

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

Kindergarten Scope and Sequence – Go Math!

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| <p>Summary of the Year In Kindergarten, instructional time should focus on two critical areas: (1) representing and comparing whole numbers, initially with sets of objects; (2) describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.</p> | <p>Overview COUNTING AND CARDINALITY Know number names and the count sequence. Count to tell the number of objects. Compare numbers. OPERATIONS AND ALGEBRAIC THINKING Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. NUMBER AND OPERATIONS IN BASE TEN Work with numbers 11-19 to gain foundations for place value. MEASUREMENT AND DATA Describe and compare measurable attributes. Classify objects and count the number of objects in categories. GEOMETRY Identify and describe shapes. Analyze, compare, create, and compose shapes.</p> |
| <p style="text-align: center;">Year-at-a-Glance</p> <p>Semester 1: COUNTING AND CARDINALITY (*0-10) Know number names and the count sequence. Count to tell the number of objects. Compare numbers. GEOMETRY Identify and describe shapes.</p> | <p>STANDARDS FOR MATHEMATICAL PRACTICE:</p> <ol style="list-style-type: none">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. |

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Analyze, compare, create, and compose shapes.

OPERATIONS AND ALGEBRAIC THINKING

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. (*Addition, Begin Subtraction)

Semester 2:

OPERATIONS AND ALGEBRAIC THINKING

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. (*Subtraction)

NUMBER AND OPERATIONS IN BASE TEN

Work with numbers 11-19 to gain foundations for place value.

COUNTING AND CARDINALITY (*0-20 and Beyond)

Know number names and the count sequence.

Count to tell the number of objects.

Compare numbers.

MEASUREMENT AND DATA

Describe and compare measurable attributes.

Classify objects and count the number of objects in categories.

6. Attend to precision.

7. Look for and make use of structure.

8. Look for and express regularity in repeated reasoning.

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| Semester | Chapter/Focus | Resources | Standards |
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| S1 | <p>Chapters 1-4: Represent, Count, and Write Numbers 0 to 10 <i>- Approximate number of instructional days: 42 days</i></p> <p>Chapters 9-10: Identify and Describe 2-Dimensional and 3-Dimensional Shapes <i>- Approximate number of instructional days: ~ 31 days</i></p> <p>Chapter 5: Addition <i>- Approximate number of instructional days: 20 days (ends at beginning of S2)</i></p> | <p style="text-align: center;">Chapters 1-4: Represent, Count, and Write Numbers 0-10</p> <p>Math on the Spot videos and Go Math! Interactive Student Edition @ http://www-k6.thinkcentral.com/ePC/start.do</p> <p><i>Grab and Go! Differentiated Centers Kit</i></p> <p><i>Number and Counting Books to Read Aloud;</i> <i>Some examples include:</i> Ten Black Dots Mouse Count Rooster's Off to See the World Chicka Chicka 1 2 3 Click, Clack, Splish, Splash Fish Eyes How Do Dinosaurs Count to Ten? City By Numbers Just Enough Carrots Five Little Monkey Stories</p> <p><i>Website Suggestions:</i> http://www.pbs.org/parents/earlymath/prek_games.html http://pbskids.org/games/counting.html</p> <p><i>Possible Game Materials:</i> Number Cards 0-10 Number Puzzles 0-10 Number Card/Picture Math 0-10</p> | <p><i>Counting and Cardinality</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). 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). CCSS.Math.Content.K.CC.B.4a 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. CCSS.Math.Content.K.CC.B.4b Understand that the last number name said tells the number of objects counted. The number of objects is the</p> |

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| <p>Total: <i>Approximate number of instructional days for S1: ~93 days</i></p> | <p>Standard Dice with Dots Dice with Numerals written on the Sides (1-6) Counters (i.e. pennies, cubes, etc.) 1-6 Number Graph with Tracing Dots I Have...Who Has? 0-10 Cards (Numbers should also be represented within the ten-frame.)</p> <p style="text-align: center;">Chapters 9-10: Identify and Describe 2-Dimensional and 3-Dimensional Shapes</p> <p>Math on the Spot videos and Go Math! Interactive Student Edition @ http://www-k6.thinkcentral.com/ePC/start.do</p> <p><i>Grab and Go! Differentiated Centers Kit</i></p> <p><i>Shape Stories to Read Aloud; Some examples include:</i> The Shape of Things Shapes All Around Us Brown Rabbit’s Shape Book Mouse Shapes Shapes Everywhere Captain Invincible and the Space Shapes</p> <p>Website Suggestions: www.abcya.com/shapes_geometry_game.htm http://www.turtlediary.com/kindergarten-games/math-games/play-with-shapes.html</p> <p><i>Possible Game Materials:</i> Pattern Blocks Pattern Block Templates 3-Dimensional Shape Blocks I Have...Who Has? Shape Cards</p> <p style="text-align: center;">Chapter 5: Addition</p> | <p>same regardless of their arrangement or the order in which they were counted. CCSS.Math.Content.K.CC.B.4c Understand that each successive number name refers to a quantity that is one larger. 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. 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. CCSS.Math.Content.K.CC.C.6</p> |
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| | | <p>Math on the Spot videos and Go Math! Interactive Student Edition @ http://www-k6.thinkcentral.com/ePC/start.do</p> <p><i>Grab and Go! Differentiated Centers Kit</i></p> <p><i>Addition and Subtraction Stories to Read Aloud; Some examples include:</i> Animals on Board Domino Math The Mission of Addition One is a Snail, Ten is a Crab Who Stole the Cookie from the Cookie Jar? Elevator Magic</p> <p><i>Website Suggestions:</i> http://www.turtlediary.com/kindergarten-games/math-games/math-story.html.</p> <p>http://www.softschools.com/coloring_games/coloring_umbrellaadd.jsp.</p> <p>http://www.softschools.com/math/games/fishing_sub.jsp.</p> <p><i>Possible Game Materials:</i> Various Manipulatives to Show Different Number Combinations; i.e. beans, bears, cubes, tiles, etc. Two Large Sets of Number Cards 0-10 Dominoes Dice with +/- on the Sides Play Bowling Set</p> | <p><u>C.7</u> Compare two numbers between 1 and 10 presented as written numerals.</p> <p><i>Geometry</i> 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 <i>above</i>, <i>below</i>, <i>beside</i>, <i>in front of</i>, <i>behind</i>, and <i>next to</i>. CCSS.Math.Content.K.G.A.2 Correctly name shapes regardless of their orientations or overall size. CCSS.Math.Content.K.G.A.3 Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”). CCSS.Math.Content.K.G.B.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using</p> |
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| | | | <p>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).</p> <p>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.</p> <p>CCSS.Math.Content.K.G.B.6 Compose simple shapes to form larger shapes. <i>For example, “Can you join these two triangles with full sides touching to make a rectangle?”</i></p> <p><i>Operations and Algebraic Thinking</i></p> <p>CCSS.Math.Content.K.OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out</p> |
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| | | | <p>situations, verbal explanations, expressions, or equations.</p> <p>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.</p> <p>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 $5 = 4 + 1$).</p> <p>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.</p> <p>CCSS.Math.Content.K.OA</p> |
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| | | | .A.5 Fluently add and subtract within 5. |
| S2 | <p>Chapter 7: Represent, Count, and Write 11-19 - Approximate number of instructional days: ~ 18 days</p> <p>Chapter 8: Represent, Count, and Write to 20 and Beyond - Approximate number of instructional days: ~ 15 days</p> <p>Chapter 6: Subtraction - Approximate number of instructional days: ~ 15 days</p> <p>Chapter 12: Classify and Sort Data - Approximate</p> | <p>Chapter 7: Represent, Count, and Write 11-19</p> <p>Math on the Spot videos and Go Math! Interactive Student Edition @ http://www-k6.thinkcentral.com/ePC/start.do</p> <p><i>Grab and Go! Differentiated Centers Kit</i></p> <p><i>Teen Number Stories to Read Aloud; Some examples include:</i></p> <p>Let's Count Critters 0-20 The Icky Bug Counting Book A Fair Bear Share Summertime Math Where's the Party? Meet the Teens</p> <p><i>Website Suggestions:</i></p> <p>https://www.youtube.com/watch?v=1W5aYi3lkho</p> <p>https://www.youtube.com/watch?v=uedvwH6Ay18</p> <p>http://www.fuelthebrain.com/Interactives/app.php?ID=29</p> <p><i>Possible Game Materials:</i></p> <p>Double Ten-Frame Mats Teen Dice Cubes (to build one train of 10, plus some more) Teen Number Memory Cards (Numerals matched with the numbers represented in the double ten-</p> | <p><i>Operations and Algebraic Thinking</i></p> <p>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.</p> <p>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.</p> <p>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</p> |

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| <p><i>number of instructional days: ~ 15 days</i></p> <p>Chapter 11: Measurement - Approximate number of instructional days: ~ 9 days</p> <p>End of Year Assessments - Approximate number of instructional days: ~ 5 days</p> <p>Total: Approximate number of instructional days for S2: 77 days</p> | <p>frame.) I Have...Who Has? 10-20 Cards (Numbers should also be represented within the double ten-frame.)</p> <p style="text-align: center;">Chapter 8: Represent, Count, and Write to 20 and Beyond</p> <p>Math on the Spot videos and Go Math! Interactive Student Edition @ http://www-k6.thinkcentral.com/ePC/start.do</p> <p><i>Grab and Go! Differentiated Centers Kit</i></p> <p><i>Number Stories to Read Aloud; Some examples include:</i> Counting at the Market How Many Seeds in a Pumpkin? Let's Count to 100! 100th Day Worries One Hundred Hungry Ants I'll Teach My Dog 100 Words Toasty Toes</p> <p><i>Website Suggestions:</i> http://www.abcya.com/one_hundred_number_chart_game.htm http://www.adaptedmind.com/landing-responsivev13jsfix.php?utm_expid=33853517-85.V0f5r4LxRaWgDNF62qJDJg.1&utm_referrer=http%3A%2F%2Fwww.adaptedmind.com%2Fpagev100.php%3FtagId%3D6</p> <p><i>Possible Game Materials:</i> 1-50 Number Grids 1-100 Number Grids Cut-up 100 Number Grids (to be used as puzzles) 100 Pocket Chart Large 100 Grid Floor Mat</p> | <p>drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$).</p> <p>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.</p> <p>CCSS.Math.Content.K.OA.A.5 Fluently add and subtract within 5.</p> <p><i>Number and Operations in Base Ten</i> CCSS.Math.Content.K.NB.T.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 (such as $18 = 10 + 8$); understand that these numbers are composed of ten ones and one,</p> |
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| | | <p>Chapters 6: Subtraction</p> <p>Math on the Spot videos and Go Math! Interactive Student Edition @ http://www-k6.thinkcentral.com/ePC/start.do</p> <p><i>Grab and Go! Differentiated Centers Kit</i></p> <p><i>Addition and Subtraction Stories to Read Aloud; Some examples include:</i> Animals on Board Domino Math The Mission of Addition One is a Snail, Ten is a Crab Who Stole the Cookie from the Cookie Jar? Elevator Magic</p> <p><i>Website Suggestions:</i> http://www.turtlediary.com/kindergarten-games/math-games/math-story.html</p> <p>http://www.softschools.com/coloring_games/coloring_umbrellaadd.jsp</p> <p>http://www.softschools.com/math/games/fishing_sub.jsp</p> <p><i>Possible Game Materials:</i> Various Manipulatives to Show Different Number Combinations; i.e. beans, bears, cubes, tiles, etc. Two Large Sets of Number Cards 0-10 Dominoes Dice with +/- on the Sides Play Bowling Set</p> | <p>two, three, four, five, six, seven, eight, or nine ones.</p> <p><i>Counting and Cardinality</i></p> <p>CCSS.Math.Content.K.CC.A.1 Count to 100 by ones and by tens.</p> <p>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).</p> <p>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).</p> <p>CCSS.Math.Content.K.CC.B.4a 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.</p> <p>CCSS.Math.Content.K.CC.</p> |
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| | | <p>Chapter 12: Classify and Sort Data</p> <p>Chapter 11: Measurement</p> <p>Math on the Spot videos and Go Math! Interactive Student Edition @ http://www-k6.thinkcentral.com/ePC/start.do</p> <p><i>Grab and Go! Differentiated Centers Kit</i></p> <p><i>Measurement and Data Stories to Read Aloud; Some examples include:</i></p> <p>Me and the Measure of Things How Big is a Foot? Measuring Penny The Great Graph Contest Lemonade for Sale 3 Little Firefighters Sorting</p> <p><i>Website Suggestions:</i> www.abcya.com/counting_sorting_comparing.htm</p> <p><i>Possible Game Materials:</i></p> <p>Various Classroom Items to Measure in Teams Attribute Blocks Attribute Dice (large, small, thick, thin, colors, etc.) Various Math Manipulatives (for sorting) Sorting Boxes/Containers</p> | <p>B.4b 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. CCSS.Math.Content.K.CC.B.4c Understand that each successive number name refers to a quantity that is one larger. 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. 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</p> |
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| | | | <p>number of objects in another group, e.g., by using matching and counting strategies.¹ CCSS.Math.Content.K.CC.C.7 Compare two numbers between 1 and 10 presented as written numerals.</p> <p><i>Measurement and Data</i> CCSS.Math.Content.K.M.D.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. CCSS.Math.Content.K.M.D.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. <i>For example, directly compare the heights of two children and describe one child as taller/shorter.</i></p> |
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| | | | 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. |
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Unit Description: Numbers 0-10
 GO Math! Chapters 1-4

| Domains: **Counting and Cardinality K.CC Operations and Algebraic Thinking K.OA | |
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| Big Ideas: <i>Course Objectives / Content Statement(s)</i> Counting and Cardinality K.CC <ul style="list-style-type: none"> • <i>Know number names and the count sequence.</i> • <i>Count to tell the number of objects.</i> • <i>Compare numbers.</i> Operations and Algebraic Thinking K.OA <ul style="list-style-type: none"> • <i>Understand addition as putting together and adding, and understand subtraction as taking apart and taking from.</i> | |
| Essential Questions <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> | Enduring Understandings <i>What will students understand about the big ideas?</i> |
| <ul style="list-style-type: none"> • Where are numbers in our daily routines? • Why do we count? • How do we show how many? (i.e. number name, symbol, with objects, etc.) • How can we compare and contrast numbers? • What does “more/greater,” “less/fewer” and “same/equal” | Students will understand that... <ul style="list-style-type: none"> • Numbers help us understand the world around us. • Numbers can be used for different purposes, and numbers can be classified and represented in different ways. • Mathematics content and practices can be applied to solve problems. |

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| <p>mean?</p> <ul style="list-style-type: none"> • How do we order numbers? • How can we use number patterns to help us? | <ul style="list-style-type: none"> • Numbers, expressions, measures and objects can be compared and related to other numbers, expressions, measures and objects in different ways. • The set of real numbers is infinite and ordered. Whole numbers, integers, and fractions are real numbers. Each real number can be associated with a unique point on the number line. • Relationships can be described and generalizations made for mathematical situations that have numbers or objects that repeat in predictable ways. |
| <p>Areas of Focus: Proficiencies (CCSS)</p> | <p>Examples, Outcomes, Assessments</p> |
| <p>Students will: <i>Counting and Cardinality</i></p> <p>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).</p> <p>CCSS.Math.Content.K.CC.A.3 Write numbers from 0 to 20.</p> <p>Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).</p> <p>CCSS.Math.Content.K.CC.B.4a 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.</p> <p>CCSS.Math.Content.K.CC.B.4b 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.</p> <p>CCSS.Math.Content.K.CC.B.4c Understand that each successive number name refers to a quantity that is one larger.</p> <p>CCSS.Math.Content.K.CC.B.5 Count to answer “how many?”</p> | <p>Instructional Strategies:</p> <ul style="list-style-type: none"> • Tracking the number of days in school (calendar math) • Reinforcing counting principals through multi-sensory methods • Counting zero to 10 (in different arrangements) • Reading zero to 10 • Writing zero to 10 • Identifying more, fewer, and same as • Comparing and ordering numbers zero to 10 <p>Sample Assessments</p> <ul style="list-style-type: none"> • Students answer the question “How many are there?” by counting objects in a set. • Have students write the numerals zero to 10 and use the written numerals zero to 10 to represent the amount within a set. For example, if the student has counted 4 objects, then the written numeral “4” is recorded. • Students compare numbers by using objects to represent each amount. • Student describe two already made groups of objects by using the words “more/greater,” “less/fewer” and “same/equal to.” |

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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.

[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.¹

[CCSS.Math.Content.K.CC.C.7](#) Compare two numbers between 1 and 10 presented as written numerals.

Operations and Algebraic Thinking

[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 $5 = 4 + 1$).

[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.

- Students order number cards 0-10 when presented in random order by the teacher.
- Chapters 1-4: Show What You Know (pre-assessments), Mid-Chapter Checkpoints, and Tests

Interdisciplinary Connections

- Calendar – On a daily basis have the students count, pattern, share about their experiences, add and subtract.
- Attendance – Children assist in recording of daily attendance.
- Daily schedule – Children develop language skills and concepts of time when discussing daily schedule.
- Handing out supplies – “Please count out how many pieces of paper are needed for each person at your table.”
- Art – Draw or paint pictures to represent numbers zero to 10, create themed number/counting books.
- Movement – Students use their bodies as the “objects” to compare numbers, make a human number line using large number cards, play “say and do” with numbers to ten by distributing number cards, calling a number and giving a direction (i.e. “If you have the number seven, jump seven times), etc.
- Literacy – Read various counting and number books.
- Literacy - <http://www.thereadingnook.com/math/>
- Science - While writing as a scientist, include numbers in labels describing what students are investigating.
- Science – Each student brings in an apple to observe. As a class, sort the apples by different categories (color, size, stem/no stem, etc.). Discuss which piles have more and less.
- Social Studies/Art – Students create apple trees and write the number of apples underneath the tree. (Apples should be between 0-10.)

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- Social Studies – Teacher hides various Thanksgiving pictures around the classroom (i.e. 5 turkeys, 7 pumpkin pies, etc.). Students go on a hunt to find, count, and record how many of each picture.
- Play – Students play the game “Penny Roll” in partnerships. Each partner rolls the die and counts out that many pennies from the bank.
- Play – Students play the game “Roll and Record” in partnerships. Each partnership needs a die and a number graph with numbers 1-6 along the bottom. The numbers should be pre-written in the graph (with dots) for tracing purposes. One partner rolls and traces the number he/she rolled on the graph. Partners take turns until one number is graphed all the way to the top.
- Play – The whole class plays “I Have, Who Has?” numbers 0-5 and/or 0-10.
- Play – Students play the game “Who Has More?” in partnerships. Each partner rolls a die and collects that number of pennies. The partners line up their pennies to decide who has more. The partner with more pennies keeps them, and the other partner returns his/her pennies to the bank.

Technology Integration

- http://www.pbs.org/parents/earlymath/prek_games.html
- <http://pbskids.org/games/counting.html>
- Math on the Spot videos and Go Math! Interactive Student Edition @ <http://www-k6.thinkcentral.com/ePC/start.do>

Media Literacy Integration

- Identify numbers zero to 10 found on the Internet and in print.

Global Perspectives

- Count family members; compare numbers of boys and girls in the

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| | <p>family.</p> <ul style="list-style-type: none">• Count holiday-themed objects (i.e. apples, ghosts, turkeys, etc.) <p>21st Century Skills: Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration Information Literacy</p> <p>Media Literacy Life and Career Skills</p> <ul style="list-style-type: none">• Answer questions such as -<ul style="list-style-type: none">○ What jobs use these skills?○ How do your parents use these skills? <p>21st Century Themes (as applies to content area): Financial, Economic, Business, and Entrepreneurial Literacy Civic Literacy Health Literacy</p> <ul style="list-style-type: none">• Movement – <i>Follow the Leader</i> – practice counting around a circle while making the same movement the leader is making. The person who gets to 5 changes the movement. |
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Unit Description: Addition and Subtraction
 GO Math! Chapters 5-6

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| Domains: **Operations and Algebraic Thinking K.OA | |
| Big Ideas: <i>Course Objectives / Content Statement(s)</i> Operations and Algebraic Thinking K.OA | |
| <ul style="list-style-type: none"> Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from. | |
| Essential Questions <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> | Enduring Understandings <i>What will students understand about the big ideas?</i> |
| <ul style="list-style-type: none"> How do I add? How do I subtract? What do addition and subtraction tell us about the world? What does a number sentence tell us? | Students will understand that... <ul style="list-style-type: none"> There are multiple interpretations of addition and subtraction of numbers, and addition and subtraction operations are related to one another. Mathematics content and practices can be applied to solve problems. Any number, measure, numerical expression, algebraic expression, or equation can be represented in an infinite number of ways that |

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| Areas of Focus: Proficiencies (CCSS) | Examples, Outcomes, Assessments |
|--|--|
| <p>Students will:</p> <p><i>Operations and Algebraic Thinking</i></p> <p>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.</p> <p>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.</p> <p>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 $5 = 4 + 1$).</p> <p>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.</p> <p>CCSS.Math.Content.K.OA.A.5 Fluently add and subtract within 5.</p> | <p style="text-align: center;">have the same value.</p> <p style="text-align: center;">Examples, Outcomes, Assessments</p> <p>Instructional Strategies:</p> <ul style="list-style-type: none"> • Solving stories about joining (adding) and separating/taking away (subtracting). • Using the plus and minus signs. • Finding sums and differences and writing the corresponding number sentences. • Making numbers 4-10 (number combinations) and writing the corresponding number sentences. <p>Sample Assessments</p> <ul style="list-style-type: none"> • Allow the students to solve various addition and subtraction number stories on white boards (draw the story, write the number sentence, etc.). • Allow the students to use objects to solve addition and subtraction number stories and record the number sentence. • Play the “hand game” with individual students to assess for number combinations/making numbers. (i.e. Teacher says, “I’m showing you six counters.” <i>Allow student to count the six counters. Then, the teacher hides some of the counters behind her back, showing only part of the number combination.</i> Teacher asks the student, “How many counters am I hiding?”) • Orally ask individual students to solve addition and subtraction facts to five mentally and with fluency. • Chapters 5-6: Show What You Know (pre-assessments), Mid-Chapter Checkpoints, and Tests <p>Interdisciplinary Connections</p> <ul style="list-style-type: none"> • Art – Draw pictures to solve number stories. |

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- Social Studies – Illustrate holiday themed number stories.
- Literacy – Read stories which represent the concepts of joining and taking away, write class-wide number stories through interactive or shared writing.
- Literacy – Create a class subtraction story based on the book, Who Stole the Cookie from the Cookie Jar?
- Movement – Use student bodies to act out and solve number stories.
- Movement – Play the “Number Sentence Shuffle.” On large index cards create the pieces to a number sentence (i.e. $3+2=5$). Invite five students to the front of the room and have each student hold one piece of the number sentence. The students work as a team to order the pieces in a way that will make a correct number sentence. The goal is to “shuffle” the sentence as many ways as possible so it still reads true. (i.e. $2+3=5$, $3+2=5$, $5=2+3$, $5=3+2$).
- Movement – Play subtraction bowling. Students take turns bowling while the remainder of the class records the number sentence for each bowler’s turn.
- Movement – Play the “Tens Dance.” Create two sets of numbers 0-10. Split the class in half and have the students stand in two lines facing one another (with space in between the lines). Randomly distribute one set of the number cards to one line and the second set to the other line. Students take turns finding their “dance partners” by finding the person holding the number that makes a total of ten when combined with their own number.
- Play/Fine Motor – Students play “The Train Game” in partnerships. For addition only, play “The Growing Train.” Each partner creates a train of five cubes to start. Partners take turns rolling and add that many cubes to their trains. For subtraction only, play “The Disappearing Train.” Each partner creates a train of 20 cubes to start. Partners take turns rolling and take away that many cubes from their trains. To play with addition and subtraction

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combined, create +/- dice. Each partner creates a train of 10 cubes to start. Partners take turns rolling and follow the direction on the die.

Technology Integration

- Use Pixie to create and illustrate number stories.
- http://www.pbs.org/parents/earlymath/prek_games.html.
- Choose from a variety of number stories to read along with and solve at: <http://www.turtlediary.com/kindergarten-games/math-games/math-story.html>.
- Color-by-addition:
http://www.softschools.com/coloring_games/coloring_umbrellaad_d.jsp.
- Fishing subtraction game:
http://www.softschools.com/math/games/fishing_sub.jsp.
- Math on the Spot videos and Go Math! Interactive Student Edition @ <http://www-k6.thinkcentral.com/ePC/start.do>

Global Perspectives

21st Century Skills:

Creativity and Innovation
Critical Thinking and Problem Solving
Communication and Collaboration
Information Literacy
Media Literacy
Life and Career Skills

- Answer questions such as -
 - What jobs use these skills?
 - How do your parents use these skills?

21st Century Themes (as applies to content area):

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| | |
|--|---|
| | Financial, Economic, Business, and Entrepreneurial Literacy Civic Literacy Health Literacy |
|--|---|

Unit Description: Numbers 11-19
 GO Math! Chapter 7

| | |
|---|---|
| Domain: **Number and Operations in Base Ten K.NBT Counting and Cardinality K.CC | |
| Big Ideas: <i>Course Objectives / Content Statement(s)</i> Number and Operations in Base Ten K.NBT | |
| <ul style="list-style-type: none"> • <i>Work with numbers 11-19 to gain foundations for place value.</i> | |
| Counting and Cardinality K.CC | |
| <ul style="list-style-type: none"> • <i>Know number names and the count sequence.</i> | |
| Essential Questions <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> | Enduring Understandings <i>What will students understand about the big ideas?</i> |

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| <ul style="list-style-type: none"> • How can I compose numbers 11-19 by using a group of ten and some more? • How can I decompose numbers 11-19 by taking out a group of ten and some more? • How can we use number patterns to help us? • Why do we count? • How do we show how many? (i.e. number name, symbol, with objects, etc.) | <p>Students will understand that...</p> <ul style="list-style-type: none"> • The base ten numeration system is a scheme for recording numbers using digits 0-9, groups of ten, and place value. • Mathematics content and practices can be applied to solve problems. • Numbers can be used for different purposes, and numbers can be classified and represented in different ways. |
| <p>Areas of Focus: Proficiencies (CCSS)</p> | <p>Examples, Outcomes, Assessments</p> |
| <p>Students will:</p> <p><i>Number and Operations in Base Ten</i></p> <p>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 (such as $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.</p> <p><i>Counting and Cardinality</i></p> <p>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).</p> | <p>Instructional Strategies:</p> <ul style="list-style-type: none"> • Making numbers 11-19 (beginning with a group of ten and adding some ones) • Creating sets to 19 • Identifying parts of numbers 11-19 (pulling out a group of ten and counting the ones leftover) • Ordering numbers 10-20 <p>Sample Assessments</p> <ul style="list-style-type: none"> • Ask students to create numbers 11-19 in random order using ten-frames. • Ask students to take apart numbers 11-19 in random order using ten-frames. • Students independently write numbers 0-20 in order from memory. • Students write numbers 0-20 in random order and draw corresponding circles to show how many. • Chapter 7: Show What You Know (pre-assessment), Mid-Chapter Checkpoint, and Test <p>Interdisciplinary Connections</p> |

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- Literacy – Read stories that focus on teen numbers and how they are composed (i.e. Let's Count Critters).
- Calendar – Count the days of school; looking at place value.
- Fine Motor – Build teen numbers beginning with a cube tower of ten and then adding some ones, break apart cube towers containing 11-19 cubes by separating the group of ten and ones.
- Art/Social Studies – Students draw or paint a picture representing a teen number by using two colors; one color represents the group of ten and the other represents the additional ones. (i.e. For Valentine's Day, a student might draw 10 hearts using red and 4 hearts using yellow to represent the number 14. $10 + 4 = 14$)
- Movement – Students work in partnerships to create teen numbers with their fingers (one student acts as the "10" and the other student acts as the "ones").
- Movement/Play – Students can play "I Have, Who Has?" teen numbers.
- Play – Students play the "Teen Number Game" in partnerships. Create double ten-frame mats and teen number dice. Each partnership receives 2 double ten-frame mats, one teen die, tiles, and 10 pop sticks ("scoring sticks"). Each partner rolls the die and builds the teen number rolled on his/her mat. The partner with the greater teen number takes a scoring stick. As students realize that for each teen number they must fill-in a whole ten frame first, students can use a stamper to mark the first ten-frame so that it is permanently full.
- Play – Students can play "Teen Number Memory" in partnerships by matching the numeral to its composition using the double ten-frame.

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Technology Integration

- Multiple Tens Frame Game (numbers 10-20):
<http://www.fuelthebrain.com/Interactives/app.php?ID=29>
- Math on the Spot videos and Go Math! Interactive Student Edition @ <http://www-k6.thinkcentral.com/ePC/start.do>

21st Century Skills:

Creativity and Innovation
Critical Thinking and Problem Solving
Communication and Collaboration
Information Literacy
Media Literacy
Life and Career Skills

21st Century Themes (as applies to content area):

Financial, Economic, Business, and
Entrepreneurial Literacy
Civic Literacy
Health Literacy

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Content Area: Math

Unit Description: Numbers to 20 and Beyond
GO Math! Chapter 8

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|---|---|
| Domain: **Counting and Cardinality K.CC | |
| Big Ideas: <i>Course Objectives / Content Statement(s)</i> Counting and Cardinality K.CC <ul style="list-style-type: none"> • <i>Know number names and the count sequence.</i> • <i>Count to tell the number of objects.</i> • <i>Compare Numbers</i> | |
| Essential Questions <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> | Enduring Understandings <i>What will students understand about the big ideas?</i> |
| <ul style="list-style-type: none"> • Why do we count? • Why do we skip count? • How do we show how many? (i.e. number name, symbol, with objects, etc.) • How can we compare and contrast numbers? • What does “more/greater,” “less/fewer” and “same/equal” mean? • How do we order numbers? • How can we use number patterns to help us? | Students will understand that... <ul style="list-style-type: none"> • Numbers help us understand the world around us. • Numbers can be used for different purposes, and numbers can be classified and represented in different ways. • Mathematics content and practices can be applied to solve problems. • Numbers, expressions, measures and objects can be compared and related to other numbers, expressions, measures and objects in different ways. • The set of real numbers is infinite and ordered. Whole numbers, integers, and fractions are real numbers. Each real number can be associated with a unique point on the number line. • Relationships can be described and generalizations made for |

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Grade Level: K
Content Area: Math

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| | mathematical situations that have numbers or objects that repeat in predictable ways. |
| Areas of Focus: Proficiencies (CCSS) | Examples, Outcomes, Assessments |
| <p>Students will: <i>Counting and Cardinality</i></p> <p>CCSS.Math.Content.K.CC.A.1 Count to 100 by ones and by tens.</p> <p>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).</p> <p>CCSS.Math.Content.K.CC.A.3 Write numbers from 0 to 20.</p> <p>Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).</p> <p>CCSS.Math.Content.K.CC.B.4a 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.</p> <p>CCSS.Math.Content.K.CC.B.4b 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.</p> <p>CCSS.Math.Content.K.CC.B.4c Understand that each successive number name refers to a quantity that is one larger.</p> <p>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.</p> <p>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</p> | <p>Instructional Strategies:</p> <ul style="list-style-type: none"> • Continue tracking the number of days in school (calendar math) • Reinforcing counting principals through multi-sensory methods • Counting zero to 20 (in different arrangements) • Reading zero to 20 • Writing zero to 20 • Comparing and ordering numbers zero to 20 • Counting forward to twenty from any given number • Counting to 100 by ones • Counting groups of ten • Identifying patterns on the hundred chart <p>Sample Assessments</p> <ul style="list-style-type: none"> • Students answer the question “How many are there?” by counting objects in a set. (The set should contain between 10 and 20 objects.) • Students write the numerals zero to 20 and use the written numerals zero to 20 to represent the amount within a set. For example, if the student has counted 19 objects, then the written numeral “19” is recorded. • Students order number cards 0-20 when presented in random order by the teacher. • Students count by ones as high as they are able. • Students count by tens as high as they are able. • Students identify a pattern on the hundreds chart by coloring |

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Content Area: Math

of objects in another group, e.g., by using matching and counting strategies.¹

[CCSS.Math.Content.K.CC.C.7](#) Compare two numbers between 1 and 10 presented as written numerals.

the pattern of their choice and explaining their reasoning.

- Chapter 8: Show What You Know (pre-assessment), Mid-Chapter Checkpoint, and Test

Interdisciplinary Connections

- Literacy/Social Studies/Art – To practice the teen numbers (and review the composition of teen numbers) students create illustrations to go along with Ten Apples Up On Top. Students draw themselves with one hand straight out. Each student chooses a teen number for the number of apples in his/her illustration. Using a dot marker, each student makes 10 apples on top of his/her head and the remaining apples on his/her hand. Students write the sentence, “I have ___ apples up on top” to accompany the picture. (Read Across America)
- Social Studies – Count the number of U.S. presidents using photos. (President’s Day)
- Science – During the Balls and Ramps science unit, students experiment with bouncing balls by counting and recording how many times various balls bounce when dropped from waist height.
- Fine Motor – Students find a “mystery picture” in a 50 or 100 grid by coloring the numbers listed.
- Play – Students play “Rolling for 50” in partnerships. Each partnership will need a 1-50 number grid, a die, and two game pieces. Each partner rolls, moves his/her piece that many spaces along the grid, and says the name of the number he/she lands on.
- Play/Fine Motor – Teacher creates number grid puzzles by cutting up hundred grids copied on card stock. Students can complete the number grid puzzles independently or with a partner.
- Play – Students play “Target Number” as a whole class.

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Teacher decides what the class will practice counting during the game. For instance, the class might practice counting from 25-40. The final number (in this case – 40) would be the target number. The class stands in a circle and goes around counting from 25-40. The student that counts “40” would sit down because it is the target number. The next student would begin again at 25. Play until only one student is left standing. Target Number can also be played with counting by tens.

Technology Integration

- Use the stamp tool on Pixie to create and label sets of pictures to 20.
- http://www.abcya.com/one_hundred_number_chart_game.htm
- For math challenges pertaining to this chapter, go to the following website and choose Grade 1: Counting.
http://www.adaptedmind.com/landing-responsivev13jsfix.php?utm_expid=33853517-85.V0f5r4LxRaWgDNF62qJDJg.1&utm_referrer=http%3A%2F%2Fwww.adaptedmind.com%2Fpgamev100.php%3FtagId%3D6
- Math on the Spot videos and Go Math! Interactive Student Edition @ <http://www-k6.thinkcentral.com/ePC/start.do>

Global Perspectives

21st Century Skills:

- Creativity and Innovation
- Critical Thinking and Problem Solving
- Communication and Collaboration
- Information Literacy
- Media Literacy
- Life and Career Skills

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| | <ul style="list-style-type: none">• Answer questions such as: What jobs use these skills? How might you use these skills in everyday life? <p>21st Century Themes (as applies to content area): Financial, Economic, Business, and Entrepreneurial Literacy Civic Literacy Health Literacy</p> |
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Summit Public Schools Summit, New Jersey
Grade Level: K
Content Area: Math

Unit Description: Identifying and Describing Shapes
 (2-Dimensional and 3-Dimensional)
 GO Math! Chapters 9-10

| Standard **Geometry K.G | |
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| Big Ideas: <i>Course Objectives / Content Statement(s)</i> Geometry K.G <ul style="list-style-type: none"> • <i>Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).</i> • <i>Analyze, compare, create, and compose shapes.</i> | |
| Essential Questions <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> | Enduring Understandings <i>What will students understand about the big ideas?</i> |
| <ul style="list-style-type: none"> • How can we describe shapes? • What is the difference between two-dimensional and three-dimensional shapes? • Where do we see shapes in our world? • How can we use shapes to problem-solve? • How can we describe the position of objects? • How can we combine shapes to make other shapes? | Students will understand that... <ul style="list-style-type: none"> • Two and three-dimensional objects with or without curved surfaces can be described, classified and analyzed by their attributes. An object's location in space can be described quantitatively. • Mathematics content and practice can be applied to solve problems. Doing mathematics involves a variety of processes including problem solving, reasoning, communicating, connecting, and representing. • Numbers, expressions, measures and objects can be compared and related to other numbers, expressions, measures and objects in different ways. |
| Areas of Focus: Proficiencies (CCSS) | Examples, Outcomes, Assessments |
| Students will: | |

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| <p><i>Geometry</i></p> <p>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 <i>above</i>, <i>below</i>, <i>beside</i>, <i>in front of</i>, <i>behind</i>, and <i>next to</i>.</p> <p>CCSS.Math.Content.K.G.A.2 Correctly name shapes regardless of their orientations or overall size.</p> <p>CCSS.Math.Content.K.G.A.3 Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).</p> <p>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).</p> <p>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.</p> <p>CCSS.Math.Content.K.G.B.6 Compose simple shapes to form larger shapes. <i>For example, “Can you join these two triangles with full sides touching to make a rectangle?”</i></p> | <p>Instructional Strategies:</p> <ul style="list-style-type: none">• Identifying and describing two-dimensional shapes: rectangles, squares, circles, triangles, and hexagons• Identifying and describing three-dimensional shapes: cubes, cones, cylinders, and spheres• Identifying flat surfaces of solid figures• Identifying and using position words: above, below, beside, next to, in front of, behind, on, inside, outside, left, and right• Creating two-dimensional and three-dimensional shapes• Making shapes from other shapes• Comparing solid figures• Building with solid figures <p>Sample Assessments</p> <ul style="list-style-type: none">• Ask students to name the 2D and 3D shapes covered within the lessons.• Ask students to use pattern blocks to create shapes from other shapes. (i.e. “Use triangles to create a hexagon.”)• Ask students to describe the difference between 2D and 3D shapes.• Present students with real-life examples of shapes and ask them to identify whether they are 2D or 3D.• Chapters 9-10: Show What You Know (pre-assessments), Mid-Chapter Checkpoints, and Tests <p>Interdisciplinary Connections</p> <ul style="list-style-type: none">• Literacy – Read books about two-dimensional and three-dimensional shapes.• Art – Use pattern block templates to create “shape monsters” or any picture of choice.• Fine Motor - Use cookie cutters to cut various shapes out of play- |
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dough.

- Fine Motor – Use straws to create 2D shapes and/or use mini-marshmallows and toothpicks to create 3D shapes.
- Movement – Use student bodies to form various shapes; play Simon Says using positional words
- Social Studies – Identify shapes of various street signs in our everyday word.
- Social Studies – Create a 3D “shape museum” by having students bring items from home that are examples of three-dimensional objects.
- Science – Use 2D and 3D shapes to create an anatomically correct ant.
- Building – Students use pattern blocks to build animals, children work in teams to create something with 3D shapes (i.e. castles, buildings, etc.), and present to the class.
- Multi-sensory/Science – Play the “Shapes By Feel” game in partnerships. Place various shapes in a brown bag. One partner closes his/her eyes while the other partner places a shape in his/her hands. The person with his/her eyes closed uses sense of touch to figure out what shape he/she is holding. Can also be played by placing two of each shape in the brown bag and having students pull one shape out and then use their sense of touch to find its match.
- Play – Students play “I Have, Who Has?” shapes as a whole-class.

Technology Integration

- www.abcya.com/shapes_geometry_game.htm
- Math on the Spot videos and Go Math! Interactive Student Edition @ <http://www-k6.thinkcentral.com/ePC/start.do>

Media Literacy Integration

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Grade Level: K
Content Area: Math

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| | <ul style="list-style-type: none">• Use internet, magazines, catalogs, newspaper, etc. for a scavenger hunt of 2D & 3D shapes <p>Global Perspectives</p> <ul style="list-style-type: none">• View and discuss art from around the world, and identify 2D and 3D shapes within the artwork. <p>21st Century Skills:</p> <ul style="list-style-type: none">Creativity and InnovationCritical Thinking and Problem SolvingCommunication and CollaborationInformation LiteracyMedia LiteracyLife and Career Skills <ul style="list-style-type: none">• Answer questions such as: Why is it important to be able to name and identify shapes in real life? <p>21st Century Themes (as applies to content area):</p> <ul style="list-style-type: none">Financial, Economic, Business, and Entrepreneurial LiteracyCivic LiteracyHealth Literacy |
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Summit Public Schools Summit, New Jersey
Grade Level: K
Content Area: Math

Unit Description: Measuring, Classifying and Sorting
GO Math! Chapters 11-12

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| Domain: **Measurement and Data K.MD | |
| Big Ideas: <i>Course Objectives / Content Statement(s)</i> Measurement and Data K.MD <ul style="list-style-type: none"> • <i>Describe and compare measurable attributes.</i> • <i>Classify objects and count the number of objects in each category.</i> | |
| Essential Questions <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i> | Enduring Understandings <i>What will students understand about the big ideas?</i> |
| <ul style="list-style-type: none"> • Why do we measure? • What is an attribute? • How can we compare objects using attributes? • How can we solve a problem beginning with a “good guess?” • What does it mean to sort? How can we use attributes to sort objects in different ways? • What do graphs tell us? Why do we use graphs? | Students will understand that... <ul style="list-style-type: none"> • Numbers, expressions, measures and objects can be compared and related to other numbers, expressions, measures and objects in different ways. • Mathematics content and practiced can be applied to solve problems. • Two and three-dimensional objects with or without curved surfaces can be described, classified and analyzed by their attributes. • Some questions can be answered by collecting and analyzing data and the question to be answered determines the data that needs to be collected and how best to collect it. Data can be represented visually using tables, charts, and graphs. The type of data determines the best choice of visual representation. |

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| Areas of Focus: Proficiencies (CCSS) | Examples, Outcomes, Assessments |
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| <p>Students will:</p> <p><i>Measurement and Data</i></p> <p>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.</p> <p>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. <i>For example, directly compare the heights of two children and describe one child as taller/ shorter.</i></p> <p>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.</p> | <p>Instructional Strategies:</p> <ul style="list-style-type: none"> • Describing objects by more than one attribute • Comparing objects by length, height, and weight • Identifying same and different • Sorting by one or more attributes • Sorting the same set of objects in different ways • Representing data on real graphs and picture graphs <p>Sample Assessments</p> <ul style="list-style-type: none"> • Show students various objects, and ask them to identify which object is: longer, shorter, heavier, lighter, etc. • Ask students to sort the same set of objects in more than one way. (i.e. Buttons can be sorted by color, shape, number of holes, etc.) • Present students with attribute blocks and ask them to sort by various attributes. • Present students with an already created graph. Ask students to identify information represented on the graph. (i.e. This is a graph about a group of students’ favorite pets. Which pet was chosen by the most students? Which pet was chosen by the least amount of students? Are there any pets that were chosen by an equal amount of students?) • Chapters 11-12: Show What You Know (pre-assessments), Mid-Chapter Checkpoints, and Tests <p>Interdisciplinary Connections</p> <ul style="list-style-type: none"> • Literacy – Read measurement, sorting and graphing read-alouds. • Social Studies/Science – Students can cut out pictures of farm animals and put them in order based on weight or height. |

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Grade Level: K
Content Area: Math

(Farm/Chicks)

- Art/Fine Motor – Give a set time limit to create a paper chain. Have students compare the lengths of the chains created.
- Movement – Have all students stand at a set starting point. Allow each student to jump, and then mark the place he/she landed. Compare the lengths of the jumps.
- Movement – Create human body graphs to display various data collections and/or use student bodies to group students by different attributes. Students may guess which attribute students are grouped by.
- Movement – Have students remove their shoes and place them in the center of a circle. Mix them up. Work together to sort the shoes by various attributes.
- Play – Play the “Attribute Roll” by using the attribute blocks and three dice (one with number of sides, one with larger/smaller and one with color names). Students roll all three dice at one and choose a block that matches all three attributes.
- Play/Critical Thinking – Students play the “Attribute Train” as a whole class. Students sit in a circle. Teacher distributes one attribute block to each student and places one block in the center to start the “train.” A student may add his/her shape to the train if the shape is different by only one attribute than the last shape put down.

Technology Integration

- Use Pixie to create graphs using the stamp tool.
- Practice sorting, counting and comparing numbers with funny little Fuzz Bugs at:
www.abcya.com/counting_sorting_comparing.htm
- Math on the Spot videos and Go Math! Interactive Student Edition @ <http://www-k6.thinkcentral.com/ePC/start.do>

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| | <p>Global Perspectives</p> <ul style="list-style-type: none"> • Graph family traditions. • Draw pictures of family members (including pets) by height. <p>21st Century Skills:</p> <p>Creativity and Innovation Critical Thinking and Problem Solving Communication and Collaboration Information Literacy Media Literacy Life and Career Skills</p> <ul style="list-style-type: none"> • Answer questions such as: What jobs use these skills? How might you use these skills in everyday life? <p>21st Century Themes (as applies to content area):</p> <p>Financial, Economic, Business, and Entrepreneurial Literacy Civic Literacy Health Literacy</p> |
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| Concept or Chapter | Resources for Enrichment |
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| <p>First Day Activity: MP2,MP4 <u>What's my number?</u> Students choose 3 numbers that have a connection to their lives. The rest of the class tries to guess the significance of the number. Teachers & other adults can model the first few. Examples: 3 (I have 3 siblings). 4 (have visited 4 states). 27 (I was born on the 27th).</p> | <p>http://3rdgradelearners.blogspot.com/2011/07/back-to-school-math-activity.html Students can use paper or plastic numerals or counters to show their numbers.</p> <p>http://new-to-teaching.blogspot.com/2011/11/math-icebreakers.html Math About Me</p> <p>Both activities can be made into a display.</p> |

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| <p>K.OA.A3, K.OA.A4, K.OA.A5 A deck of 40 cards is required—four each of cards numbered 1 to 10. (A deck of playing cards with the face cards removed works well.) To play, students deal seven cards face up in a row. They remove all 10s, either individual cards with 10 on them or pairs of cards that add to 10. Each time players remove cards, they replace them with cards from the remaining pack. When it's not possible to remove any more cards, they deal a new row of seven cards on top of the ones that are there. The game ends when it's no longer possible to make 10s or all of the cards are used up.</p> | <p>http://www.mathsolutions.com/wp-content/uploads/winwin_mathgames.pdf Can be a game of solitaire.</p> |
| <p>K.MD.A1,2, K.MD.B3 Encourage students to bring in collections they may have (rocks, shells, stamps). The class can observe the objects, compare and sort them into groups that “go together”.</p> <p>K.G.B4 Two interactive sorting tasks that encourage specific math vocabulary: Sorting Shapes Sorting Numbers</p> | <p>Family Math for Young Children, Coates & Stenmark, p.138-49. (attach)</p> <p>nrich.maths.org/5997 nrich.maths.org/5998</p> |
| <p>K.CC.A,B,C Students take a pinch of kidney beans from a small bag and count. They record on a chart if if their pinch had fewer, more or exactly ten using tally marks. Repeat ten times and write about the results. Can students get better at pinching exactly ten?</p> | <p>Pinch a 10, About Teaching Mathematics, Marilyn Burns, p.355. (attach)</p> |

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| Concept or Chapter | Resources for Support |
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| Chapter 1: Represent, Count, and Write Numbers 0 to 5 | <p>I Can Write My Numbers: http://www.kindergartenworks.com/filing-cabinet/monster-numbers/ This resource can be used for numbers 1 – 10 Another number poem: https://debbiediller.wordpress.com/2011/09/09/poetry-friday-a-math-poem/</p> <p>http://www.k-5mathteachingresources.com/support-files/missing-number-game.pdf</p> <p>http://www.k-5mathteachingresources.com/support-files/dice-race.pdf</p> <p>http://www.k-5mathteachingresources.com/support-files/five-frame-match.pdf</p> |
| Chapter 2: Compare Numbers | <p>Who has More/Less: http://www.k-5mathteachingresources.com/support-files/who-has-more.pdf</p> <p>http://www.k-5mathteachingresources.com/support-files/greater-than-less-than.pdf</p> <p>Number Gators (Greater Than, Less Than Symbols Song) by Brainzy Games by Education.com on You tube</p> |
| Chapter 3: Represent, Count and Write Numbers 6 to 9 | <p>Play Doh number mats: http://www.kindergartenworks.com/filing-cabinet/monster-numbers/ This resource can be used for all numbers Monster Memory Game: Themeasuredmom.com Clothespin Number and Letter Match up Game: teachmama.com Birthday Candle Game http://www.abcya.com/kindergarten_counting.htm</p> <p>http://www.k-5mathteachingresources.com/support-files/playdough-numbers.pdf</p> |
| Chapter 4: Represent and Compare Numbers to 10 | <p>Math Towers http://www.kindergartensmarts.com As you make the towers, you can begin to compare them Raceway Number Value Jr. http://www.abcya.com/comparing_number_values_jr.htm</p> <p>http://www.k-5mathteachingresources.com/support-files/build-five-towers.pdf</p> |

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| Chapter 5: Addition | <p>The Missing Addend Ladybug flip cards http://www.themeasuredmom.com/missing-addend-activity-ladybug-flip-cards Fishing Math Game http://buggyandbuddy.com/fishing-math-game great for number identification and adding http://www.k-5mathteachingresources.com/support-files/addition-plate.pdf http://www.k-5mathteachingresources.com/support-files/domino-addition.pdf</p> |
| Chapter 6: Subtraction | <p>Pete the Cat and His Four Groovy Buttons http://buggyandbuddy.com/math-game-kids-pete-cat/ http://www.k-5mathteachingresources.com/support-files/bears-in-the-cave.pdf</p> |
| Chapter 7: Represent, count, and Write 11 to 19 | <p>I Have Who Has Number games http://www.prekinders.com/i-have-who-has-numbers-game/ Number Bingo http://www.abcya.com/number_bingo.htm This game has a range of numbers to choose from http://www.k-5mathteachingresources.com/support-files/fill-the-frames-1-20.pdf http://www.k-5mathteachingresources.com/support-files/nearby-teen-numbers.pdf</p> |
| Chapter 8: Represent, count, and Write 20 and Beyond | <p>Count and Connect the Dots to 20 http://www.abcya.com/connect_the_dots_20.htm http://www.k-5mathteachingresources.com/support-files/nearby-numbers-2digits.pdf http://www.k-5mathteachingresources.com/support-files/cross-the-decade.pdf</p> |
| Geometry and Positions | |
| Chapter 9: Identify and Describe Two- Dimensional Shapes | <p>Shape Hunt Game: identify target shape/shapes and children look around class or school for these shapes. Shape Construction http://www.abcya.com/shapes_geometry_game.htm</p> |

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| | http://www.k-5mathteachingresources.com/support-files/pattern-block-barrier-game.pdf |
| Chapter 10: Identify and Describe Three-Dimensional Shapes | <p>Secret Bag: place several three- dimensional shapes into the bag. Students put their hand in and using only touch, identify the shape.</p> <p>http://www.k-5mathteachingresources.com/support-files/3d-shape-sort-cards.pdf</p> |
| Measurement and Data | |
| Chapter 11 Measurement | <p>Use unifix cubes to measure items around the room Give each child a length of string. Have them find objects that are greater, less, or equal to it.</p> <p>http://www.k-5mathteachingresources.com/support-files/is-it-longer.pdf</p> <p>http://www.k-5mathteachingresources.com/support-files/comparing-towers.pdf</p> |
| Chapter 12: Classify and Sort Data | <p>Fuzz Bugs http://www.abcya.com/counting_sorting_comparing.htm Sorting Bags: put together several lunch size bags with various items. Student takes out items and uses classifying skills to sort. Extend this by graphing the data</p> <p>http://www.k-5mathteachingresources.com/support-files/sort-and-count.pdf</p> |