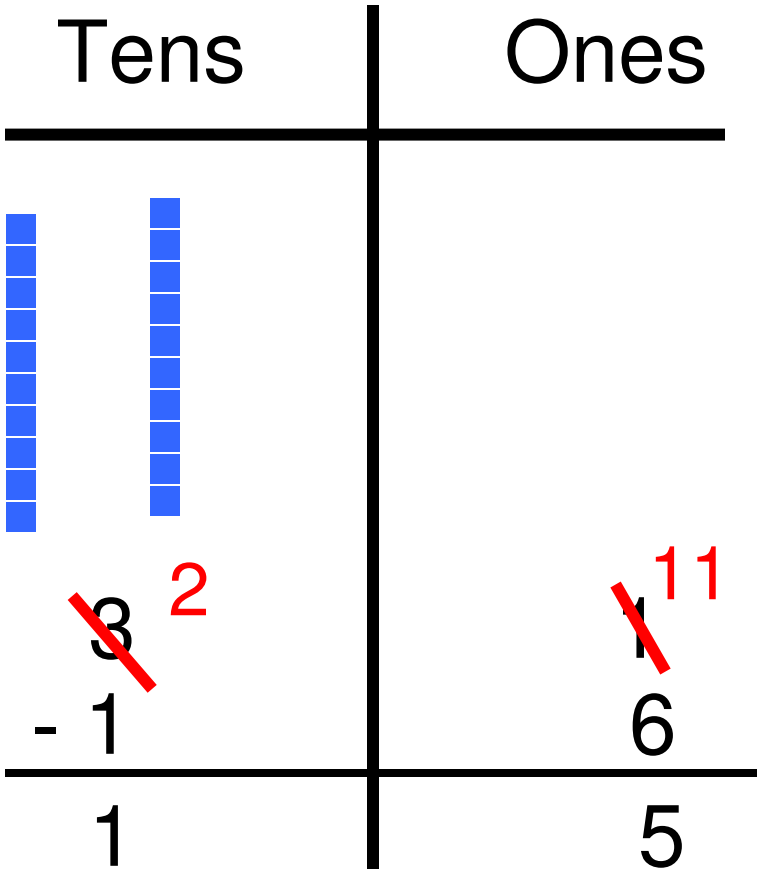
How has Math Instruction Changed…

To appreciate math, you must understand it…

- In Class…
  - Student will talk about math and prove why and how math works
- At Home…
  - Parents can be open to different strategies

To appreciate math, you must understand it…

- Subtraction with Regrouping…



How has Math Instruction Changed…

Math is all around us…

- In Class…
  - Student will know and apply the correct math in real world situations.
- At Home…
  - Parents can ask children to do the math that comes up in your daily life.

Math is all around us…

- **Grade Kindergarten:**
  - Doing chores…
    - Sorting and arranging objects in a logical manner help build the foundation for mathematical reasoning. Ask your child to sort laundry, utensils, toys, etc…
  - In the fruits and vegetable aisle...
    - Use everyday objects to allow your child to count and group a collection of objects. For example, have your child count while they help you pick fruits and vegetables and attach a noun to the number. For example, 1 apple, 2 apples, 3 apples, …
  - Use Math vocabulary…
    - Using mathematical words like above, below, between, first, last, etc. in daily routines help students see their meaning.

Math is all around us…

- **Grade 1:**
  - At breakfast…
    - Ask your child "how many…" questions. For example, if you open a carton of eggs and take out seven, ask, "*How many are left in the carton?*"
  - Make a road trip more mathematical...
    - Play math games with your child. For example, *"I'm thinking of a number. When I add five to it, I get 11. What is the number?"*

Math is all around us…

- **Grade 2:**
  - Talk about temperature…
    - Have your child explain the relationship between different numbers without counting. For example, "*how much warmer will the temperature be tomorrow?*"
  - Flash Cards...
    - Make addition and subtraction flashcards to reinforce prior grade level fluencies… Mentally add/subtract with numbers less than 20.

What else can we do at home?

- **Be Positive!**
  - Avoid statements like "*I wasn't good at math*" or "*Math is too hard*."
- **Play Games!**
  - *Board Games help children develop number sense, foundation of probability and are fun*
- **Use Math Vocabulary**
- **Ask Why?**
  - *How did you figure it out?*

Resources

- www.engageny.org
  - New York's Common cores website
- http://learnzillion.com/
  - Great videos that explain common core concepts
- http://www.azed.gov/azcommoncore
  - Detailed explanation of each standard
- www.commoncoreconversation.com
  - "One stop shopping for the common core"