



correlated to the

## **Common Core State Standards Grades K – 5**

**2014**

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- each grade level includes 25 children's literature titles;
- each title is paired with a lesson card designed with explicit connections to the Common Core;
- each lesson card includes an overview text that introduces the book, suggestions for introducing the book, and specific teaching lessons.

Common Core State Standards for Math	Math Reads
<b>Grade K</b>	
<b>Counting and Cardinality</b>	
<b>Know number names and the count sequence.</b>	
CCSS.MATH.CONTENT.K.CC.A.1 Count to 100 by ones and by tens.	K-3 <i>Bears at the Beach</i> K-4 <i>Can You See What I See?</i> K-5 <i>Counting Cockatoos</i> K-6 <i>Cubes, Cones, Cylinders, &amp; Spheres</i> K-7 <i>Deep in the Swamp</i> K-9 <i>Five Little Ducks</i> K-10 <i>Handa's Hens</i> K-11 <i>Happy Birthday, Hamster</i> K-12 <i>I'm the Biggest Thing in the Ocean</i> K-16 <i>Perfect Square</i> K-17 <i>...98, 99, 100! Ready or Not, Here I Come!</i> K-19 <i>Snowballs</i> K-20 <i>Teeth, Tails, &amp; Tentacles</i> K-21 <i>Ten Little Fish</i> K-25 <i>Turtle Splash!</i>
CCSS.MATH.CONTENT.K.CC.A.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	K-14 <i>One Monkey Too Many</i>
CCSS.MATH.CONTENT.K.CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	K-8 <i>The First Day of Winter</i> K-14 <i>One Monkey Too Many</i> K-22 <i>Ten, Nine, Eight</i>
<b>Count to tell the number of objects.</b>	
CCSS.MATH.CONTENT.K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. c. Understand that each successive number name refers to a quantity that is one larger.	a. K-2 <i>Bear in A Square</i> K-3 <i>Bears at the Beach</i> K-4 <i>Can You See What I See?</i> K-5 <i>Counting Cockatoos</i> K-6 <i>Cubes, Cones, Cylinders, &amp; Spheres</i> K-7 <i>Deep in the Swamp</i> K-8 <i>The First Day of Winter</i> K-9 <i>Five Little Ducks</i> K-10 <i>Handa's Hens</i> K-11 <i>Happy Birthday, Hamster</i> K-12 <i>I'm the Biggest Thing in the Ocean</i> K-14 <i>One Monkey Too Many</i> K-16 <i>Perfect Square</i> K-17 <i>...98, 99, 100! Ready or Not, Here I Come!</i> K-18 <i>Rooster's Off to See the World</i> K-19 <i>Snowballs</i> K-20 <i>Teeth, Tails, &amp; Tentacles</i> K-21 <i>Ten Little Fish</i> K-22 <i>Ten, Nine, Eight</i> K-23 <i>Ten on the Sled</i> K-24 <i>Ten Sly Piranhas</i> K-25 <i>Turtle Splash!</i> b. K-3 <i>Bears at the Beach</i> K-4 <i>Can You See What I See?</i> K-5 <i>Counting Cockatoos</i> K-6 <i>Cubes, Cones, Cylinders, &amp; Spheres</i> K-7 <i>Deep in the Swamp</i> K-9 <i>Five Little Ducks</i> K-10 <i>Handa's Hens</i>

Common Core State Standards for Math	Math Reads
Grade K	
	K-11 <i>Happy Birthday, Hamster</i> K-12 <i>I'm the Biggest Thing in the Ocean</i> K-16 <i>Perfect Square</i> K-17 <i>...98, 99, 100! Ready or Not, Here I Come!</i> K-19 <i>Snowballs</i> K-20 <i>Teeth, Tails, &amp; Tentacles</i> K-21 <i>Ten Little Fish</i> K-25 <i>Turtle Splash!</i> c. K-14 <i>One Monkey Too Many</i>
CCSS.MATH.CONTENT.K.CC.B.5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	K-8 <i>The First Day of Winter</i> K-9 <i>Five Little Ducks</i> K-18 <i>Rooster's Off to See the World</i>
<b>Compare numbers.</b>	
CCSS.MATH.CONTENT.K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.	K-3 <i>Bears at the Beach</i> K-11 <i>Happy Birthday, Hamster</i>
CCSS.MATH.CONTENT.K.CC.C.7 Compare two numbers between 1 and 10 presented as written numerals.	K-18 <i>Rooster's Off to See the World</i>
<b>Operations and Algebraic Thinking</b>	
<b>Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.</b>	
CCSS.MATH.CONTENT.K.OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	K-7 <i>Deep in the Swamp</i> K-9 <i>Five Little Ducks</i> K-13 <i>Math Fables</i> K-21 <i>Ten Little Fish</i> K-24 <i>Ten Sly Piranhas</i>
CCSS.MATH.CONTENT.K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	K-7 <i>Deep in the Swamp</i> K-8 <i>The First Day of Winter</i> K-11 <i>Happy Birthday, Hamster</i> K-13 <i>Math Fables</i>
CCSS.MATH.CONTENT.K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$ ).	K-13 <i>Math Fables</i> K-23 <i>Ten on the Sled</i>
CCSS.MATH.CONTENT.K.OA.A.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.	K-8 <i>The First Day of Winter</i> K-21 <i>Ten Little Fish</i> K-23 <i>Ten on the Sled</i> K-24 <i>Ten Sly Piranhas</i>
CCSS.MATH.CONTENT.K.OA.A.5 Fluently add and subtract within 5.	K-3 <i>Bears at the Beach</i> K-18 <i>Rooster's Off to See the World</i> K-25 <i>Turtle Splash!</i>

Common Core State Standards for Math	<i>Math Reads</i>
<b>Grade K</b>	
<b>Number &amp; Operations in Base Ten</b>	
<b>Work with numbers 11–19 to gain foundations for place value.</b>	
CCSS.MATH.CONTENT.K.NBT.A.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$ ); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	K-3 <i>Bears at the Beach</i> K-5 <i>Counting Cockatoos</i> K-17 <i>...98, 99, 100! Ready or Not, Here I Come!</i> K-20 <i>Teeth, Tails, &amp; Tentacles</i>
<b>Measurement and Data</b>	
<b>Describe and compare measurable attributes.</b>	
CCSS.MATH.CONTENT.K.MD.A.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	K-1 <i>Balancing Act</i> K-12 <i>I'm the Biggest Thing in the Ocean</i>
CCSS.MATH.CONTENT.K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.	K-12 <i>I'm the Biggest Thing in the Ocean</i>
<b>Classify objects and count the number of objects in each category.</b>	
CCSS.MATH.CONTENT.K.MD.B.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	K-11 <i>Happy Birthday, Hamster</i> K-19 <i>Snowballs</i>
<b>Geometry</b>	
<b>Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).</b>	
CCSS.MATH.CONTENT.K.G.A.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.	K-2 <i>Bear in A Square</i> K-6 <i>Cubes, Cones, Cylinders, &amp; Spheres</i> K-15 <i>Over, Under &amp; Through</i> K-16 <i>Perfect Square</i>
CCSS.MATH.CONTENT.K.G.A.2 Correctly name shapes regardless of their orientations or overall size.	K-2 <i>Bear in A Square</i> K-6 <i>Cubes, Cones, Cylinders, &amp; Spheres</i> K-15 <i>Over, Under &amp; Through</i> K-16 <i>Perfect Square</i>
CCSS.MATH.CONTENT.K.G.A.3 Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).	K-2 <i>Bear in A Square</i> K-6 <i>Cubes, Cones, Cylinders, &amp; Spheres</i> K-15 <i>Over, Under &amp; Through</i> K-16 <i>Perfect Square</i>
<b>Analyze, compare, create, and compose shapes.</b>	
CCSS.MATH.CONTENT.K.G.B.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).	K-6 <i>Cubes, Cones, Cylinders, &amp; Sphere</i>

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<b>Grade K</b>	
CCSS.MATH.CONTENT.K.G.B.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	K-2 <i>Bear in A Square</i> K-16 <i>Perfect Square</i>
CCSS.MATH.CONTENT.K.G.B.6 Compose simple shapes to form larger shapes. For example, “Can you join these two triangles with full sides touching to make a rectangle?”	K-2 <i>Bear in A Square</i> K-16 <i>Perfect Square</i>

Common Core State Standards for Math	Math Reads
<b>Grade 1</b>	
<b>Operations &amp; Algebraic Thinking</b>	
<b>Represent and solve problems involving addition and subtraction.</b>	
CCSS.MATH.CONTENT.1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	1-1 <i>Apple Countdown</i> 1-3 <i>Bean Thirteen</i> 1-10 <i>Five Little Monkeys go Shopping</i> 1-12 <i>Handa's Surprise</i> 1-13 <i>Hannah's Collections</i> 1-14 <i>Little Pea</i> 1-16 <i>Over in the Ocean</i> 1-23 <i>A Squash and a Squeeze</i> 1-25 <i>Two of Everything</i>
CCSS.MATH.CONTENT.1.OA.A.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	1-1 <i>Apple Countdown</i> 1-2 <i>The Baseball Counting Book</i> 1-7 <i>The Coin Counting Book</i> 1-8 <i>Count by Tens</i> 1-18 <i>Quack and Count</i> 1-19 <i>Ready, Set, 100th Day!</i> 1-24 <i>Teddy Bear Counting</i> 1-25 <i>Two of Everything</i>
<b>Understand and apply properties of operations and the relationship between addition and subtraction.</b>	
CCSS.MATH.CONTENT.1.OA.B.3 Apply properties of operations as strategies to add and subtract. <i>Examples: If <math>8 + 3 = 11</math> is known, then <math>3 + 8 = 11</math> is also known. (Commutative property of addition.) To add <math>2 + 6 + 4</math>, the second two numbers can be added to make a ten, so <math>2 + 6 + 4 = 2 + 10 = 12</math>. (Associative property of addition.)</i>	1-3 <i>Bean Thirteen</i> 1-10 <i>Five Little Monkeys go Shopping</i> 1-18 <i>Quack and Count</i>
CCSS.MATH.CONTENT.1.OA.B.4 Understand subtraction as an unknown-addend problem. <i>For example, subtract <math>10 - 8</math> by finding the number that makes 10 when added to 8. Add and subtract within 20.</i>	1-3 <i>Bean Thirteen</i> 1-10 <i>Five Little Monkeys go Shopping</i>
<b>Add and subtract within 20.</b>	
CCSS.MATH.CONTENT.1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).	1-9 <i>Five Creatures</i> 1-11 <i>Five Little Monkeys Play Hide and Seek</i> 1-14 <i>Little Pea</i>
CCSS.MATH.CONTENT.1.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$ ); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$ ); using the relationship between addition and subtraction	1-1 <i>Apple Countdown</i> 1-10 <i>Five Little Monkeys go Shopping</i> 1-12 <i>Handa's Surprise</i> 1-16 <i>Over in the Ocean</i> 1-24 <i>Teddy Bear Counting</i>

Common Core State Standards for Math	Math Reads
<b>Grade 1</b>	
(e.g., knowing that $8 + 4 = 12$ , one knows $12 - 8 = 4$ ); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$ ).	
<b>Work with addition and subtraction equations.</b>	
CCSS.MATH.CONTENT.1.OA.D.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? $6 = 6$ , $7 = 8 - 1$ , $5 + 2 = 2 + 5$ , $4 + 1 = 5 + 2$ .	<i>1-18 Quack and Count</i>
CCSS.MATH.CONTENT.1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. <i>For example, determine the unknown number that makes the equation true in each of the equations <math>8 + ? = 11</math>, <math>5 = \_ - 3</math>, <math>6 + 6 = \_</math>.</i>	<i>1-1 Apple Countdown</i> <i>1-17 Pattern Fish</i> <i>1-8 Count by Tens</i> <i>1-18 Quack and Count</i> <i>1-19 Ready, Set, 100th Day!</i> <i>1-24 Teddy Bear Counting</i> <i>1-25 Two of Everything</i>
<b>Number &amp; Operations in Base Ten</b>	
<b>Extend the counting sequence.</b>	
CCSS.MATH.CONTENT.1.NBT.A.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	<i>1-11 Five Little Monkeys Play Hide and Seek</i>
<b>Understand place value.</b>	
CCSS.MATH.CONTENT.1.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: A. 10 can be thought of as a bundle of ten ones — called a “ten.” B. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. C. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).	<i>1-6 Christopher Counting</i> <i>1-7 The Coin Counting Book</i> <i>1-8 Count by Tens</i> <i>1-9 Five Creatures</i> <i>1-11 Five Little Monkeys Play Hide and Seek</i> <i>1-13 Hannah's Collections</i> <i>1-14 Little Pea</i> <i>1-19 Ready, Set, 100th Day!</i>
CCSS.MATH.CONTENT.1.NBT.B.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$ , $=$ , and $<$ .	Provides opportunities: <i>1-8 Count by Tens</i>
<b>Use place value understanding and properties of operations to add and subtract.</b>	
CCSS.MATH.CONTENT.1.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the	<i>1-9 Five Creatures</i> <i>1-25 Two of Everything</i>



Common Core State Standards for Math	Math Reads
<b>Grade 1</b>	
reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.	
CCSS.MATH.CONTENT.1.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	<i>1-11 Five Little Monkeys Play Hide and Seek</i>
CCSS.MATH.CONTENT.1.NBT.C.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	<i>1-9 Five Creatures</i> <i>1-25 Two of Everything</i>
<b>Measurement and Data</b>	
<b>Measure lengths indirectly and by iterating length units.</b>	
CCSS.MATH.CONTENT.1.MD.A.1 Order three objects by length; compare the length of two objects indirectly by using a third object.	<i>1-4 Big and Small, Room for All</i> <i>1-5 The Biggest Fish</i>
CCSS.MATH.CONTENT.1.MD.A.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. <i>Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.</i>	<i>1-4 Big and Small, Room for All</i> <i>1-5 The Biggest Fish</i>
<b>Time measurement</b>	
CCSS.MATH.CONTENT.1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.	<i>1-20 A Second is a Hiccup</i>
<b>Represent and interpret data.</b>	
CCSS.MATH.CONTENT.1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	<i>1-2 The Baseball Counting Book</i> <i>1-9 Five Creatures</i> <i>1-15 The Name Jar</i> <i>1-16 Over in the Ocean</i> <i>1-20 A Second is a Hiccup</i>
<b>Geometry</b>	
<b>Reason with shapes and their attributes.</b>	
CCSS.MATH.CONTENT.1.G.A.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size) ; build and draw shapes to possess defining attributes.	<i>1-17 Pattern Fish</i> <i>1-21 The Shape of Things</i> <i>1-22 Shapes that Roll</i> <i>1-23 A Squash and a Squeeze</i>
CCSS.MATH.CONTENT.1.G.A.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-	<i>1-22 Shapes that Roll</i> <i>1-23 A Squash and a Squeeze</i>

Common Core State Standards for Math	Math Reads
<b>Grade 1</b>	
circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.	
CCSS.MATH.CONTENT.1.G.A.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words <i>halves</i> , <i>fourths</i> , and <i>quarters</i> , and use the phrases <i>half of</i> , <i>fourth of</i> , and <i>quarter of</i> . Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	<i>1-21 The Shape of Things</i>

Common Core State Standards for Math	Math Reads
<b>Grade 2</b>	
<b>Operations &amp; Algebraic Thinking</b>	
<b>Represent and solve problems involving addition and subtraction.</b>	
CCSS.MATH.CONTENT.2.OA.A.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	<i>2-5 Centipede's 100 Shoes</i> <i>2-15 Math for All Seasons</i> <i>2-19 One is a Snail, Ten is a Crab</i> <i>2-25 Tyrannosaurus Math</i>
<b>Add and subtract within 20.</b>	
CCSS.MATH.CONTENT.2.OA.B.2 Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	<i>2-6 Even Steven and Odd Todd</i> <i>2-24 Ten Friends</i>
<b>Work with equal groups of objects to gain foundations for multiplication.</b>	
CCSS.MATH.CONTENT.2.OA.C.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.	<i>2-3 Arithme Tickle</i> <i>2-6 Even Steven and Odd Todd</i> <i>2-18 My Little Sister Ate One Hare</i>
CCSS.MATH.CONTENT.2.OA.C.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.	<i>2-8 The Five Dog Night</i>
<b>Number &amp; Operations in Base Ten</b>	
CCSS.MATH.CONTENT.2.NBT.A.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: A. 100 can be thought of as a bundle of ten tens — called a “hundred.” B. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones)	<i>2-17 Missing Math, A Number Mystery</i>
CCSS.MATH.CONTENT.2.NBT.A.2 Count within 1000; skip count by 2s, 5s, 10s, and 100s.	<i>2-2 100 Ways to Celebrate 100 Days</i>
CCSS.MATH.CONTENT.1.NBT.A.3 Read and write numbers to 1000 using base-ten notation, number names, and expanded form.	<i>2-1 1,001 Things to Spot in the Sea</i> <i>2-13 The King's Commissioner's</i> <i>2-17 Missing Math, A Number Mystery</i>
CCSS.MATH.CONTENT.2.NBT.A.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.	<i>2-13 The King's Commissioner's</i>
<b>Use place value understanding and properties of operations to add and subtract.</b>	
CCSS.MATH.CONTENT.2.NBT.B.5 Fluently add and subtract within 20. By end of Grade 2, know from	<i>2-5 Centipede's 100 Shoes</i>

Common Core State Standards for Math	Math Reads
<b>Grade 2</b>	
memory sums of one-digit numbers.	<i>2-19 One is a Snail, Ten is a Crab</i>
CCSS.MATH.CONTENT.2.NBT.B.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.	<i>2-2 100 Ways to Celebrate 100 Days</i> <i>2-18 My Little Sister Ate One Hare</i>
CCSS.MATH.CONTENT.2.NBT.B.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.	<i>2-2 100 Ways to Celebrate 100 Days</i> <i>2-3 Arithme Tickle</i> <i>2-7 A Fair Bear Share</i> <i>2-15 Math for All Seasons</i> <i>2-17 Missing Math, A Number Mystery</i> <i>2-18 My Little Sister Ate One Hare</i> <i>2-19 One is a Snail, Ten is a Crab</i> <i>2-23 Start Saving Henry!</i> <i>2-24 Ten Friends</i>
CCSS.MATH.CONTENT.2.NBT.B.8 Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.	<i>2-6 Even Steven and Odd Todd</i>
CCSS.MATH.CONTENT.2.NBT.B.9 Explain why addition and subtraction strategies work, using place value and the properties of operations	<i>2-2 100 Ways to Celebrate 100 Days</i> <i>2-18 My Little Sister Ate One Hare</i>
<b>Measurement and Data</b>	
<b>Measure and estimate lengths in standard units.</b>	
CCSS.MATH.CONTENT.2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	<i>2-11 How Big Is a Foot?</i> <i>2-16 Measuring Penny</i>
CCSS.MATH.CONTENT.2.MD.A.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.	<i>2-11 How Big Is a Foot?</i> <i>2-16 Measuring Penny</i>
CCSS.MATH.CONTENT.2.MD.A.3 Estimate lengths using units of inches, feet, centimeters, and meters.	<i>2-2 100 Ways to Celebrate 100 Days</i>
CCSS.MATH.CONTENT.2.MD.A.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	<i>2-16 Measuring Penny</i> <i>2-25 Tyrannosaurus Math</i>
<b>Relate addition and subtraction to length.</b>	
CCSS.MATH.CONTENT.2.MD.B.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.	<i>2-3 Arithme Tickle</i> <i>2-7 A Fair Bear Share</i> <i>2-15 Math for All Seasons</i> <i>2-17 Missing Math, A Number Mystery</i> <i>2-19 One is a Snail, Ten is a Crab</i> <i>2-23 Start Saving Henry!</i> <i>2-24 Ten Friends</i>
CCSS.MATH.CONTENT.2.MD.B.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding	<i>2-25 Tyrannosaurus Math</i>

Common Core State Standards for Math	Math Reads
<b>Grade 2</b>	
to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.	
<b>Word with time and money.</b>	
CCSS.MATH.CONTENT.2.MD.C.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	2-14 <i>Mialing May</i> 2-20 <i>One World, One Day</i>
CCSS.MATH.CONTENT.2.MD.C.8 Solve word problems involving dollar bills, quarters, dimes, nickels and pennies, using \$ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?	2-12 <i>How the Second Grade Got \$8,205.50 to Visit the Statue of Liberty</i> 2-23 <i>Start Saving Henry!</i>
<b>Representing and interpreting data</b>	
CCSS.MATH.CONTENT.2.MD.D.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.	2-10 <i>The Great Graph Contest</i> 2-20 <i>One World, One Day</i>
CCSS.MATH.CONTENT.2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems <sup>1</sup> using information presented in a bar graph.	2-10 <i>The Great Graph Contest</i> 2-20 <i>One World, One Day</i>
<b>Geometry</b>	
<b>Reason with shapes and their attributes.</b>	
CCSS.MATH.CONTENT.2.G.A.1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. <sup>1</sup> Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	2-4 <i>Bees, Snails, &amp; Peacock Tails</i> 2-21 <i>How Big Is a Foot?</i>
CCSS.MATH.CONTENT.2.G.A.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	2-8 <i>The Five Dog Night</i>
CCSS.MATH.CONTENT.2.G.A.3 Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.	2-9 <i>Full House</i> 2-14 <i>Mialing May</i>

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<b>Grade 3</b>	
<b>Operations &amp; Algebraic Thinking</b>	
<b>Represent and solve problems involving multiplication and division.</b>	
CCSS.MATH.CONTENT.3.OA.A.1 Interpret products of whole numbers, e.g., interpret $5 \times 7$ as the total number of objects in 5 groups of 7 objects each. <i>For example, describe a context in which a total number of objects can be expressed as <math>5 \times 7</math>.</i>	3-1 17 Kings and 42 Elephants 3-3 Amanda Bean's Amazing Dream 3-4 The Best of Times 3-5 Cheetah Math 3-14 Lucky Beans 3-20 A Remainder of One
CCSS.MATH.CONTENT.3.OA.A.2 Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. <i>For example, describe a context in which a number of shares or a number of groups can be expressed as <math>56 \div 8</math>.</i>	3-1 17 Kings and 42 Elephants 3-3 Amanda Bean's Amazing Dream 3-4 The Best of Times 3-5 Cheetah Math 3-14 Lucky Beans 3-20 A Remainder of One
CCSS.MATH.CONTENT.3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	3-20 A Remainder of One
CCSS.MATH.CONTENT.3.OA.A.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. <i>For example, determine the unknown number that makes the equation true in each of the equations <math>8 \times ? = 48</math>, <math>5 = \_ \div 3</math>, <math>6 \times 6 = ?</math></i>	3-11 How Much, How Many ... Is 1000?
<b>Understand properties of multiplication and the relationship between multiplication and division</b>	
CCSS.MATH.CONTENT.3.OA.B.5 Apply properties of operations as strategies to multiply and divide. <i>Examples: If <math>6 \times 4 = 24</math> is known, then <math>4 \times 6 = 24</math> is also known. (Commutative property of multiplication.) <math>3 \times 5 \times 2</math> can be found by <math>3 \times 5 = 15</math>, then <math>15 \times 2 = 30</math>, or by <math>5 \times 2 = 10</math>, then <math>3 \times 10 = 30</math>. (Associative property of multiplication.) Knowing that <math>8 \times 5 = 40</math> and <math>8 \times 2 = 16</math>, one can find <math>8 \times 7</math> as <math>8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56</math>. (Distributive property.)</i>	3-3 Amanda Bean's Amazing Dream 3-4 The Best of Times 3-11 How Much, How Many ... Is 1000? 3-15 Making Cents 3-16 Math Potatoes 3-24 1001 Bugs to Spot
CCSS.MATH.CONTENT.3.OA.B.6 Understand division as an unknown-factor problem. <i>For example, find <math>32 \div 8</math> by finding the number that makes 32 when multiplied by 8.</i>	3-1 17 Kings and 42 Elephants
<b>Multiply and divide within 100.</b>	
CCSS.MATH.CONTENT.3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$ , one knows $40 \div 5 = 8$ ) or properties of operations. By the end of	3-1 17 Kings and 42 Elephants 3-18 Minnie's Diner 3-20 A Remainder of One

Common Core State Standards for Math	Math Reads
<b>Grade 3</b>	
Grade 3, know from memory all products of two one-digit numbers.	
<i>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</i>	
CCSS.MATH.CONTENT.3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	3-11 <i>How Much, How Many ... Is 1000?</i> 3-15 <i>Making Cents</i> 3-16 <i>Math Potatoes</i> 3-24 <i>1001 Bugs to Spot</i>
CCSS.MATH.CONTENT.3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. <i>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.</i>	3-2 <i>The 512 Ants on Sullivan Street</i> 3-16 <i>Math Potatoes</i> 3-18 <i>Minnie's Diner</i>
<b>Number &amp; Operations in Base Ten</b>	
<b>Use place value understanding and properties of operations to perform multi-digit arithmetic.</b>	
CCSS.MATH.CONTENT.3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100.	
CCSS.MATH.CONTENT.3.NBT.A.2 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.	3-5 <i>Cheetah Math</i> 3-18 <i>Minnie's Diner</i> 3-11 <i>How Much, How Many ... Is 1000?</i>
CCSS.MATH.CONTENT.3.NBT.A.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., $9 \times 80$ , $5 \times 60$ ) using strategies based on place value and properties of operations.	3-2 <i>The 512 Ants on Sullivan Street</i>
<b>Number &amp; Operations — Fractions</b>	
<b>Develop understanding of fractions as numbers.</b>	
CCSS.MATH.CONTENT.3.NFA.A.1 Understand a fraction $1/b$ as the quantity formed by 1 part when $a$ whole is partitioned into $b$ equal parts; understand a fraction $a/b$ as the quantity formed by $a$ parts of size $1/b$ .	3-6 <i>Fractions=Trouble!</i> 3-7 <i>Go, Fractions!</i>
CCSS.MATH.CONTENT.3.NFA.A.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram. <ul style="list-style-type: none"> <li>A. Represent a fraction <math>1/b</math> on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into <math>b</math> equal parts. Recognize that each part has size <math>1/b</math> and that the endpoint of the part based at 0 locates the number <math>1/b</math> on the number line.</li> <li>B. Represent a fraction <math>a/b</math> on a number line diagram by marking off <math>a</math> lengths <math>1/b</math> from 0. Recognize that the resulting interval has size <math>a/b</math> and that its endpoint locates the number <math>a/b</math> on the number line.</li> </ul>	Provides opportunities: 3-6 <i>Fractions=Trouble!</i> 3-7 <i>Go, Fractions!</i>



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<p>CCSS.MATH.CONTENT.3.NF.A.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <ul style="list-style-type: none"> <li>A. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.</li> <li>B. Recognize and generate simple equivalent fractions, e.g., <math>1/2 = 2/4</math>, <math>4/6 = 2/3</math>. Explain why the fractions are equivalent, e.g., by using a visual fraction model.</li> <li>C. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. <i>Examples: Express 3 in the form <math>3 = 3/1</math>; recognize that <math>6/1 = 6</math>; locate <math>4/4</math> and 1 at the same point of a number line diagram.</i></li> <li>D. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, or <math>&lt;</math>, and justify the conclusions, e.g., by using a visual fraction model.</li> </ul>	<p><i>3-6 Fractions=Trouble!</i>  <i>3-7 Go, Fractions!</i>  <i>3-8 Grandfather Tang's Story</i></p>
<b>Measurement &amp; Data</b>	
<b>Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.</b>	
CCSS.MATH.CONTENT.3.MD.A.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	<i>3-5 Cheetah Math</i>
CCSS.MATH.CONTENT.3.MD.A. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). <sup>1</sup> Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.	<i>3-14 Lucky Beans</i>
<b>Represent and interpret data.</b>	
CCSS.MATH.CONTENT.3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. <i>For example, draw a bar graph in which each square in the bar graph might represent 5 pets.</i>	<p><i>3-5 Cheetah Math</i>  <i>3-25 A Very Improbable Story</i></p>
CCSS.MATH.CONTENT.3.MD.B.4 Generate measurement data by measuring lengths using	<i>3-12 How Tall, How Short, How Far Away?</i>



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rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.	
<b>Geometric measurement: understand concepts of area and relate area to multiplication and to addition.</b>	
<p>CCSS.MATH.CONTENT.3.MD.C.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.</p> <p>A. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.</p> <p>B. A plane figure which can be covered without gaps or overlaps by <math>n</math> unit squares is said to have an area of <math>n</math> square units.</p>	<p><i>3-8 Grandfather Tang's Story</i>  <i>3-10 The Greedy Tirangle</i>  <i>3-21 Shape Up!</i>  <i>3-23 Three Pigs, One Wolf, and Seven Magic Shapes</i></p>
CCSS.MATH.CONTENT.3.MD.C.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).	
<p>CCSS.MATH.CONTENT.3.MD.C.7 Relate area to the operations of multiplication and addition.</p> <p>A. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.</p> <p>B. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.</p> <p>C. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths <math>a</math> and <math>b + c</math> is the sum of <math>a \times b</math> and <math>a \times c</math>. Use area models to represent the distributive property in mathematical reasoning.</p> <p>D. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.</p>	
<b>Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.</b>	
CCSS.MATH.CONTENT.3.MD.D.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	<i>3-23 Three Pigs, One Wolf, and Seven Magic Shapes</i>

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<b>Grade 3</b>	
<b>Geometry</b>	
<b>Reason with shapes and their attributes.</b>	
CCSS.MATH.CONTENT.3.G.A.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	<p><i>3-13 I Spy Shapes in Art</i></p> <p><i>3-21 Shape Up!</i></p> <p><i>3-23 Three Pigs, One Wolf, and Seven Magic Shapes</i></p>
CCSS.MATH.CONTENT.3.G.A.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. <i>For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.</i>	<p><i>3-7 Go, Fractions!</i></p> <p><i>3-8 Grandfather Tang's Story</i></p>

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<b>Grade 4</b>	
<b>Operations &amp; Algebraic Thinking</b>	
<b>Use the four operations with whole numbers to solve problems</b>	
CCSS.MATH.CONTENT.4.OA.A.1 Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.	<i>4-8 Guinness World Records: Wild Lives</i>
CCSS.MATH.CONTENT.4.OA.A.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	<i>4-12 A Million Dots</i>
CCSS.MATH.CONTENT.4.OA.A.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	<i>4-1 The Big One-Oh</i> <i>4-3 Full Count</i> <i>4-6 Greater Estimations</i> <i>4-9, 4-14 Mystery Math: A First Book of Algebra</i> <i>4-15 One Hen</i> <i>4-16 One Riddle, One Answer</i>
<b>Gain familiarity with factors and multiples</b>	
CCSS.MATH.CONTENT.4.OA.B.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	<i>4-5 The Great Divide</i> <i>4-22 Usborne Illustrated Elementary Math Dictionary</i>
<b>Generate and analyze patterns.</b>	
CCSS.MATH.CONTENT.4.OA.C.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. <i>For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</i>	<i>4-2 The Cat in Numberland</i> <i>4-4 G is for Googol</i> <i>4-5 The Great Divide</i> <i>4-7 Growing Patterns</i> <i>4-10 The I Hate Mathematics! Book</i> <i>4-11 The Lion's Share</i> <i>4-13 A Million Fish ... More or Less</i> <i>4-20 Spaghetti and Meatballs for All!</i> <i>4-22 Usborne Illustrated Elementary Math Dictionary</i>
<b>Number &amp; Operations in Base Ten</b>	
<b>Generalize place value understanding for multi-digit whole numbers.</b>	
CCSS.MATH.CONTENT.4.NBT.A.1 Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the	<i>4-4 G is for Googol</i> <i>4-12 A Million Dots</i>

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<b>Grade 4</b>	
place to its right. <i>For example, recognize that <math>700 \div 70 = 10</math> by applying concepts of place value and division.</i>	
CCSS.MATH.CONTENT.4.NBT.A.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.	<i>4-8 Guinness World Records: Wild Lives</i> 4-9,
CCSS.MATH.CONTENT.4.NBT.A.3 Use place value understanding to round multi-digit whole numbers to any place.	<i>4-12 A Million Dots</i>
<b>Use place value understanding and properties of operations to perform multi-digit arithmetic.</b>	
CCSS.MATH.CONTENT.4.NBT.B.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.	<i>4-3 Full Count</i> <i>4-15 One Hen</i>
CCSS.MATH.CONTENT.4.NBT.B.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	<i>4-3 Full Count</i> <i>4-12 A Million Dots</i> <i>4-15 One Hen</i>
CCSS.MATH.CONTENT.4.NBT.B.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	<i>4-5 The Great Divide</i>
<b>Number &amp; Operations — Fractions</b>	
<b>Extend understanding of fraction equivalence and ordering</b>	
CCSS.MATH.CONTENT.4.NF.A.1 Explain why a fraction $a/b$ is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	<i>4-25 Working with Fractions</i>
CCSS.MATH.CONTENT.4.NF.A.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$ . Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$ , $=$ , or $<$ , and justify the conclusions, e.g., by using a visual fraction	<i>4-25 Working with Fractions</i>

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<b>Grade 4</b>	
model.	
<b>Build fractions from unit fractions.</b>	
<p>CCSS.MATH.CONTENT.4.NF.B.3 Understand a fraction <math>a/b</math> with <math>a &gt; 1</math> as a sum of fractions <math>1/b</math>.</p> <p>A. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.</p> <p>B. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. <i>Examples:</i> <math>3/8 = 1/8 + 1/8 + 1/8</math>; <math>3/8 = 1/8 + 2/8</math>; <math>2 \frac{1}{8} = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8</math>.</p> <p>C. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.</p> <p>D. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.</p>	4-25 <i>Working with Fractions</i>
<p>CCSS.MATH.CONTENT.4.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p> <p>A. Understand a fraction <math>a/b</math> as a multiple of <math>1/b</math>. <i>For example, use a visual fraction model to represent <math>5/4</math> as the product <math>5 \times (1/4)</math>, recording the conclusion by the equation <math>5/4 = 5 \times (1/4)</math>.</i></p> <p>B. Understand a multiple of <math>a/b</math> as a multiple of <math>1/b</math>, and use this understanding to multiply a fraction by a whole number. <i>For example, use a visual fraction model to express <math>3 \times (2/5)</math> as <math>6 \times (1/5)</math>, recognizing this product as <math>6/5</math>. (In general, <math>n \times (a/b) = (n \times a)/b</math>.)</i></p> <p>C. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. <i>For example, if each person at a party will eat <math>3/8</math> of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?</i></p>	
<b>Understand decimal notation for fractions, and compare decimal fractions.</b>	
<p>CCSS.MATH.CONTENT.4.NF.C.5 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to</p>	<p>4-17 <i>Piece = Part = Portion</i></p> <p>4-25 <i>Working with Fractions</i></p>

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<b>Grade 4</b>	
add two fractions with respective denominators 10 and 100. <sup>1</sup> <i>For example, express <math>\frac{3}{10}</math> as <math>\frac{30}{100}</math>, and add <math>\frac{3}{10} + \frac{4}{100} = \frac{34}{100}</math>.</i>	
CCSS.MATH.CONTENT.4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. <i>For example, rewrite 0.62 as <math>\frac{62}{100}</math>; describe a length as 0.62 meters; locate 0.62 on a number line diagram.</i>	4-17 Piece = Part = Portion
CCSS.MATH.CONTENT.4.NF.C.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$ , $=$ , or $<$ , and justify the conclusions, e.g., by using a visual model.	4-17 Piece = Part = Portion
<b>Measurement &amp; Data</b>	
<b>Solve problems involving measurement and conversion of measurements.</b>	
CCSS.MATH.CONTENT.4.MD.A.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. <i>For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</i>	4-9,
CCSS.MATH.CONTENT.4.MD.A.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	4-8 Guinness World Records: Wild Lives
CCSS.MATH.CONTENT.4.MD.A.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. <i>For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.</i>	4-18 Racing Around
<b>Represent and interpret data.</b>	
CCSS.MATH.CONTENT.4.MD.B.4 Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ). Solve problems involving	4-1 The Big One-Oh 4-8 Guinness World Records: Wild Lives 4-21 Tiger Math

<sup>1</sup> Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.

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<b>Grade 4</b>	
addition and subtraction of fractions by using information presented in line plots. <i>For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.</i>	
<b>Geometric measurement: understand concepts of angle and measure angles.</b>	
CCSS.MATH.CONTENT.4.MD.C.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: A. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles. B. An angle that turns through $n$ one-degree angles is said to have an angle measure of $n$ degrees.	4-24 <i>What's Your Angle, Pythagoras?</i>
CCSS.MATH.CONTENT.4.MD.C.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	4-24 <i>What's Your Angle, Pythagoras?</i>
CCSS.MATH.CONTENT.4.MD.C.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	
<b>Geometry</b>	
<b>Draw and identify lines and angles, and classify shapes by properties of their lines and angles.</b>	
CCSS.MATH.CONTENT.4.G.A.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	4-24 <i>What's Your Angle, Pythagoras?</i>
CCSS.MATH.CONTENT.4.G.A.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	4-23 <i>The Warlord's Puzzle</i>
CCSS.MATH.CONTENT.4.G.A.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	4-19 <i>Seeing Symmetry</i>

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<b>Grade 5</b>	
<b>Operations &amp; Algebraic Thinking</b>	
<b>Write and interpret numerical expressions.</b>	
CCSS.MATH.CONTENT.5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	5-13 <i>The Man Who Walked Between the Towers</i> 5-14 <i>Math Appeal</i> 5-16 <i>Math for Smarty Pants</i> 5-17 <i>Multiplying Meanace</i> 5-23 <i>Swirl by Swirl</i>
CCSS.MATH.CONTENT.5.OA.A.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. <i>For example, express the calculation “add 8 and 7, then multiply by 2” as <math>2 \times (8 + 7)</math>. Recognize that <math>3 \times (18932 + 921)</math> is three times as large as <math>18932 + 921</math>, without having to calculate the indicated sum or product.</i>	5-13 <i>The Man Who Walked Between the Towers</i> 5-14 <i>Math Appeal</i> 5-16 <i>Math for Smarty Pants</i> 5-17 <i>Multiplying Meanace</i> 5-23 <i>Swirl by Swirl</i>
<b>Analyze patterns and relationships.</b>	
CCSS.MATH.CONTENT.5.OA.A.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. <i>For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.</i>	5-18 <i>One Grain of Rice</i>
<b>Number &amp; Operations in Base Ten</b>	
<b>Understand the place value system</b>	
CCSS.MATH.CONTENT.5.NBT.A.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	5-3 <i>Can You Count to a Googol?</i> 5-9 <i>Hottest, Coldest, Highest, Deepest</i> 5-10 <i>How Strong Is It?</i> 5-19 <i>Pennies for Elephants</i>
CCSS.MATH.CONTENT.5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	5-3 <i>Can You Count to a Googol?</i> 5-18 <i>One Grain of Rice</i>
CCSS.MATH.CONTENT.5.NBT.A.3 Read, write, and compare decimals to thousandths. A. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$ .	5-3 <i>Can You Count to a Googol?</i> 5-6 <i>Frankie Pickle and the Mathematical Menace</i>



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B. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.	
CCSS.MATH.CONTENT.5.NBT.A.4 Use place value understanding to round decimals to any place.	5-3 <i>Can You Count to a Googol?</i>
<b>Perform operations with multi-digit whole numbers and with decimals to hundredths.</b>	
CCSS.MATH.CONTENT.5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	5-6 <i>Frankie Pickle and the Mathematical Menace</i> 5-8 <i>Guinness World Records: Ultimate Machines</i> 5-9 <i>Hottest, Coldest, Highest, Deepest</i> 5-10 <i>How Strong Is It?</i> 5-11 <i>If Dogs Were Dinosaurs</i> 5-13 <i>The Man Who Walked Between the Towers</i> 5-19 <i>Pennies for Elephants</i> 5-22 <i>Super Bowl Super Touchdowns</i> 5-23 <i>Swirl by Swirl</i> 5-25 <i>Wilma Unlimited</i>
CCSS.MATH.CONTENT.5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	5-17 <i>Multiplying Meanace</i>
CCSS.MATH.CONTENT.5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	5-6 <i>Frankie Pickle and the Mathematical Menace</i> 5-8 <i>Guinness World Records: Ultimate Machines</i> 5-9 <i>Hottest, Coldest, Highest, Deepest</i> 5-10 <i>How Strong Is It?</i> 5-11 <i>If Dogs Were Dinosaurs</i> 5-13 <i>The Man Who Walked Between the Towers</i> 5-19 <i>Pennies for Elephants</i> 5-22 <i>Super Bowl Super Touchdowns</i> 5-23 <i>Swirl by Swirl</i> 5-25 <i>Wilma Unlimited</i>
<b>Number &amp; Operations — Fractions</b>	
<b>Develop understanding of fractions as numbers.</b>	
CCSS.MATH.CONTENT.5.NF.A.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. <i>For example, <math>\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}</math>. (In general, <math>\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}</math>.)</i>	5-6 <i>Frankie Pickle and the Mathematical Menace</i> 5-12 <i>If the World Were a Village</i> 5-17 <i>Multiplying Meanace</i> 5-25 <i>Wilma Unlimited</i>
CCSS.MATH.CONTENT.5.NF.A.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including	5-25 <i>Wilma Unlimited</i>

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cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. <i>For example, recognize an incorrect result <math>2/5 + 1/2 = 3/7</math>, by observing that <math>3/7 &lt; 1/2</math>.</i>	
Apply and extend previous understanding of multiplication and division.	
CCSS.MATH.CONTENT.5.NF.A.B.3 Interpret a fraction as division of the numerator by the denominator ( $a/b = a \div b$ ). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. <i>For example, interpret <math>3/4</math> as the result of dividing 3 by 4, noting that <math>3/4</math> multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size <math>3/4</math>. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?</i>	5-17 <i>Multiplying Meanace</i>
CCSS.MATH.CONTENT.5.NF.A.B.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. A. Interpret the product $(a/b) \times q$ as $a$ parts of a partition of $q$ into $b$ equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$ . <i>For example, use a visual fraction model to show <math>(2/3) \times 4 = 8/3</math>, and create a story context for this equation. Do the same with <math>(2/3) \times (4/5) = 8/15</math>. (In general, <math>(a/b) \times (c/d) = ac/bd</math>.)</i> B. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	5-17 <i>Multiplying Meanace</i>
CCSS.MATH.CONTENT.5.NF.A.B.5 Interpret multiplication as scaling (resizing), by: A. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. B. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than	5-17 <i>Multiplying Meanace</i>

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1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying $a/b$ by 1.	
CCSS.MATH.CONTENT.5.NF.A.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	5-17 <i>Multiplying Meanace</i>
CCSS.MATH.CONTENT.5.NF.A.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. <sup>2</sup> A. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. <i>For example, create a story context for <math>(1/3) \div 4</math>, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that <math>(1/3) \div 4 = 1/12</math> because <math>(1/12) \times 4 = 1/3</math>.</i> B. Interpret division of a whole number by a unit fraction, and compute such quotients. <i>For example, create a story context for <math>4 \div (1/5)</math>, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that <math>4 \div (1/5) = 20</math> because <math>20 \times (1/5) = 4</math>.</i> C. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. <i>For example, how much chocolate will each person get if 3 people share <math>1/2</math> lb of chocolate equally? How many <math>1/3</math>-cup servings are in 2 cups of raisins?</i>	
<b>Measurement &amp; Data</b>	
<b>Convert like measurement units within a given measurement system.</b>	
CCSS.MATH.CONTENT.5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	5-8 <i>Guinness World Records: Ultimate Machines</i> 5-11 <i>If Dogs Were Dinosaurs</i> 5-13 <i>The Man Who Walked Between the Towers</i> 5-15 <i>Math Dictionary</i> 5-18 <i>One Grain of Rice</i> 5-20 <i>Polly's Pen Pal</i> 5-21 <i>Skyscraper</i> 5-22 <i>Super Bowl Super Touchdowns</i>

<sup>2</sup> Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.

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<b>Grade 5</b>	
<b>Represent and interpret data.</b>	
CCSS.MATH.CONTENT.5.MD.B.2 Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ). Use operations on fractions for this grade to solve problems involving information presented in line plots. <i>For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</i>	5-25 <i>Wilma Unlimited</i>
<b>Geometric measurement: understand concepts of volume.</b>	
CCSS.MATH.CONTENT.5.MD.C.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement. A. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume. B. A solid figure which can be packed without gaps or overlaps using $n$ unit cubes is said to have a volume of $n$ cubic units.	5-15 <i>Math Dictionary</i>
CCSS.MATH.CONTENT.5.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	5-15 <i>Math Dictionary</i>
CCSS.MATH.CONTENT.5.MD.C.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. A. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. B. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems. C. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.	5-15 <i>Math Dictionary</i>
<b>Geometry</b>	
<b>Graph points on the coordinate plane to solve real-world and mathematical problems.</b>	
CCSS.MATH.CONTENT.5.G.A.1 Use a pair of	5-5 <i>Flying on the Ceiling</i>

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perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).	
CCSS.MATH.CONTENT.5.G.A.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	5-5 <i>Flying on the Ceiling</i>
<b>Classify two-dimensional figures into categories based on their properties.</b>	
CCSS.MATH.CONTENT.5.G.B.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. <i>For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</i>	5-4 <i>Chasing Vermeer?</i> 5-7 <i>The Great Number Rumble</i>
CCSS.MATH.CONTENT.5.G.B.4 Classify two-dimensional figures in a hierarchy based on properties.	Provides opportunities: 5-4 <i>Chasing Vermeer?</i> 5-7 <i>The Great Number Rumble</i>