Welcome to Math Parent Night

Presented by: Kristen McIntyre, Instructional Coach

Tonight's Agenda

- Introduction
- Overview of Math Skills
- Commonalities within Eureka
- Questions
- Resources

EUREKA MATH™

GREAT MINDS™

Overview

Throughout the school year, **students** will spend the most time working on the following topics. They should understand them well by the end of the year.

Overview - Kindergarten

- Counting objects to tell how many there are.
- Count orally to 100 by ones and tens.
- Write numbers to 20.
- Comparing two groups of objects to tell which group, if either, has more. (Group size of up to 20.)
- Understanding which of two written numbers between 1 and 10 is greater (6 is greater than 2).
- Acting out addition and subtraction word problems. Drawing pictures to re present and solve the problems.
- Adding with a sum of 10 or less. Subtracting from a number 10 or less.
- Adding and subtracting within 5 quickly and accurately (3 + 1).
- Understanding what the digits mean in numbers to 19. (18 refers to 1 ten and 8 ones.)

Overview - 1st Grade

- Count and write numbers to 120.
- Solving addition and subtraction word problems starting within 20. (For example, "Five apples were on the table. I ate some apples. Then there were three apples. How many apples did I eat?")
- Adding with a sum of 20 or less, and subtracting from a number 20 or less. A common strategy for these problems is based on the number 10. (For example, to add 9 + 4, a student might first add 1 to 9, making 10, then add the remaining 3 to 10, making 13. To subtract 14 - 5, a student might take 4 away first, making a 10, then take away 1 more, making 9.)
- Mentally add and subtract within 10 (2+5, 8-4).
- Understanding what the digits mean in two-digit numbers (the number 42 refers to 4 tens and 2 ones). Understanding and practicing adding two, two-digit numbers by adding tens and tens and ones and ones. (41 + 27 = 60 + 8 = 68).
- Add within 100, including adding a two-digit and one-digit number together (56 + 7), and adding a two-digit number and a multiple of 10 (56 + 20). Subtract a multiple of ten from a two-digit number (78 - 30).
- Mentally find 10 more or 10 less than a two-digit number, without having to count.
- Measuring lengths of objects by using a shorter object as a unit of length. (For example, "How many pencils long is this table leg?")

Overview - 2nd Grade

• Solving challenging addition and subtraction word problems with one or two steps. (For example, a "one-step" problem would be: "Lucy has 23 fewer apples than Julie. Julie has 47 apples. How many apples does Lucy have?")

• Mentally adding the sum of any two single digit numbers (remembering that 7 + 9 = 16). Subtracting mentally with ease from a number 20 or less.

• Understanding what the digits mean in three-digit numbers. (The number 342 refers to 3 hundreds, 4 tens, and 2 ones.)

• Using understanding of place value to add and subtract three-digit numbers (811 – 367). Adding and subtracting two-digit numbers with ease (77 – 28).

• Mentally add and subtract multiples of 10 and 100 to a given number.

• Measuring and estimating length in standard units. Represent whole numbers from 0 as lengths on a number line.

• Solving addition and subtraction word problems involving length. (For example, "The pen is 2 cm longer than the pencil. If the pencil is 7 cm long, how long is the pen?")

Overview - 3rd Grade

• Understanding the meaning of multiplication and division. Relating division to multiplication. (For example, "I know that 63 ÷ 9 = 7 because I remember 7 × 9 = 63.")

• Build strategies to multiply two single-digit numbers with ease. Multiply mentally (remembering that 7 × 9 = 63) and divide mentally using the times tables (56 ÷ 8 = 7).

• Solving two-step word problems using addition, subtraction, multiplication, and division. (For example, "You already have 12 pens. There are 5 new packs of pens with 6 pens in each pack. How many pens do you have now?")

• Understanding fractions as parts of wholes. For example, ¾ inch is the length of 3 of the parts when 1 inch is broken into 4 equal parts.

• Understanding fractions as numbers. This includes representing fractions and whole numbers on a number line diagram; equating whole numbers and fractions (6/6 = 1 and 3 = 3/1); and comparing fractions in simple cases where the numerators are equal or the denominators are equal (2/8 is less than 6/8 because two parts of a given size are less than six parts of the same size).

• Understand concepts of area measurement, measure area in unit squares, and relate area to multiplication and addition.

• Tell and write time to the nearest minute. Solve word problems involving time intervals and elapsed time on a number line.

Overview - 4th Grade

• Using the four operations, solve multi-step word problems that use whole numbers and have whole number answers, including problems where students make sense of remainders. (For example, "Four classes are going on a field trip. The classes each have 28 students. Buses hold 48 passengers. If all of the students, 4 teachers and 4 chaperones are going on the field trip, how many buses will they need?")

• Adding and subtracting multi-digit numbers using the standard algorithm (23,647 – 5,265).

• Multiplying and dividing multi-digit numbers in problems with a limited number of digits using strategies based on place value(1,638 × 7 or 24 × 17; 6,966 ÷ 6).

• Understanding and applying equivalent fractions (recognizing that ¼ is less than 3/8 because ¼ equals 2/8, and two eighths are less than three eighths).

• Adding, subtracting, and multiplying fractions in simple problems (2 ¾ − 1 ¼ or 3 × ⅝), and solving related word problems that include fractions in context. (For example, you are going to make cookies for a party. You need 2/3 cup sugar for one batch and decide to make 8 batches, so all your neighbors can have a cookie. How many cups of sugar do you need?)

• Understanding and explaining simple decimals in terms of fractions (rewriting 0.62 as 62⁄100).

• Make line plots and solve related word problems involving the addition and subtraction of fractions.

Overview - 5th Grade

• Multiplying multi-digit numbers using the standard algorithm (1,638 × 753). Dividing multi-digit numbers using strategies based on place value (6,951 ÷ 63 = 110 1/3).

• Adding and subtracting fractions with unlike denominators (2 1⁄4 – 1 1⁄3), and solving word problems that include fractions with unlike denominators.

• Multiplying fractions and mixed numbers, and dividing fractions in special cases. Solving word problems using these operations (For example, finding the area of a city block that is 1/3 mile long by 1/5 mile wide; finding the size of a share if 9 people share a 50-pound sack of rice equally, or if 3 people share ½ pound of chocolate equally.)

• Calculating with decimals to the hundredths place (two places after the decimal).

• Understanding the concept of volume, and solving word problems that involve volume.

• Use whole number exponents to denote powers of 10. ($10^4 = 10,000$).

Overview - 6th Grade

• Understanding ratios and rates, and solving problems involving proportional relationships. (For example, "If it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?")

• Dividing fractions and solving word problems related to dividing fractions. (For example, "You are making granola. One batch of granola requires 2/3 cup of nuts. How many batches can be made with 4 cups of nuts?")

• Using positive and negative numbers together to describe quantities. Understanding the ordering and absolute values of positive and negative numbers. Representing points in the coordinate plane that have positive and negative coordinates.

• Reading, writing, and manipulating algebra expressions by applying knowledge of how numbers work (for example, when adding numbers, the order doesn't matter, so $x + y = y + x$). Emphasizing equivalent expressions and using properties of addition and multiplication to rewrite them (for example, $24x + 18y$ can be rewritten as $6(4x + 3y)$ or $y + y + y$ as $3y$).

• Understanding and using the process of solving simple equations (those with one unknown quantity or variable like $7x = 22$).

• Writing equations to solve word problems and describe relationships between quantities. (For example, the distance (D) traveled by a train over a period of time (T) might be expressed by an equation $D = 85T$, where D equals the distance in miles, and T equals the time in hours. This equation could be used to find the time required for the train to travel 100 miles or to find the distance the train would travel in 1.5 hours.)

Overview

- Skills are taught conceptually to develop a deeper (not more) understanding of the concepts.
- Then, fluency of basic facts and computational fluency is required.

Overview - Fluency

K: add/subt within 5

1: add/subt within 10

2: add/subt within 20; add/subt within 100

3: add/subt within 1,000; mult/div within 100

4: add/subt within 1,000,000 using the standard algorithm

5: mult using the standard algorithm

Commonalities

Eureka has commonalities across the grade levels. This coherence assists students in making connections as skills build.

Lesson Components
Terms and symbols
Tools
Representations

Lesson Components

K-5 Lesson Components
➔ Fluency
➔ application problem
➔ concept development / problem set
➔ student debrief
➔ hmwk

6th Lesson Components
➔ discovery / exploration
➔ discussion / socratic method
➔ modeling cycle
➔ word problems
➔ closing
➔ hmwk / problem set

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Concept Development

- The major portion of instruction.

- Intentionally sequenced within lessons and across a module to build toward new learning.

- Often utilizes the deliberate progression from concrete to pictorial to abstract, which compliments and supports an increasingly complex understanding of concepts.

- Accompanied by thoughtfully sequenced problem sets as well as homework.

Name _____ Date _____

1. Round to the nearest thousand. Use the number line to model your thinking.

a. 6,700 ≈ _____
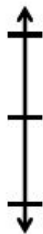
b. 9,340 ≈ _____

c. 16,401 ≈ _____
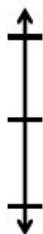
d. 39,545 ≈ _____
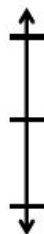
e. 399,499 ≈ _____   840,007 ≈ _____

Problem Set

Similar layout and problems

Name _____ Date _____

1. Round to the nearest thou[sand. Use the numbe]r line to model your thinking.

a. 5,900 ≈ _____
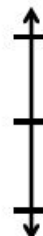
b. 4,180 ≈ _____

c. 32,879 ≈ _____

d. 78,600 ≈ _____

e. 251,031 ≈ _____

f. 699,900 ≈ _____

HOMEWORK!

G3-M1-Lesson 1

1. Solve each number sentence.
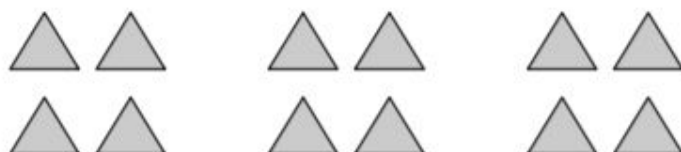
> I know this picture shows equal groups because each group has the same number of triangles. There are 3 equal groups of 4 triangles.

3 groups of 4 = **12**

3 fours = **12**

$4 + 4 + 4 = 12$
$3 \times 4 = 12$

> I can multiply to find the total number of triangles because multiplication is the same as repeated addition! 3 groups of 4 is the same as 3×4. There are 12 total triangles, so $3 \times 4 = 12$.

Questions to ask your children during math homework

- Does this (answer) make sense? Is this (answer) reasonable?
- Why are you sure your answer is right?
- What should you do first? Where do you begin?
- What do you do next?
- Walk me through your problem/work, so I know where to help.
- Share your thoughts. How did you get to that?
- How did you figure that out? How did you solve this?
- Should it be more or less?
- How can we break this number up?
- Can you draw (a picture) to show your thinking?

Exit Ticket – provides daily assessment of conceptual understanding

TICKET TO LEAVE

Name _____   Date _____

1. Four friends were playing a game. Use the information in the table below to order the number of points each player earned from least to greatest. Then name the person who won the game.

Player Name	Points Earned
Amy	2,398 points
Bonnie	2,976 points
Jeff	2,709 points
Rick	2,699 points

2. Use each of the digits 5, 4, 3, 2, 1 exactly once to create two different five-digit numbers.

   a. Write each number on the line and compare the two numbers by using the symbols < or >. Write the correct symbol in the circle.

   _ _ _ _ _ _   ◯   _ _ _ _ _ _

   b. Use words to write a comparison statement for the problem above.

Terms: Math Vocabulary

Math Vocabulary Grades K-6

Quick Grade Level access:

Kindergarten   **4th Grade**
1st Grade   **5th Grade**
2nd Grade   **6th Grade**
3rd Grade

Kindergarten Math Vocabulary	
Modules	
1	• Exactly the same, not exactly the same, and the same, but... (ways to analyze objects to match or sort) • Match (group items that are the same or that have the same given attribute) • Sort (group objects according to a particular attribute) • How many? (with reference to counting quantities or sets)

Protocol: RDW (all grades too!)

R ead

D raw

W rite

A problem solving protocol
https://www.youtube.com/watch?v=40X7vpU8HN4

Helps to reason about math
http://www.comstockps.org/Schools/stem/math_corner/rdw
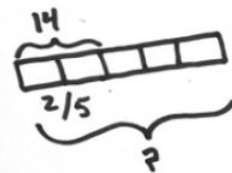
Representation: Tape Diagrams (all grades too!)

A problem solving strategy
[Solving addition and multiplication problems with tape diagrams (grades 3 -5)](#)

Helps to reason about math
[Solving ratio problems with tape diagrams (grade 6)](#)
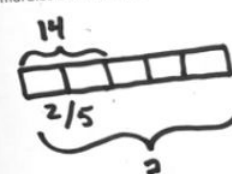
Tool: Number Bonds (through high school)

Number bonds are a mental and visual picture of the relationship between a number and the parts that combine to make it.
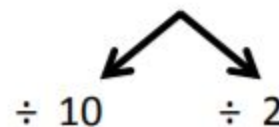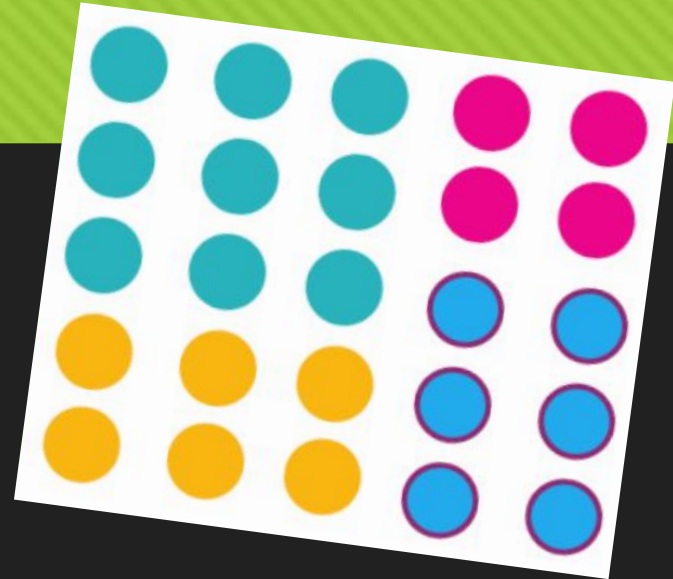-basic concepts
-how numbers work
-whole is made of parts
-used within strategies
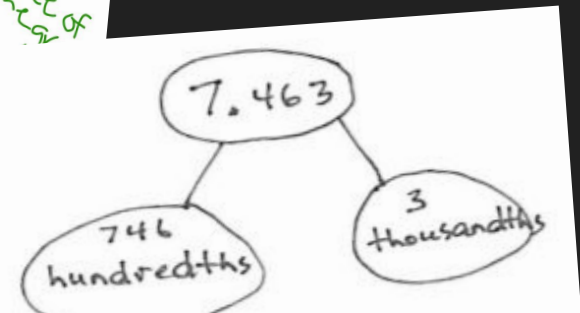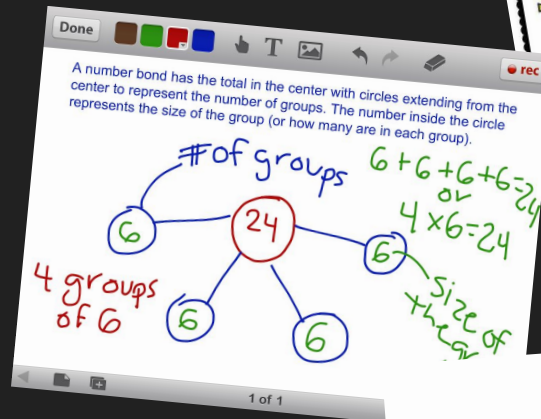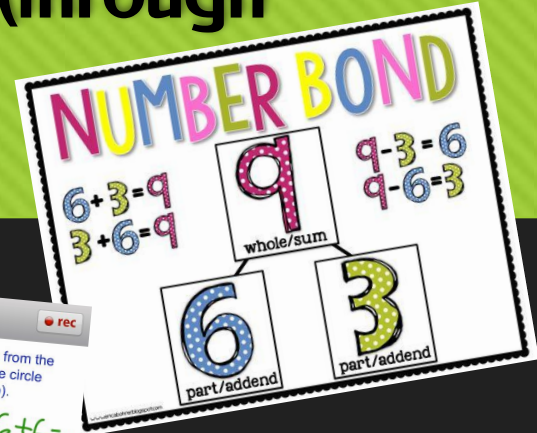
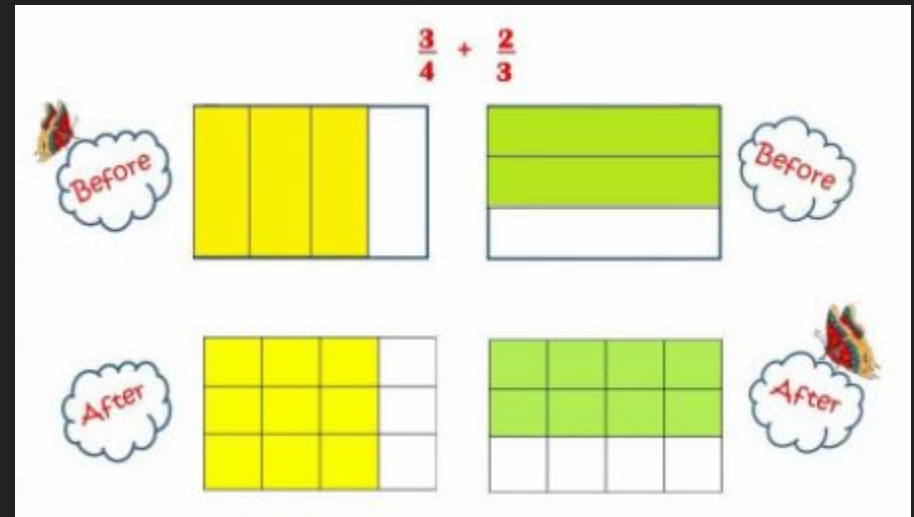# Strategy: Array and Area Model (2nd-6th)

Strategies build upon each other within a grade

https://www.engageny.org/resource/multiplication-with-arrayarea-models-and-the-rekenrek

and as as skills become more complex between grades.

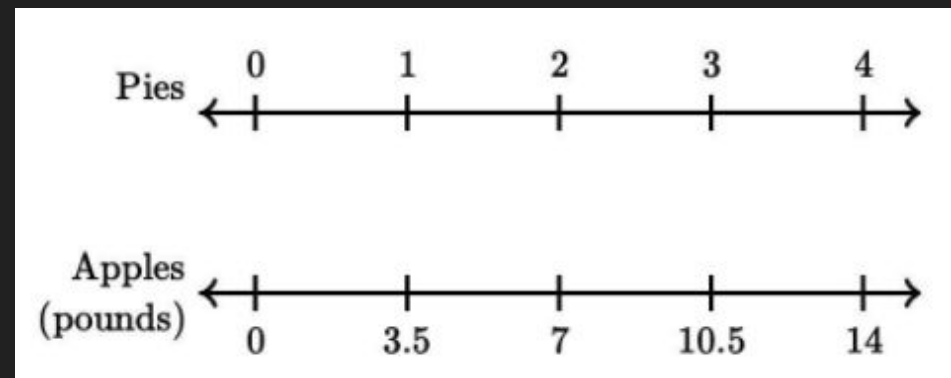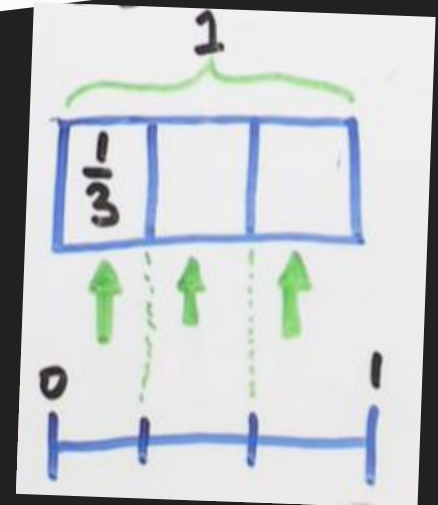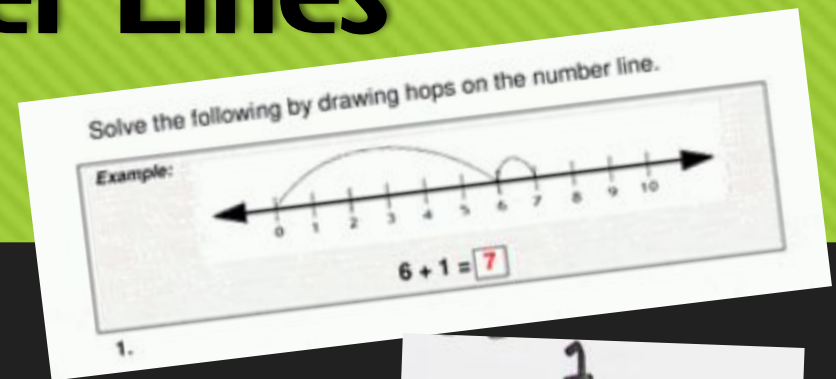https://www.engageny.org/resource/grade-5-math-visual-model-representations-tape-diagram-and-area-model-5nf1-and-5nf4a

Strategy: Number Lines
(all grades)

Strategies build upon each other within a grade and as as skills become more complex between grades.

https://www.pbs.org/video/good-know-fractions-number-line-grade-3/

Solve the following by drawing hops on the number line.

Example:

$6 + 1 = \boxed{7}$

1.

Questions

Resources

Chesterfield Township School District Departments   Instructional Coaches

National PTA Website:
https://www.pta.org/home/family-resources/Parents-Guides-to-Student-Success

Math Digital Learning Platforms 2021-2022

Resources for Students	
Edulastic Affirm https://app.edulastic.com/author/dashboard	District Subscription - Log in through Clever
Moby Max www.mobymax.com	District Subscription - Log in through Clever OR Create your own account through website
Zearn www.zearn.com	District Subscription - Log in through Clever
Prodigy https://www.prodigygame.com/main-en/	Classroom login - obtain from teacher OR free to join

Thank you!

We hope you have gained some valuable insight about our math curriculum.