

2016-2017 Third Grade Overview: Math

Month(s)	Unit	Key Concepts "Students will know..."	Key Skills "Students will be able to..."
September October	Chapter 1: Addition and Subtraction within 1,000	<ul style="list-style-type: none"> • That you can round or estimate whole numbers using mental math strategies, such as compatible numbers, friendly numbers, and place value • What friendly numbers are • What compatible numbers are • How to use the associative and commutative properties in order to add more than two numbers together • The break apart strategy for adding and subtracting 3-digit numbers 	<ul style="list-style-type: none"> • Use the commutative property to explain how to add or subtract • Use a number line or place value to add and subtract • Use compatible numbers to round and estimate sums and differences • Use the associative property to group addends to make them easier to add • To use the commutative property to change the order of addends • Break apart the addends into hundreds, tens, and ones and then add each place value • Add and subtract numbers in each place and regroup • Find numbers that are close to the real numbers and are easier to subtract • Round the numbers to the same place and subtract the rounded numbers to get an estimate • Use a number line to count up by 10s, 1s • Use friendly numbers • Draw a bar model to see if you should add or subtract in one- or two-step word problems
October	Chapter 3: Understand Multiplication	<ul style="list-style-type: none"> • Ways to multiply using arrays, equal groups, and a number line • The commutative property, the zero property, and the identity properties of multiplication 	<ul style="list-style-type: none"> • Use arrays, equal groups, and number lines to multiply and find factors or the product • Skip count groups using counters or drawings • Draw a diagram to solve one- and two-step multiplication and addition word problems • Use the product to find the factors in a multiplication sentence using equal groups to model
October November	Chapter 4: Multiplication Facts and Strategies	<ul style="list-style-type: none"> • Various strategies for multiplying the numbers 2, 3, 4, 5, 6, 7, 8, 9, and 10 • What the distributive property is and how to use it to find the solution to multiplication problems • What the commutative property is and how to use it to find the solution to multiplication problems • What the associative property is and how to use it to regroup to solve multiplication problems 	<ul style="list-style-type: none"> • Utilize multiple strategies to solve multiplication problems with numbers 2-10 as factors • Use a bar model • Draw a quick picture • Use doubles • Use an array • Use a number line to skip count • Use a multiplication table • Use the break apart strategy • Use properties to explain patterns on a multiplication table
November	Chapter 5: Use Multiplication Facts	<ul style="list-style-type: none"> • Number patterns based on the multiplication table • Arrays and number tables help to find a factor or product • Base-ten blocks, number lines, equal groups, and place value can help to multiply with multiples of 10 	<ul style="list-style-type: none"> • Describe patterns • Find unknown factors • Use the distributive property • Use multiplication strategies with multiples of 10 • Multiply multiples of 10 by 1-digit numbers

December	Chapter 6: Understand Division	<ul style="list-style-type: none"> Strategies for solving division problems such as: using counters, equal groups, bar models, repeated subtraction, making arrays, and related multiplication facts Division rules for 1 and 0 	<ul style="list-style-type: none"> Problem solve division problems Count counters in groups to find the total Find the number of equal groups in a division problem Model division using a bar model Find the quotient or divisor using repeated subtraction Model division with arrays Relate multiplication and division as inverse operations Tell/describe division rules for 1 and 0
December January	Chapter 7: Division Facts and Strategies	<ul style="list-style-type: none"> That using multiple strategies for dividing can help to get the answer and check your work in division problem solving Terms: dividend, divisor, quotient 	<ul style="list-style-type: none"> Divide by 2, 3, 4, 5, 6, 7, 8, 9, and 10 using the strategies or make a model, repeated subtraction, making an array, make equal groups, and using related multiplication facts. Use order of operations and explain it's importance
January	Chapter 8: Understanding Fractions	<ul style="list-style-type: none"> What a numerator and denominator is. That a fraction is a number of equal parts. Fractions can be represented on a number line. How to compare fractions. Express whole numbers as fractions. 	<ul style="list-style-type: none"> Divide a whole into equal parts. Recognize that the denominator indicates the number of equal parts in a whole. Determine the number of pieces in the whole. Interprets what the denominator would be in a diagram.
February	Chapter 9: Comparing Fractions	<ul style="list-style-type: none"> Two fractions are equivalent if they are the same size or at the same point on a number line. How to recognize and generate simple equivalent fractions. How to compare two fractions. 	<ul style="list-style-type: none"> Divide shapes into equal parts Shade equivalent amounts Write pairs of equivalent fractions
February	Chapter 2: Represent and Interpret Data	<ul style="list-style-type: none"> What data do you need to collect and how do you go about collecting it? Picture graphs offer a way to connect the actual objects being counted to record the data. Bar graphs are faster to construct than picture graphs and are useful when comparing data. Line plots provide a quick way to get a sense of the "shape" of the data. 	<ul style="list-style-type: none"> Correctly identify what a bar graph shows. Write a reasonable summary for the data. Draw bars of appropriate lengths, using spacing between the bars.
March	Chapter 10: Time, Length, Liquid Volume, and Mass	<ul style="list-style-type: none"> Measuring is obtained by subdividing a length into a length and then repeatedly translating Numbers on a ruler enumerate a continuous length rather than a discrete number Units can be partitioned Measures can be composed and decomposed Any point can serve as an origin on a scale The choice of units in relation to the object being measured determines the accuracy of the measure. 	<ul style="list-style-type: none"> Draw length correctly Explain how to measure length using a ruler Collect measurement data Draw line plots correctly
April	Chapter 11: Perimeter and Area	<ul style="list-style-type: none"> Perimeter can be found by counting the units on each side of a shape Perimeter can be found by using inch and centimeter rulers How to write an equation to find the unknown length of a side of a polygon when you know it's perimeter Perimeter and area are shape attributes Addition and multiplication models can be used to find area Finding a pattern can help to find the area of a shape The distributive property can be used to find the area of combined rectangles Rectangles with the same perimeter may not 	<ul style="list-style-type: none"> Find the perimeter of a polygon Measure the area of a polygon Estimate and measure the area of plane shapes Determine that the area and perimeter of shapes are attributes Relate area to addition and multiplication Use the strategy <i>find a pattern</i> to solve area problems Apply the distributive property to area models to find the area of combined rectangles Compare areas of rectangles that have the same perimeter Compare perimeters of rectangles that have the same area

		<p>have the same area</p> <ul style="list-style-type: none"> • Rectangles with the same area may not have the same perimeter 	
May	Chapter 12: Two-Dimensional Shapes	<ul style="list-style-type: none"> • Angles and sides of polygons, quadrilaterals, and triangles can be described • Properties of shapes can help classify them • You can divide shapes into equal parts and use unit fractions to describe the parts 	<ul style="list-style-type: none"> • Describe plane shapes • Describe angles in plane shapes • Identify polygons • Describe sides of polygons • Classify quadrilaterals • Draw quadrilaterals • Describe triangles • Classify plane shapes • Relate shapes, fractions, and area
June	Creating Our Own Content: Math Games	<ul style="list-style-type: none"> • How to use math skills and concepts to create math games based on what they have learned this year. 	<ul style="list-style-type: none"> • Apply math skills to the creation of puzzles and games. • Work together in groups to develop a game concept, goals, directions and rules for the games.