

Summit Public Schools Summit, New Jersey
Grade Level: 1
Content Area: Math

First Grade Scope and Sequence

<p>Summary of the Year</p> <p>In Grade 1, instructional time should focus on four critical areas: (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing understanding of linear measurement and measuring as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes.</p>	<p>Overview</p> <p>OPERATIONS AND ALGEBRAIC THINKING</p> <p>Represent and solve problems involving addition and subtraction. Understand and apply properties of operations and the relationship between addition and subtraction. Add and subtract within 20.</p> <p>Work with addition and subtraction equations.</p> <p>NUMBER AND OPERATIONS IN BASE TEN</p> <p>Extend the counting sequence. Understand place value. Use place value understanding and properties of operations to add and subtract.</p> <p>MEASUREMENT AND DATA</p> <p>Measure lengths indirectly and by iterating length units. Tell and write time. Represent and interpret data. GEOMETRY</p>
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	Year-at-a-Glance	Reason with shapes and their attributes.
Marking Period 1 Operations & Algebraic Thinking		STANDARDS FOR MATHEMATICAL PRACTICE: 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.
Marking Period 2 Operations & Algebraic Thinking Number & Operations in Base Ten Measurement & Data		
Marking Period 3 Operations & Algebraic Thinking Measurement & Data Geometry		

M P	Go Math Chapters:	Standards
1	Chapter 1- Addition Concepts	<u>CCSS.MATH.CONTENT.1.OA.A.1</u>

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<p><i>Approximate number of instructional days:</i> 12</p> <p>Chapter 2- Subtraction Concepts <i>Approximate number of instructional days:</i> 13</p> <p>Chapter 3- Addition Strategies <i>Approximate number of instructional days:</i> 15</p> <p>Fact Families- instructional days: 2</p> <p>Chapter 4- Subtraction Strategies</p>	<p>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.</p> <p>1.OA.A.2 -Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20</p> <p>CCSS.MATH.CONTENT.1.OA.B.3 Apply properties of operations as strategies to add and subtract.</p> <p>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; decomposing a number leading to a ten; using the relationship between addition and subtraction; and creating equivalent but easier or known sums.</p> <p>1.OA.C.5- Relate counting to addition and subtraction</p> <p>1.OA.D.7- Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.</p> <p>CCSS.MATH.CONTENT.1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers</p>
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<i>Approximate number of instructional days: 8</i>	
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MP	Go Math Chapters	Standards
2	<p>Chapter 5- Addition and Subtraction Relationships <i>Approximate number of instructional days: 13</i></p> <p>Chapter 6- Count and Model Numbers <i>Approximate number of instructional days: 13</i></p> <p>Chapter 7- Compare Numbers</p>	<p><u>1.OA.A.1</u>- 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.</p> <p>1.OA.B.4 Understand subtraction as an unknown-addend problem.</p> <p>1.OA.C.5-Relate counting to addition and subtraction</p> <p>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; decomposing a number leading to a ten; using the relationship between addition and subtraction; and creating equivalent but easier or known sums.</p>

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<p><i>Approximate number of instructional days: 9</i></p> <p>Counting Money- Pennies and Nickels <i>Approximate number of instructional days: 5</i></p> <p>Chapter 8- Two-Digit Addition and Subtraction <i>Approximate number of instructional days: 13</i></p> <p>Chapter 9- Measurement <i>Approximate number of instructional days: 15</i></p>	<p>1.OA.D.7- Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.</p> <p>1.OA.D.8- Determine the unknown whole number in an addition or subtraction equation relating three whole numbers</p> <p>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.</p> <p>1.NBT.B.2- Understand that the two digits of a two-digit number represent amounts of tens and ones.</p> <p>1.NBT.B.2.A- 10 can be thought of as a bundle of ten ones — called a "ten."</p> <p>1.NBT.B.2.B- The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.</p> <p>1.NBT.B.2.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).</p> <p>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 $<$.</p> <p>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.</p> <p>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 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.</p>
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	<p><u>1.NBT.C.6</u>- 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.</p> <p><u>1.MD.A.1</u>- Order three objects by length; compare the lengths of two objects indirectly by using a third object.</p> <p><u>1.MD.A.2</u>- 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.</p> <p><u>1.MD.B.3</u>- Tell and write time in hours and half-hours using analog and digital clocks.</p>
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Marking Period	Go Math Chapters	Standards
3	<p>Chapter 10- Represent Data <i>Approximate number of instructional days: 9</i></p> <p>Chapter 11- Three- Dimensional Geometry <i>Approximate number of instructional days: 7</i></p> <p>Chapter 12- Two- Dimensional Shapes <i>Approximate number of instructional days: 15</i></p> <p>Counting Money- Combinations of Pennies, Nickels, Dimes, and Quarters</p>	<p>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.</p> <p>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.</p> <p>1.G.A.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-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</p> <p>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.</p>

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<i>Approximate number of instructional days: 7</i>	
Step-Up to Grade 2 Lessons	

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. They should be infused throughout all mathematics concepts and units.

- MP.1 Make sense of problems and persevere in solving them.
- MP.2 Reason abstractly and quantitatively.
- MP.3 Construct viable arguments and critique the reasoning of others.
- MP.4 Model with mathematics
- MP.5 Use appropriate tools strategically.
- MP.6 Attend to precision
- MP.7 Look for and make use of structure.
- MP.8 Look for and express regularity in repeated reasoning

Unit Description: Marking Period 1

In the first marking period, 1st grade mathematics work will focus on the following concepts: understanding addition and subtraction, addition and subtraction facts to 12, understanding number relationships to 5 and 10, measuring length, working with coins and counting patterns to 120.

Standard
Operations and Algebraic Thinking 1.OA
Number and Operations in Base Ten 1.NBT
Measurement and Data 1.MD

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<p>Big Ideas: Course Objectives / Content Statement(s) Operations and Algebraic Thinking 1.OA</p> <ul style="list-style-type: none"> • Represent and solve problems involving addition and subtraction. • Understand and apply properties of operations and the relationship between addition and subtraction. • Add and subtract within 20. • Work with addition and subtraction equations. <p>Number and Operations in Base Ten 1.NBT</p> <ul style="list-style-type: none"> • Extend the counting sequence • Use place value understanding and properties of operations to add and subtract. 	
<p style="text-align: center;">Essential Questions</p> <p><i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i></p>	<p style="text-align: center;">Enduring Understandings</p> <p><i>What will students understand about the big ideas?</i></p>
<ul style="list-style-type: none"> • How is math relevant to me? • Why are different ways of counting important? • How can we compare and contrast numbers? • What do numbers tell us about the world around us? • Why do I measure? 	<p>Students will understand that...</p> <ul style="list-style-type: none"> • Numbers can represent quantity, position, location and relationships • Counting finds out the answer to “how many” in objects/sets. • Measurement describes the attributes of objects and events. • Standard units of measure enable people to interpret results or data. • Addition and subtraction have inverse relationships.
<p style="text-align: center;">Areas of Focus: Proficiencies (CCSS)</p>	<p style="text-align: center;">Examples, Outcomes, Assessments</p>
<p>Students will:</p> <p>Operations and Algebraic Thinking 1.OA</p>	<p>Instructional Strategies</p> <ul style="list-style-type: none"> • Compare two numbers 0-20 using the words more, less, and the same

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<p><i>A. Represent and solve problems involving addition and subtraction.</i></p> <p>1.OA.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.</p> <p>1.OA.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.</p> <p><i>B. Understand and apply properties of operations and the relationship between addition and subtraction.</i></p> <p>1.OA.3 Apply properties of operations as strategies to add and subtract. (Students need not use formal terms for these properties.) <i>Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known.</i></p>	<ul style="list-style-type: none"> ● Apply patterning skills to solve simple problems ● Numbers 6, 7, 8, and 9 can be broken into parts of the whole in different ways. ● Identify how parts of a whole is one interpretation of addition. ● Join parts to make a whole as one interpretation of addition. ● Solve by using objects to act out the actions in the problem. ● Match numbers to sets of objects and to pictures of sets (0-20) ● Form and identify, orally and in written form, two-part combinations of a given quantity through the number nine ● Identify whether a set has more than, less than, or the same number of objects as a reference set up to 20 ● Understand that a missing part of a whole can be found when the whole and the other part are known. ● Compare two quantities to find how much more/less one quantity is than the other ● Identify and count sets of pennies ● Order a set of 3 to 5 objects from shortest to longest ● Solve word problems using solution strategies ● Identify the multiple combinations of 10 ● Use strategies – such as the doubles strategy – to solve addition and subtraction problems ● Skip count to find the number of items in a group <p>Sample Assessments:</p>
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<p>(Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)</p> <p>1.OA.4 Understand subtraction as an unknown-addend problem.</p> <p>C. Add and subtract within 20.</p> <p>1.OA.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).</p> <p>1.OA.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 (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 $6 + 6 + 1 = 12 + 1 = 13$).</p>	<ul style="list-style-type: none"> • Students answer – <ul style="list-style-type: none"> • Result Unknown: There are 9 students on the playground. Then 8 more students showed up. How many students are there now? ($9+8 = \underline{\quad}$) • Change Unknown: There are 9 students on the playground. Some more students show up. There are now 17 students. How many students came? ($9 + \underline{\quad} = 17$) • Start Unknown: There are some students on the playground. Then 8 more students came. There are now 17 students. How many students were on the playground at the beginning? ($\underline{\quad} + 8 = 17$) • Exit slips <ul style="list-style-type: none"> • Which is longer: the height of the bookshelf or the height of a desk? • Game record sheets • Student self-assessment <ul style="list-style-type: none"> • Student can build a tower of 8 green cubes and 3 yellow cubes and another tower of 3 yellow and 8 green cubes to show that order does not change the result in the operation of addition. Students can also use cubes of 3 different is equivalent to $2 + (6 + 4)$ and then to prove $2 + 6 + 4 = 2 + 10$. • Writing prompts <ul style="list-style-type: none"> • There are cookies on the plate. There are 4 oatmeal raisin cookies, 5 chocolate chip cookies, and 6 gingerbread cookies. How many cookies are there total? • Math journals/Interactive Student Notebooks • Record sheets • Teacher observation
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<p><i>D. Work with addition and subtraction equations.</i></p> <p>1.OA.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false</p> <p>1.OA.8 Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers.</p>	<ul style="list-style-type: none"> • Ask for students to make a connection between counting and adding and subtraction. <ul style="list-style-type: none"> • How long is the paper in terms of paper clips? • Beginning, Middle, End-of-Year assessments • Progress check written assessment • Class checklists <p>Instructional Strategies:</p> <p>Interdisciplinary Connections</p> <ul style="list-style-type: none"> • Interactive Student Notebooks • Reading/writing word problems • Math literature list • Create wrapping paper and greeting cards using patterns and shapes • Use tally marks to tally the number of books read per day/ week on a reading log, count the marks at the end of the day/week
<p><i>E. Extend the counting sequence</i></p> <p>1.NBT.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.</p> <p>1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones.</p> <p><i>G. Use place value understanding and properties of operations to add and subtract.</i></p> <p>1.NBT.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</p>	<p>Technology Integration</p> <ul style="list-style-type: none"> • http://www.carolhurr.com/subjects/math/mathout.htm • http://www.scitammucc.edu/~eyoung/teacher_litc.html • http://www.k-5mathteachingresources.com/1st-grade-number-activities.html • http://www.k-5mathteachingresources.com/1st-grade-measurement-and-data.html <p>Media Literacy Integration</p> <ul style="list-style-type: none"> • Use objects from print media to create addition and subtraction story problems <p>Global Perspectives</p> <ul style="list-style-type: none"> • Explore songs from other countries that focus on numbers

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<p>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. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.</p>	<p>21st Century Skills: Creativity and Innovation Critical Thinking and Problem Solving – Use measurement and create a plan for designing the classroom setup Communication and Collaboration Information Literacy Media Literacy</p>
<p>Measurement and Data 1.MD <i>H. Measure lengths indirectly and by iterating length units.</i> 1.MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object. 1.MD.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</i></p>	<p>Life and Career Skills <ul style="list-style-type: none"> • What jobs use these skills? • How do your parents use these skills? 21st Century Themes (as applies to content area): Financial, Economic, Business, and Entrepreneurial Literacy <ul style="list-style-type: none"> • How do you save money? How can knowing about money help you as a 1st grader? Civic Literacy <ul style="list-style-type: none"> • How can knowing math help others? Health Literacy</p>

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<i>measured is spanned by a whole number of length units with no gaps or overlaps.</i>	
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The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. They should be infused throughout all mathematics concepts and units.

- MP.1 Make sense of problems and persevere in solving them.
- MP.2 Reason abstractly and quantitatively.
- MP.3 Construct viable arguments and critique the reasoning of others.
- MP.4 Model with mathematics
- MP.5 Use appropriate tools strategically.
- MP.6 Attend to precision
- MP.7 Look for and make use of structure.
- MP.8 Look for and express regularity in repeated reasoning

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Unit Description: Marking Period 2

In the second marking period, 1st grade mathematics work will focus on the following concepts: addition and subtraction facts to 20, working with coins, place value of ones and tens, addition of tens and ones and comparing numbers to 100.

Standard	
Operations and Algebraic Thinking 1.OA Number and Operations in Base Ten 1.NBT Measurement and Data 1.MD	
<p>Big Ideas: <i>Course Objectives / Content Statement(s)</i></p> <p>Operations and Algebraic Thinking 1.OA</p> <ul style="list-style-type: none"> • <i>Understand and apply properties of operations and the relationship between addition and subtraction.</i> • <i>Add and subtract within 20.</i> • <i>Work with addition and subtraction equations.</i> <p>Number and Operations in Base Ten 1.NBT</p> <ul style="list-style-type: none"> • <i>Extend the counting sequence</i> • <i>Understand Place Value</i> • <i>Use place value understanding and properties of operations to add and subtract.</i> <p>Measurement and Data 1.MD</p> <ul style="list-style-type: none"> • <i>Measure lengths indirectly and by iterating length units.</i> • <i>Tell and write time.</i> 	
Essential Questions	Enduring Understandings
<p><i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i></p> <ul style="list-style-type: none"> • How are place value patterns repeated in numbers? • How do you use measurement in your life? 	<p><i>What will students understand about the big ideas?</i></p> <p>Students will understand that...</p> <ul style="list-style-type: none"> • Placed value is based on groups of ten

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<ul style="list-style-type: none"> • Why do I need to know basic facts? 	<ul style="list-style-type: none"> • Standard units of measurement help us communicate effectively • Mastering the basic facts assists in accuracy and problem solving
Areas of Focus: Proficiencies (CCSS)	
Students will:	
<p>Operations and Algebraic Thinking 1.OA</p> <p>B. <i>Understand and apply properties of operations and the relationship between addition and subtraction.</i></p> <p>1.OA.3 Apply properties of operations as strategies to add and subtract. (Students need not use formal terms for these properties.) <i>Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)</i></p> <p>1.OA.4 Understand subtraction as an unknown-addend problem. <i>For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.</i></p> <p>C. <i>Add and subtract within 20.</i></p> <p>1.OA.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).</p> <p>1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 +$</p>	<p>Instructional Strategies:</p> <ul style="list-style-type: none"> • Form and identify, orally and in written form, two-part combinations of a given quantity through the number nine • Count objects and events to 100 • Form groups of 20-100 items • Identify whether a set has more than, less than, or the same number of objects as a reference set • Compare any two numbers less than 100 using the words more or less • Apply patterning skills to solve simple problems • Count and identify sets of pennies and nickels • Solve word problems using solution strategies • Recognize equality when combining parts to form a whole or dividing a whole into parts • Use ten or fewer objects to demonstrate addition and subtraction and attach the number sentence using addition, subtraction, and equality signs • Use a number line to demonstrate addition and subtraction • Given an addition and subtraction problem in story form presented verbally or in writing solve with manipulatives • Write addition and subtraction fact family equations (facts to 10) horizontally and vertically

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<p>$6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$)</p>	<ul style="list-style-type: none"> • Create addition and subtraction word problems to match a given drawing, picture, physical model, or number sentence • Order three objects by length; compare the lengths of two objects indirectly by using a third object. • 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. • Tell and write time in hours and half-hours using analog and digital clocks.
<p><i>Number and Operations in Base Ten 1.NBT</i> E. Extend the counting sequence</p>	
<p>1.NBT.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.</p>	
<p>1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones.</p>	
<p>G. Use place value understanding and properties of operations to add and subtract.</p>	<p>Sample Assessments:</p> <ul style="list-style-type: none"> • Student work- <ul style="list-style-type: none"> • Have students draw how addition symbol (+) represent joining situations, the subtraction symbol (-) represent separating situations, and the equal sign (=) represent a relationship regarding quantity between one side of the equation and the other. • Which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$. • Determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = \square - 3$, $6 + 6 = \square$. • Exit slips <ul style="list-style-type: none"> • Show - $12 + 5 = \underline{\quad}$ could be expressed as $5 + \underline{\quad} = 12$.
<p>1.NBT.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 reasoning used. Understand that in adding two-digit numbers, one adds tens. 1.NBT.5 Given a two-digit number, mentally find 10 more or 10 less</p>	<ul style="list-style-type: none"> • Game record sheets

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<p>than the number, without having to count; explain the reasoning used.</p> <p>1.NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.</p> <p>1.NBT.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.</p>	<ul style="list-style-type: none"> ● Student self-assessment ● Writing prompts <ul style="list-style-type: none"> ● Ask students to write and draw pictures of an example of adding and subtracting in their job. <ul style="list-style-type: none"> ● Show a piece of paper. How can you and a friend share equally (partition) this piece of paper so that you both have the same amount of paper to paint a picture? ● Math journals/Interactive Student Notebooks ● Record sheets ● Teacher observation ● Beginning, Middle, End-of-Year assessments ● Progress check written assessment ● Class checklists <p>Interdisciplinary Connections</p> <ul style="list-style-type: none"> ● <u>Telling Time With Big Mama Cat</u> by Dan Harper <p>Technology Integration</p> <ul style="list-style-type: none"> ● http://www.kidsnumbers.com/telling-time.php ● Use SMAT notebook to create clocks <p>Media Literacy Integration</p> <ul style="list-style-type: none"> ● Create a log of how much time is “screen time”
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	<p>Global Perspectives</p> <ul style="list-style-type: none">• Investigate how time zones are different throughout the globe• Investigate how children around the world spend their time in school and at home <p>21st Century Skills: Creativity and Innovation</p> <p>Critical Thinking and Problem Solving</p> <p>Communication and Collaboration</p> <p>Information Literacy</p> <p>Media Literacy</p> <p>Life and Career Skills</p> <p>21st Century Themes (as applies to content area): Financial, Economic, Business, and Entrepreneurial Literacy</p> <p>Civic Literacy</p>
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Health Literacy

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. They should be infused throughout all mathematics concepts and units.

- MP.1 Make sense of problems and persevere in solving them.
- MP.2 Reason abstractly and quantitatively.
- MP.3 Construct viable arguments and critique the reasoning of others.
- MP.4 Model with mathematics
- MP.5 Use appropriate tools strategically.
- MP.6 Attend to precision
- MP.7 Look for and make use of structure.
- MP.8 Look for and express regularity in repeated reasoning

Unit Description: Marking Period 3

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In the third marking period, 1st grade mathematics work will focus on the following concepts: subtraction of tens and ones, working with coins, telling time, using data to answer questions, and working with shapes.

Standard	
Operations and Algebraic Thinking 1.OA Number and Operations in Base Ten 1.NBT Measurement and Data 1.MD Geometry 1.G	
Big Ideas: Course Objectives / Content Statement(s)	
Operations and Algebraic Thinking 1.OA <ul style="list-style-type: none"> • <i>Understand and apply properties of operations and the relationship between addition and subtraction.</i> • <i>Add and subtract within 20.</i> • <i>Work with addition and subtraction equations.</i> 	
Number and Operations in Base Ten 1.NBT <ul style="list-style-type: none"> • <i>Understand Place Value</i> 	
Measurement and Data 1.MD <ul style="list-style-type: none"> • <i>Represent and Interpret Data</i> 	
Geometry 1.G <ul style="list-style-type: none"> • <i>Reason with shapes and their attributes.</i> 	
Essential Questions	Enduring Understandings
<i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i>	<i>What will students understand about the big ideas?</i>
<ul style="list-style-type: none"> • Where in the real world can I find shapes? 	Students will understand that...

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<ul style="list-style-type: none"> • In what ways can I match solid geometric figures to real-life objects? • How can I put shapes together and take them apart to form other shapes? • How does adding relate to subtracting? • Why is it important to be able to tell time on different clocks? • How many different ways can a whole be divided? 	<ul style="list-style-type: none"> • Objects can be described and compared using their geometric attributes. • Shapes make up the world around us. • Addition and subtraction are inverse operations. • Telling time to the half hour • Shapes can be divided into equal parts
Areas of Focus: Proficiencies (CCSS)	Examples, Outcomes, Assessments
<p>Students will:</p> <p>Operations and Algebraic Thinking 1.OA</p> <p>B. <i>Understand and apply properties of operations and the relationship between addition and subtraction.</i></p> <p>1.OA.3 Apply properties of operations as strategies to add and subtract. (Students need not use formal terms for these properties.) <i>Example: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known.</i> <i>(Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$.</i> <i>(Associative property of addition.)</i></p>	<p>Instructional Strategies:</p> <ul style="list-style-type: none"> • Collect and work with equivalent names for numbers (fact families/fact triangles) • Revisit the relationship between addition and subtraction • Use strategies to subtract • Find the values of collections of various coins • Tell time to the hour and the half hour • Collect data to make graphs • Identify, describe, and compare plane shapes/polygons • Identify and describe solid figures <p>Interdisciplinary Connections</p> <ul style="list-style-type: none"> • Interactive Student Notebooks • Reading/writing word problems • Math literature list (see attached)

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<p>1.OA.4 Understand subtraction as an unknown-addend problem. <i>For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.</i></p> <p>C. <i>Add and subtract within 20.</i></p> <p>1.OA.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).</p> <p>1.OA.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 (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 $6 + 6 + 1 = 12 + 1 = 13$).</p> <p>D. <i>Work with addition and subtraction equations.</i></p>	<ul style="list-style-type: none"> • Read aloud nonfiction books about shapes: <u>A Circle Here, a Square There</u> by David Diehl; <u>The Shape of Me and Other Stuff</u> by Dr. Seuss; <u>When a Line Bends, a Shape Begins</u> by Rhonda Gowler Green <p>Sample Assessment:</p> <ul style="list-style-type: none"> • Student work- <ul style="list-style-type: none"> • Determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = \square - 3$, $6 + 6 = \square$. • Show students three shapes one that is a triangle and two that look similar to triangles and ask, “Which figure is a triangle? How do you know that this is a triangle?” • Exit slips <ul style="list-style-type: none"> • Show - $12 + 5 = \underline{\quad}$ could be expressed as $5 + \underline{\quad} = 12$. • Fill in a fact triangle. Identify the fact family. • Draw the clock hands based on a digital time. • Game record sheets • Student self-assessment • Writing prompts <ul style="list-style-type: none"> • Ask students to write and draw pictures of an example of adding and subtracting. • If we cut a pizza into four slices (fourths), do you think the slices would be the same size, larger, or smaller as the slices on this pizza? • 4 people share 12 cookies. How many cookies does each person get? How can you be sure?
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<p>1.OA.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. <i>For example, which of the following equations are true and which are false?</i> $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.</p> <p>1.OA.8 Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers</p>	<ul style="list-style-type: none"> • Math journals/Interactive Student Notebooks • Record sheets • Teacher observation • Beginning, Middle, End-of-Year assessments • Progress check written assessment • Class checklists <p>Interdisciplinary Connections</p> <ul style="list-style-type: none"> • Create a book based on shape characters (such as <i>The Greedy Triangle</i> by Marilyn Burns) • Study different artists to compare how they use shapes in their design • Create a weekly and daily schedule of how time is spent • Study the changing seasons and how they depend on time • Record time beginning and ending to read on a reading log • Read aloud stories about time and clocks: <u>Clocks and More Clocks</u> by Pat Hutchins; <u>What's the Time Mr. Wolf</u> by Annie Kubler; • Write and solve number problems based on the cost of items that might be sold at a school store. • Movement – Have the class stand in line and move to divide into halves and quarters. Do the same in smaller groups. • Read aloud books about money: <u>One Cent, Two Cents, Old Cent, New Cent</u> by Dr. Seuss; <u>The Berenstain Bears' Trouble with Money</u> by Stan and Jan Berenstain; <u>All About Money</u> (Rookie Read-About Math) by Erin Roberson
<p><i>Number and Operations in Base Ten 1.NBT</i></p> <p>F. <i>Understand Place Value</i></p> <p>1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:</p> <p>a. 10 can be thought of as a bundle of ten ones — called a “ten.”</p> <p>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).</p>	<p>Technology Integration</p>
<p>Measurement and Data 1.MD</p>	

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<p><i>H. Measure lengths indirectly and by iterating length units.</i></p> <p><i>I. Tell and write time.</i></p> <p>1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.</p> <p><i>J. Represent and Interpret Data</i></p> <p>1.MD.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.</p>	<ul style="list-style-type: none"> • http://www.schooltube.com/video/8d15524f67be2b5611701/The-Greedy-Triangle • Shape Sudoku - http://www.thekidzpage.com/freekidsgames/games/sudoku/4x4/sudoku-01.html • http://nlvm.usu.edu/en/nav/category_g_1_t_4.html • http://nlvm.usu.edu/en/nav/category_g_1_t_1.html <p>Interdisciplinary Connections</p> <p>Media Literacy Integration</p> <ul style="list-style-type: none"> • Look through magazines and catalogs to identify 2D and 3 D shapes • Evaluate kid-friendly websites to determine how shapes create an appealing design <p>Global Perspectives</p> <ul style="list-style-type: none"> • Learn how to say “one hundred” in multiple languages to celebrate 100th day • Research global events that happened 100 years ago <p>21st Century Skills:</p> <p>Critical Thinking and Problem Solving</p> <p>Communication and Collaboration</p> <p>Information Literacy</p>
<p>Geometry 1.G</p> <p><i>K. Reason with shapes and their attributes.</i></p> <p>1.G.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.</p> <p>1.G.2 Compose two-dimensional shapes (rectangles, squares, trapezoids,</p>	

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<p>1.G.3</p> <p>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.</p>	<p>Media Literacy</p> <p>Life and Career Skills</p> <p>21st Century Themes (as applies to content area):</p> <p>Financial, Economic, Business, and Entrepreneurial Literacy</p> <p>Civic Literacy</p> <p>Health Literacy</p>
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Grade 1 - Math Enrichment

Shape Fill In Game

Directions: Youngest player rolls first. He/she colors in the same number of sections as he/she rolled. Next player rolls. He/she colors in that many sections using a different color. Continue playing until the shape is filled in. Player with the most sections colored in with his/her color is the winner. Skill level variations- Have the players add or subtract 1 or 2 from the number rolled and color in that many squares. Also play using 2 dice. Add the sums.

How Many Ways?

Students illustrate and write equations to show all the ways they know to get to a number (i.e. How Many Ways to get 13?)

Secret Number (<http://nrch.maths.org/5651>)

The first student enters a “secret” number into a calculator. Another student gives a direction such as “add 4”. The first student adds the number and shows the result. What was the secret number? How do you know? You could play this with a friend. If you work out your friend’s secret number correctly, it is your turn to put in a secret number of your own. You could score a point for every one you get right.

Foot Ruler

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Students can make footprint rulers (and toe rulers for measuring little things) out of cardstock. Make a few teacher's foot rulers. Students can measure things with all three rulers and compare their findings. Compare to a standard ruler. Read, "How Big is a Foot?" by Rolf Myller
 Homework: take the foot ruler home and measure their bed.

<p>Concept or Chapter</p>	<p>Resources for Enrichment</p>
<p>First Day Activity: 1.G.A1,2 Provide students with some colored shapes or play doh. Set them a challenge to create a picture using a set number of each colored shapes.</p> <p>1.OA.C6, 1.NBT.C4 Review with students different ways to write sums of numbers using addends of 1,2,3...(e.g. the number three has 3 ways: 1+1+1, 1+2, 2+1) Students then write all the addition expressions for a sum of four (e.g. 1+1+1+1, 1+1+2, 1+2+1...) and begin a t-chart showing their results for these two examples. They should then predict and find all examples for a sum of 5 (there are 15). Students can predict how many ways for 6,7 & 8 solve and extend the t-chart. Look for patterns in the number of sums.</p>	<p>http://www.k-5mathteachingresources.com/support-files/putting-shapes-together.pdf Put Shapes Together</p> <p>Number Sums, About Teaching Mathematics, Marilyn Burns, p.267-70 (attach) Read "Ten Friends", Bruce Goldstone.</p>

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<p>1.MD.1,2,4 Students work in pairs. Using yarn they measure each other's height and armspan. Once they have determined their "measurements", students categorize themselves as square, tall or rectangle. Write a story titled, "If I were 1 Centimeter Tall".</p>	<p>https://www.georgiastandards.org/Georgia-Standards/Frameworks/1st-Math-Unit-4.pdf What Shape Are You? Are You a Square?, About Teaching Mathematics, Marilyn Burns,p.154-57. (attach)</p>
<p>1.G.A2 Students solve pattern block puzzles and learn games. Activities in this book are coded by level of difficulty. Look for the stars in the corners of the pages.</p>	<p>https://www.learningresources.com/text/pdf/7252_FTL_Pattern_Block_Pages.pdf (attach?)</p>
<p>1.NBT.A1, 1.NBT.B2b Students draw symbols for the wildlife they see and tally each sighting. How do the numbers compare? What animals have the most tallies? The least? Participate in the Audubon Society's Bird Count</p>	<p>Nature Count, The Secret Life of Math, McCallum, p.20-1 (attach) www.audobon.org</p>

Concept or Chapter	Resources for Support
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Operations and Algebraic Thinking	
Chapter 1: Addition Concepts	Roll and Add: http://mrsfirstgradeclass-jill.blogspot.ca/2011/09/roll-and-add.html Strike Me Out! http://www.classroomfreebiestoo.com/2012/03/baseball-addition.html
Chapter 2: Subtraction Concepts	Balloon Pop Subtraction: http://www.abcyra.com/subtraction_game.htm http://www.k-5mathteachingresources.com/support-files/subtract-from-10.pdf
Chapter 3: Addition Strategies	Addition Strategies Mat: http://learningadventureswithmrsgerlach.blogspot.com/2012/11/math-build-centers-with-freebies.html Doubles Jump! http://www.adrianbruce.com/math/addition/item/16-doubles-maths-game.html Marble Math: http://www.abcyra.com/addition.htm The Egg and Bean Game: http://1.bp.blogspot.com/_GUU31tZ7Fsw/TFE7Dxp50WU/AAAAAAAAAhw/G4ftbJPDG4/s1600/Egg%2526BeanGame.jpg
Chapter 4: Subtraction Strategies	Subtraction Strategies Mat: https://mrscrowley1st.files.wordpress.com/2013/08/subtraction-strategies-mat.jpg
Chapter 5: Addition and Subtraction Relationships	http://www.k-5mathteachingresources.com/support-files/turn-around-trains.pdf http://www.k-5mathteachingresources.com/support-files/turn-around-dominoes.pdf

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Number and Operations in Base Ten	
Chapter 6: Count and Model Numbers	<p>Number Grid Fireworks: http://www.abcya.com/100_number_grid.htm Base Ten Fun: http://www.abcya.com/base_ten_fun.htm Count the Numbers: http://www.abcya.com/number_bubble_counting.htm</p>
Chapter 7: Compare Numbers	<p>Monster Squeeze: https://emgames.everydaymathonline.com/g_details.html?gradelevel=1&demo=1 Race Way Number Values: http://www.abcya.com/comparing_number_values.htm Ten Frames Comparing: http://216.172.184.176/~ab97205/wp-content/uploads/2013/09/Concrete-Comparing-11.jpg</p>
Chapter 8: Two-Digit Addition and Subtraction	<p>Two Digit Addition Scoot: http://2bhoneybunch.blogspot.com/search?updated-max=2012-02-18T20:29:00-07:00&max-results=5 http://www.k-5mathteachingresources.com/support-files/add-subtract-10-on-the-empty-number-line.pdf http://www.k-5mathteachingresources.com/support-files/what-number-is.pdf</p>
Measurement and Data	

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Chapter 9: Measurement	<p>Hand out different lengths of string or paper strips. The children find objects that are about the same size, larger and smaller.</p> <p>Time Travel: http://www.abcya.com/telling_time.htm</p> <p>Learning Coins: http://www.abcya.com/learning_coins.htm</p> <p>http://www.k-5mathteachingresources.com/support-files/comparing-towers.pdf</p> <p>http://www.k-5mathteachingresources.com/support-files/is-it-longer.pdf</p>
Chapter 10: Represent Data	<p>Fun Ways For Kids To Graph: http://www.themeasuredmom.com/7-ways-to-make-a-graph-with-kids/</p> <p>Fuzz Bugs Graphing: http://www.abcya.com/fuzz_bugs_graphing.htm</p> <p>http://www.k-5mathteachingresources.com/support-files/button-picture-graph.pdf</p>
Geometry	
Chapter 11: Three-Dimensional Geometry	<p>https://www.youtube.com/watch?v=2cg-Uc556-Q</p> <p>Brain Pop Jr.</p> <p>We're in Good Shape: both 2/3 D ideas http://firstgradewow.blogspot.ca/search/label/geometry</p>

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	http://www.k-5mathteachingresources.com/support-files/my-3d-shape-book-ver.1.pdf
Chapter 12: Two-Dimensional Geometry	<p>Jack Hartmann https://www.youtube.com/watch?v=beTTDz9HSNOM</p> <p>Shape Match: http://www.abcyz.com/shape_match.htm Brain Pop Jr. Geometry games pack: https://drive.google.com/a/summit.k12.nj.us/file/d/0Bvsv7oGhWSHwYjBkYjA4ZmMhNkNkY3MkY00ZjkxLTlINkNDIENkQwZGY5MmI4MkZm/view</p> <p>http://www.k-5mathteachingresources.com/support-files/shape-sort.pdf</p> <p>http://www.k-5mathteachingresources.com/support-files/playdo-shapes.pdf</p>