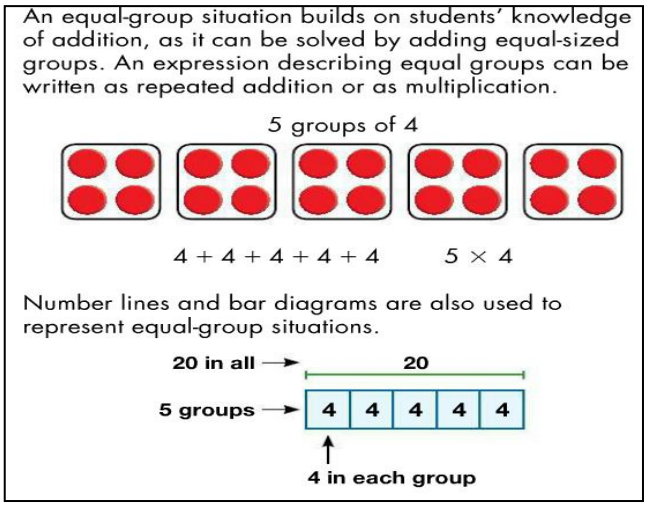
Grade 3 Essential Understandings

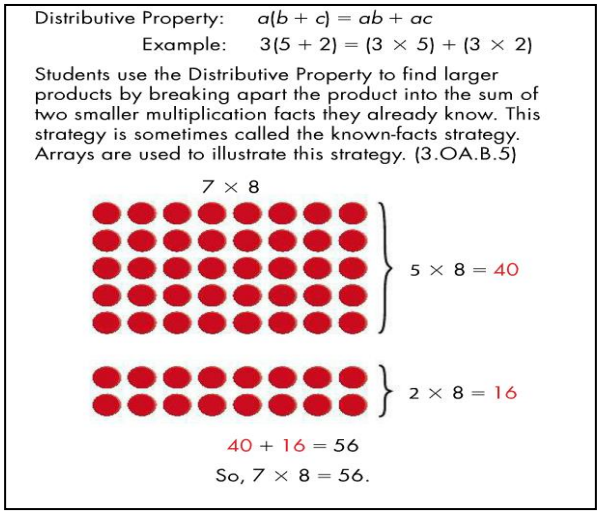
Standards of Mathematical Practice emphasized through the year in grades K-5:

- 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

Grade 3 – Marking Period 1

During the first two topics of the first marking period in third grade, students continued working on fluency of addition and subtraction within 1,000. Next, students explored interpreting the meaning of multiplication and division using patterns which began to build fluency with multiplication facts. The next two topics focused on using known facts and properties of multiplication to learn the multiplication facts with factors of 3, 4, 6, 7, and 8, and using the relationship between multiplication and division to learn division facts. Finally, to finish the marking period students applied strategies to achieve fluency with multiplication and division facts within 100. During this marking period, we emphasized that fluency includes a strong focus on selecting and using the appropriate strategies with a goal of moving students toward knowing from memory all products of two 1-digit numbers by the end of Grade 3.





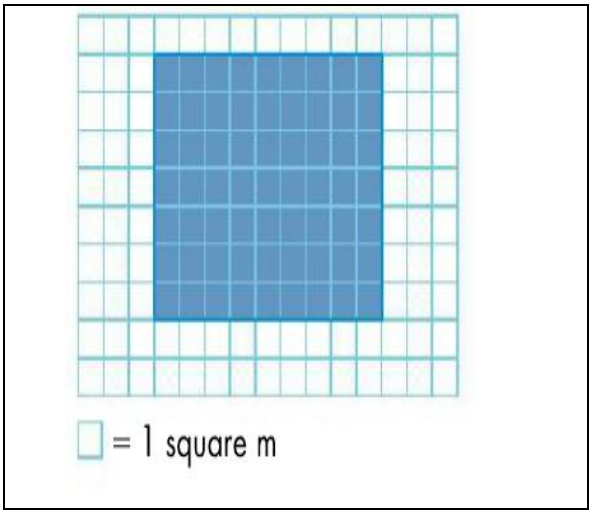
Mathematical Focus	Topic Goals
Multiplication and Division	

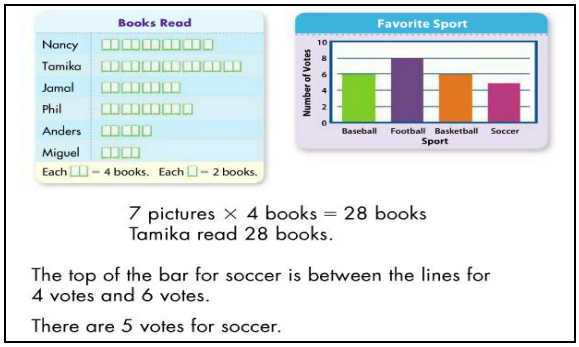
Grade 3 – Marking Period 2

In marking period 2, student will continue to work on fluency of multiplication and division facts. They will also begin to develop a deep understanding of the concept of area beginning with concrete models and then moving to representational and abstract to understand how area is related to multiplication and addition. Students will also focus on reading and make scaled picture graphs and scaled bar graphs that represent a data set with several categories and then wrap up marking period 2 working on fluency with addition and subtraction within 1,000.

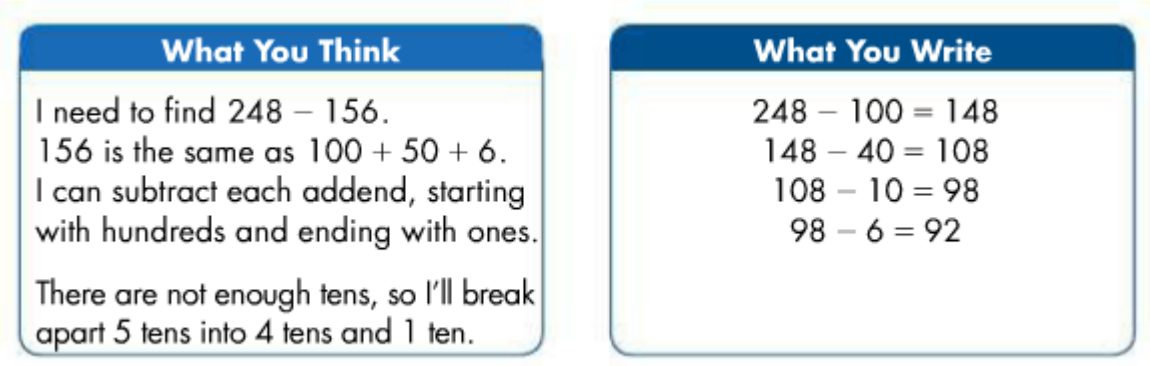
Examples include:

Counting Standard Units as seen below.





Working towards addition and subtraction fluency to 1,000 will include work with partial sums



What You Think

I need to find 248 − 156.
156 is the same as 100 + 50 + 6.
I can subtract each addend, starting with hundreds and ending with ones.

There are not enough tens, so I'll break apart 5 tens into 4 tens and 1 ten.

What You Write

248 − 100 = 148
148 − 40 = 108
108 − 10 = 98
98 − 6 = 92

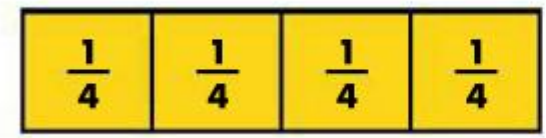
Mathematical Focus	Topic Goals
Whole Numbers	Use mental math to add and subtract. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations and or the relationship between addition and subtraction. Use rounding and compatible numbers to estimate a sum. Solve one-step and multi-step problems by modeling with math.
Multiplication and Division	Fluently multiply and divide within 100. Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. For example observe that 4 times a number is always even and explain why 4 times a number can be decomposed into two equal addends.
Measurement and Data	Connect area to multiplication and addition. Use standard units in addition to standard measurement units to measure the area of a shape. Use graphs and tables such as bar graphs, picture graphs and frequency tables to solve, compare and interpret data.

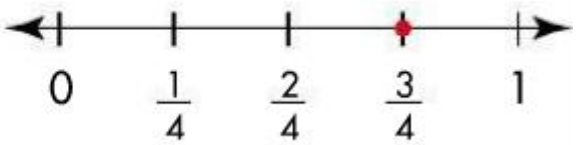
Grade 3 – Marking Period 3

In the beginning of marking period 3 students explored place value patterns when multiplying by a multiple of 10. Two step word problems involving whole numbers was the focus for the latter half of the marking period. Finally, students explored fractions as numbers that can represent a portion of a whole or point on a number line. They used models and number sense to understand fraction equivalence and comparison.

Examples include:

Fraction representations



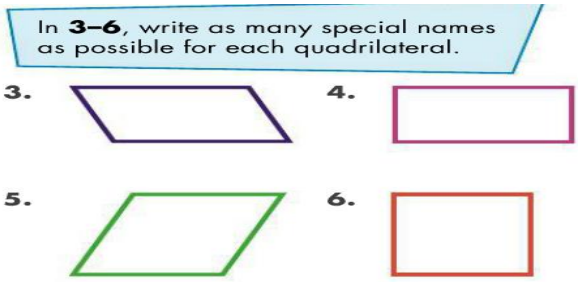


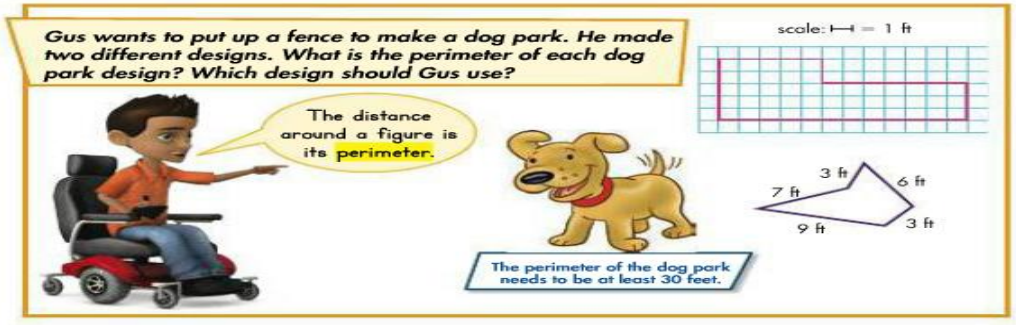
Mathematical Focus	Topic Goals
Whole Numbers	Use varying model and strategies to multiply one-digit numbers by multiples of 10 in the range of 10-90 (e.g., 9X80, 5X60).
Multiplication and Division	Solve two-step word problems using the four operations and represent these problems using a letter standing in for the unknown quantity
Fractions	Understand a fraction 1/b as a quantity formed by 1 part when a whole partitioned into b equal parts. Understand fractions as a number on a number line. Explain equivalence of fraction in special cases, and compare fractions by reasoning about the size.
Measurement and Data	Show and tell time to nearest minute using analog and digital clocks. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction to measure quantities of time. Use standard measures to estimate liquid volume. Use standard units of measure to estimate the masses of solid objects.
Geometry	Identify quadrilaterals and use attribute to describe them. Classify shapes according to their attributes. Analyze and compare quadrilaterals and group them by their attributes.

Grade 3 – Marking Period 4

In the last marking period, students will focus on attributes of two-dimensional shapes, especially quadrilaterals. Students learn that shapes in different categories may share attributes that place them in a larger category. Students will also relate fractions to partitioned shapes. The next topic will focus on recognizing perimeter as an attribute of polygons, finding perimeter using addition and multiplication, and finding an unknown side length. Students will distinguish the attribute of perimeter from the attribute of area by analyzing rectangles with the same perimeter and different areas or with the same area and different perimeters. Students will finish the year making connections from 3rd to 4th grade math by looking at place value relationships, multiplying by multiples of 10, and using models to multiply two digit numbers. These are just a few of the topics they will explore as they prepare for 4th grade.

Examples include:





Mathematical Focus	Topic Goals
Measurement and Data	Solve real world and mathematical problems involving perimeter of polygons including finding the perimeters given the side lengths and finding an unknown side length.
Geometry	Identify quadrilaterals and use attributes to describe them. Classify shapes according to their attributes Analyze and compare quadrilaterals and group them by their attributes