Richmond Public Schools

Curriculum Framework

Grade K

Strand: Number and Number Sense	
K.1 The student will **a) tell how many are in a given set of 20 or fewer objects by counting orally; and** **b) read, write, and represent numbers from 0 through 20.**	
Suggested Pacing	
1st Nine Weeks	
Related Spiraling Standards	
	1.1 The student will a) count forward orally by ones to 110, starting at any number between 0 and 110; b) write the numerals 0 to 110 in sequence and out-of-sequence
Essential Questions	**Common Misconceptions**
● What words can we use to count a set of objects? ● How do we count to find a quantity? ● How do we write a numeral to show how many? ● How can we be careful not to count something more than once? ● How can we prove that the total number doesn't change if we rearrange the objects in a set?	Students may become confused when writing the numbers from 10 to 20, due to their names (twelve, fifteen, etc.) Students may lack one-to-one correspondence therefore counting objects more than once or not touching one object for each number said.
Understanding the Standard	**Essential Knowledge and Skills**
● There are three developmental levels of counting: - rote sequence; - one-to-one correspondence; and	The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

- the cardinality of numbers. ● Counting involves two separate skills: verbalizing the list (rote sequence counting) of standard number words in order ("one, two, three, ") and connecting this sequence with the objects in the set being counted, using one-to-one correspondence. Association of number words with collections of objects is achieved by moving, touching, or pointing to objects as the number words are spoken. Objects may be presented in random order or arranged for easy counting. ● When counting objects, students should: - Say the number names in standard order; - Count one item for each number word (one-to-one correspondence); - Understand that the number of objects is the same regardless of their arrangement or the order in which they were counted (conservation of number); - Understand that the last number names the total amount of objects counted (cardinality); and - Understand that each successive number name refers to a quantity that is one larger. ● Cardinality is knowing how many are in a set by recognizing that the last counting word tells the total number in a set. ● After having a student count a collection of objects, the teacher may be able to assess whether the student has cardinality of number by asking the question, "How many are there?" Students who do not yet have cardinality of number are often unable to tell you how many objects there were without recounting them. ● Kinesthetic involvement (e.g., tracing the numerals, using tactile materials, such as sand, sandpaper, carpeting, or finger paint) facilitates the writing of numerals.	● Count orally to tell how many are in a given set containing 20 or fewer concrete objects, using one-to-one correspondence, and identify the corresponding numeral. (a) ● Read, write, and represent numbers from 0-20 to include: ○ Construct a set of objects that corresponds to a given numeral, including an empty set; ○ Read and write the numerals from 0 through 20; ○ Identify written numerals from 0 through 20 represented in random order; ○ Identify the numeral that corresponds to the total number of objects in a given set of 20 or fewer concrete objects; and ○ Write a numeral that corresponds to a set of 20 or fewer concrete objects. (b)

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- If a set is empty, it has zero objects or elements. Zero is both a number and a digit. It is used as a placeholder in our number system.
- Symbolic reversals in numeral writing are common for this age and should not be mistaken for lack of understanding.
- Describing a teen number as a ten and some more, will help students name how many are in a set of 13-19 objects. This also lays a foundation for place value.

</td><td></td></tr>
<tr><td>Vocabulary</td><td rowspan="3">Instructional Activities Organized by Learning Objective</td></tr>
<tr><td>count
set
number
numeral</td></tr>
<tr><td>Assessment</td></tr>
<tr><td>Powerschool – Exam identifier</td><td>

Textbook

a) tell how many are in a given set of 20 or fewer objects by counting orally; and

EnVision Math

- Lesson 4-1, 4-3, 5-1, 5-4, 5-7, 12-1, 12-2, 12-3, 12-4
- Problem of the Day – Lessons 4-1, 4-3, 5-1, 5-4, 5-7, 12-1, 12-2, 12-3, 12-4

Eureka Math

- GRADE K MODULE 1-TOPIC D: The Concept of Zero and Working with Numbers 0-5
- GRADE K MODULE 1-TOPIC E: Working with Numbers 6-8 in Different Configurations
- GRADE K MODULE 1-TOPIC F: Working with Numbers 9-10 in Different Configurations
- GRADE K MODULE 5-TOPIC B: Compose Numbers 11-20 from 10 Ones and Some Ones; Represent and Write Teen Numbers
- GRADE K MODULE 5-LESSON 14: Show, count, and write to answer *how many* questions with up to 20 objects in circular configurations

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	b) read, write, and represent numbers from 0 through 20. **EnVision Math** ● Lesson 4-2, 4-4, 5-3, 5-6, 5-9, 12-1, 12-4 ● Problem of the Day – Lessons 4-2, 4-4, 5-3, 5-6, 5-9, 12-1, 12-4 **Eureka Math** ● GRADE K MODULE 1-TOPIC D: The Concept of Zero and Working with Numbers 0-5 ● GRADE K MODULE 1-TOPIC E: Working with Numbers 6-8 in Different Configurations ● GRADE K MODULE 1-TOPIC F: Working with Numbers 9-10 in Different Configurations ● GRADE K MODULE 5-TOPIC B: Compose Numbers 11-20 from 10 Ones and Some Ones; Represent and Write Teen Numbers ● GRADE K MODULE 5-LESSON 14: Show, count, and write to answer *how many* questions with up to 20 objects in circular configurations **Notes** ● Interactive Notebooks Math Grade K: ○ Number Words and Sets 0 to 5 pg. 12-13 ○ Number Words and Sets 6 to 10 pg. 14-15 ○ Counting Objects 1 to 5 pg. 16-17 ○ Counting Objects 6 to 10 pg. 18-19 ○ Number Order 1 to 10 pg. 20-21 ○ Counting Sets to 20 pg. 24-25 ● Interactive Notebooks Math Grade 1: ○ Reading and Writing Numbers pg. 12-13

Resources

- **Print**
  - Feet Under the Table
  - Printable Instructional Activities/Resources
    - 12 Days of Kindergarten
    - All About the Number
    - Counting Book
    - Fishy Fill Up
    - Numeral Cards 1-20
    - Ten Frame Activities
    - Twenty on the MathRack
    - Ways to Make a Number Station

- **Technology-based**
  - Birthday Candle Counting (b)
  - Counting Fish (b)
  - Monster Mansion - Number Match (b)
  - Turtle Diary Writing Numbers (b)
  - Turtle Diary Learn to Count (a)
  - Turtle Diary Count How Many (b)
  - Turtle Diary Learning Numbers (b)
  - Softschools Learning Numbers (a,b)
  - Softschools Counting Trains (b)
  - Softschools Rabbit Counting Game (b)
  - Softschools Counting With Number Line (b)
  - Flower Garden (a)

Station Activities/Manipulatives

Square Tiles: When given a set of square tiles, the student will use the manipulatives to count 20 or fewer objects orally. (a)

	Insect Counters: When given a set of insect counters, the student will use the counters to count 10 or fewer objects orally while working with a partner. (a) Pet Counters: When given a numeral verbally, the student will use pet counters to construct a set that corresponds to the given numeral. (b) Fruit Counters: When given a set of 20 or fewer fruit counters, the student will count how many orally and write the corresponding numeral. (b) Counting and Sorting Set: When given a set of 20 or fewer counters from the counting and sorting set, the student will orally count how many. (a) Linking Cubes: When given a numeral between 0 and 20 verbally, the student will use linking cubes to construct a train that corresponds to the given numeral. (b) Foam 2-Color Counters: When given a set of 20 or fewer counters, the student will orally count how many and select the corresponding numeral from a selection of numerals. (b)
Cross-Curricular Connections	**Differentiation**

Counting Pencils (Benchmark Unit 9) ***How Many Walruses?*** (Benchmark Unit 2) ***How Many Legs?*** (Benchmark Unit 7) Number Books (Reading A-Z) Bedtime Counting (Reading A-Z) Counting Bugs (Reading A-Z) Counting Letters (Reading A-Z) Maria Counts Pumpkins (Reading A-Z) How Many? (Reading A-Z) **The Twelve Days of Kindergarten: a Counting Book** by Deborah Lee Rose A cumulative **counting** verse in which a child enumerates items in the kindergarten classroom, from the whole alphabet, A to Z, to twelve eggs for hatching. **Number Sequencing Activity** **Click, Clack, Splish, Splash: A Counting Adventure** by Doreen Cronin While Farmer Brown sleeps, some of the animals who live on the farm go on a fishing expedition. **Fishing for Numbers Activity** - adapt as needed **One Boy** by Laura Vaccaro Seeger A boy creates ten paintings in this counting book that also explores the relationship of words within words. Count the objects on each page. **Teeth, Tails, & Tentacles: An Animal Counting Boo**k by Christopher Wormell	K.1a • EnVision Math Differentiated Center Activities Lesson 4-1, 4-3, 5-1, 5-4, 5-7, 12-1, 12-2, 12-3, 12-4 • EnVision Math Reteaching Topic 4 Set A–B and Technology Going Digital, Topic 5 Set A–D and Topic 12 Set A-B • EnVision Math: Leveled Homework – Reteaching, Practice, & Enrichment Master Lessons 4-1, 4-3, 5-1, 5-4, 5-7, 12-1, 12-2, 12-3, 12-4 K.1b • EnVision Math: Differentiated Center Activities Lesson 4-2, 4-4, 5-3, 5-6, 5-9, 12-1, 12-4 • EnVision Math Reteaching Topic Set A–B and Technology Going Digital; Topic 5 Set A–D; and Topic 12 Set A-B • EnVision Math: Leveled Homework – Reteaching, Practice, & Enrichment Master Lessons: Lesson 4-2, 4-4, 5-3, 5-6, 5-9, 12-1, 12-4

A counting book covering the numbers one to twenty with block prints of animals also includes factual information about the animals. **One is a Drummer: A Book of Numbers** by Roseanne Thong **Ten, Nine, Eight** by Molly Bang Count the pictures on the page. **Activity** **Anno's Counting Book** by Mitsumasa Anno Use numerals from the book. **Activity** **Look Whooo's Counting** by Suse Macdonald Identify the hidden numerals. **Every Buddy Counts** by Stuart J. Murphy When a little girl wakes up one morning feeling sad she cheers herself up by counting all of her friends. **Activity** **Fish Eyes: A Book You Can Count On** by Lois Ehlert **Activity** **Feast for 10** by Cathryn Falwell **Activity** **Jack the Builder** by Stuart J. Murphy **Activity**	

Quack and Count by Keith Baker This adventure of seven lively little ducks who slip, slide, leap, and dive will keep little ones wanting to **count** again and again. **Activity** **So Many Cats!** by Beatrice Schenk de Regniers A counting story in verse shows how easily one sad and lonely cat can turn into twelve.	

Strand: Number and Number Sense	
K.2 The student, given no more than three sets, each set containing 10 or fewer concrete objects, will a) compare and describe one set as having more, fewer, or the same number of objects as the other set(s); and b) compare and order sets from least to greatest and greatest to least.	
Suggested Pacing	
1st Nine Weeks	
Related Spiraling Standards	
	1.2 The student, given up to 110 objects, will

	b) compare two numbers between 0 and 110 represented pictorially or with concrete objects, using the words greater than, less than or equal to; and c) order three or fewer sets from least to greatest and greatest to least.
Essential Questions	**Common Misconceptions**
● How do we compare two sets to tell whether they have the same number of items? ● How can we make a set that has the same number of items as another set? ● What do the words fewer, more, and the same mean? ● How do we know when one set has fewer items than another set? ● How can we make a set that has fewer items than another set? ● How do we know when one set has more items than another set? ● How can we make a set that has more items than another set? ● How can we order three sets of objects from least to greatest? ● How can we order three sets of objects from greatest to least?	Students may forget that *greater* means bigger/more, *least* means fewer. Students may have the misconception that the set that is more spread out has more based on area covered instead of number of objects.
Understanding the Standard	**Essential Knowledge and Skills**
● A set is a collection of objects. ● Sets can be compared by matching, lining up the objects, visually estimating magnitude, recognizing quantities without counting (subitizing), or counting the number of objects in each set. ● Comparing sets is an extension of conservation of number (e.g., 5 is 5 whether it is 5 marbles or 5 basketballs even though 5 basketballs take up more space). When comparing	The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to ● Compare and describe no more than three sets of 10 or fewer objects, using the terms *more*, *fewer*, and the *same*. (a) ● Given a set of objects, construct a second set which has more, fewer, or the same number of objects. (a)

objects, the set can be arranged differently while still containing the same number (e.g., 5 marbles in a cup is the same as 5 marbles on the floor).
- Comparing objects is an extension of cardinality. Cardinality is knowing how many are in a set by recognizing that the last counting word tells the total number in a set.
- Students are generally familiar with the concept of *more*, but may have had little experience with the term *fewer*. It is important to use the terms together to build an understanding of their relationship. For example, when asking which group has more, follow with which group has fewer.

- Compare and order three or fewer sets, each set containing 10 or fewer concrete objects, from least to greatest and greatest to least. (b)

Vocabulary

compare	fewer
more	same
set	order
least	greatest

Assessment

Powerschool – Exam identifier

Instructional Activities Organized by Learning Objective

Textbook

a) compare and describe one set as having more, fewer, or the same number of objects as the other set(s)

EnVision Math
- Lessons 4-7, 6-1 thru 6-5, 16-1
- Problem of the Day – Lessons 6-2 thru 6-5

Eureka Math
- GRADE K MODULE 1 (Topics A, B, G, H)

b) compare and order sets from least to greatest and greatest to least.

EnVision Math
EnVision Math: Lesson 6-1 (vocab: less, not least)

	Envision Math: Problem of the Day – Lessons 6-4 **Eureka Math** ● GRADE K MODULE 1 (Topics A, B, G, H) **Notes** **Resources** ● **Print** o Teaching Student-Centered Mathematics (K-3 2006) ▪ Activity 2.1 pg. 38 Make Sets of More/Less/Same (a) ▪ Activity 2.2 pg. 38 Find the Same Amount (a) o Printable Instructional Activities/Resources ▪ Ordering Sets ▪ Snowman Comparing Sets ● **Technology-based** o Turtle Diary: Few and More o Curious George Catching Bugs **Station Activities/Manipulatives** Foam 2-Color Counters: The student will use the foam 2-color counters to compare and describe one set of 10 or fewer objects as having more, fewer or the same number of objects than a different set (a). Pet Counters: The student will use pet counters in two groups of 10 or fewer objects to compare and order the sets from greatest to least and least to greatest (b).

	Insect Counters: When given a set of ten or fewer insect counters, the student will create a set that has more, fewer, or the same based on the teacher's directions. (a) Square Tiles: When given two sets of square tiles up to 10, the student will compare and order the sets from least (fewer, less) to greatest (more) (b). Fruit Counters: When given three sets of ten or fewer fruit counters, the student will compare and order the sets from greatest to least. (b) Counting and Sorting Set: When given two sets of counters up to 10, the student will compare and describe one set of counters as having more or fewer than the other set (a). Linking Cubes: When given a set of ten or fewer linking cubes, the student will create a set that has more, fewer, or the same based on teacher's directions. (a)
Cross-Curricular Connections	**Differentiation**
One Big Pair of Underwear by Laura Gehl How Many Do You See? (Reading A-Z) **Puppies in the Snow** by James Young Compare puppies to other animals on the pages. **Just Enough Carrots** by Stuart Murphy Use to introduce the language more, same, and fewer. **Just Enough Carrots Activity** **Activity**	K.2a • EnVision Math: Differentiated Center Activities 4-7, 6-4, 6-5, 16-1 • EnVision Math Reteaching Topic 6 Set A–B and Technology Going Digital • EnVision Math: Leveled Homework – Reteaching, Practice, & Enrichment Master Lessons 4-7, 6-1 thru 6-5, 16-1 K.2b • EnVision Math: Differentiated Center Activities 6-1 thru 6-3

More or Less by Stuart Murphy At a school picnic, Eddie uses his knowledge of numbers to outsmart the people who come to his game booth. **Activity** **More, Fewer, Less** by Tana Hoban With every click of the camera, the author zooms in on a new discovery for curious little eyes, from the stacks of brightly colored teacups and racks of shiny new shoes, to a bin of mouth-watering candies, in a lesson on quantities. **More/Less Ten Frame Game** **Miss Spider's Tea Party** by David Kirk Compare the number of fireflies to other insects on the pages. **Activity** **Seaweed Soup** by Stuart J. Murphy Understanding sets is an important step in counting, as well as in learning about patterns. **Activity** **Hannah and the Seven Dresses** by Marthe Jocelyn **One…Two…Three…Sassafras!** by Stuart J. Murphy Learning to arrange numbers in order helps develop counting skills and prepares children to understand our number system. **Activity**	• EnVision Math: Leveled Homework – Reteaching, Practice, & Enrichment Master Lessons 6-1, 6-2 (no Enrichment), 6-3 (Practice only)

Strand: Number and Number Sense	
K.3 The student will **a) count forward orally by ones from 0 to 100;** **b) count backward orally by ones when given any number between 1 and 10;** **c) identify the number after, without counting, when given any number between 0 and 100 and identify the number before, without counting, when given any number between 1 and 10; and** **d) count forward by tens to determine the total number of objects to 100.**	
Suggested Pacing	
3rd Nine Weeks	
Related Spiraling Standards	
	1.1 The student will a) count forward orally by ones to 110, starting at any number between 0 and 110; b) write the numerals 0 to 110 in sequence and out-of-sequence; c) count backward orally by ones when given any number between 1 and 30; and d) count forward orally by ones, twos, fives, and tens to determine the total number of objects to 110.
Essential Questions	**Common Misconceptions**
● How can we use tools to help us count forward to 100? (counters, snap cubes, hundred chart, ten frames, number paths/tracks) ● How can we tools to count backwards by ones from any number between 1 and 10? (counters, snap cubes, hundred chart, ten frames, number paths/tracks)	Students may create the misconception that fifteen and fifty are the same number due to their similar sounding names. This is the same case for numbers thirteen and thirty, fourteen and forty, sixteen and sixty, seventeen and seventy, eighteen and eighty, and nineteen and ninety. It is important to show students the difference between how

<table>
<tr><td>● How can we find the number after a given number between 0 and 100 without counting?
● How can we find the number before a given number between 1 and 10 without counting?
● How can we use tools to count forward by tens starting at 0 to determine a
number of objects? (bundles of tens, ten frames, snap cubes)
● How can patterns help us count to 100? (hundreds chart)
● How can we group objects by 10s and skip count by 10s to find out how many?</td><td>the numbers are written as well as put extra emphasis on the correct pronunciation of each number.</td></tr>
<tr><th>Understanding the Standard</th><th>Essential Knowledge and Skills</th></tr>
<tr><td>● Counting skills are essential components of the development of number ideas; however, they are only one of the indicators of the understanding of numbers.
● Counting forward by rote, supported by visuals such as the hundred chart or number path, advances the child’s development of sequencing.
● The natural numbers are 1, 2, 3, 4. The whole numbers are 0, 1, 2, 3, 4. Students should count the whole numbers 0, 1, 2, 3, 4.
● A number path is a counting model where each number is represented within a square and the squares can be clearly counted.

Example of a Number Path

<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr></table></td><td>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to
● Count forward orally by ones from 0 to 100. (a)
● Count backward orally by ones when given any number between 1 and 10. (b)
● Identify the number after, without counting, when given any number between 0 and 100. (c)
● Identify the number before, without counting, when given any number between 1 and 10. (c)
● Count forward orally by tens, starting at 0, to determine the total number of objects up to 100. (d)</td></tr>
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A number line is a length model where each number represents its length from zero. When young children use a number line as a counting tool, they often confuse what should be counted (the numbers or the spaces between the numbers). A number path is more appropriate for students at this age.

- Counting backward by rote lays the foundation for subtraction. Students should count backward beginning with 10, 9, 8, through 3, 2, 1, 0.
- Counting forward and backward leads to the development of counting on and counting back.
- Connecting rote counting to the counting of collections is necessary for students to understand the meaning of a number.
- Identifying the number after and/or the number before any given numbers demonstrates an understanding of number relationships as opposed to a memorized sequence of numbers.
- Providing experiences in counting beyond 100 will help students who often struggle with going over the century mark.

Vocabulary

count	number
forward	backward
after	before
ones	tens
between	total number

Assessment

Instructional Activities Organized by Learning Objective

Textbook

a) count forward orally by ones from 0 to 100;

Eureka Math

- GRADE K MODULE 5-TOPIC D: Extend the Say Ten and Regular Count Sequence to 100

Powerschool – Exam identifier	*b) count backward orally by ones when given any number between 1 and 10;* **EnVision Math** ● Lesson 12-6, VA-1 (Virginia Handbook T132) **Eureka Math** ● GRADE K MODULE 1-TOPIC G: *One More* with Numbers 0-10 ● GRADE K MODULE 1-TOPIC H: *One Less* with Numbers 0-10 *c) identify the number after, without counting, when given any number between 0 and 100 and identify the number before, without counting, when given any number between 1 and 10* **EnVision Math** ● Lesson 12-6, 12-10 **Eureka Math** ● GRADE K MODULE 1-TOPIC G: *One More* with Numbers 0-10 ● GRADE K MODULE 1-TOPIC H: *One Less* with Numbers 0-10 ● GRADE K MODULE 3-TOPIC F LESSON 23: Reason to identify and make a set that has 1 more.

	● GRADE K MODULE 4-LESSON 37: Add or subtract 0 to get the same number and relate to word problems wherein the same quantity that joins a set, separates ● GRADE K MODULE 4-LESSON 38: Add 1 to numbers 1-9 to see the pattern of *the next number* using 5-group drawings and equations. ● GRADE K MODULE 5-TOPIC A: Count 10 Ones and Some Ones ● GRADE K MODULE 5-TOPIC C: Decompose Numbers 11-20 and Count to Answer "How Many?" Questions in Varied Configurations *d) count forward by tens to determine the total number of objects to 100* **EnVision Math** ● Lesson 12-7 **Eureka Math** ● GRADE K MODULE 5-TOPIC D: Extend the Say Ten and Regular Count Sequence to 100 **Notes** ● Interactive Notebooks Math Grade K: ○ Counting by Tens pg. 26-27 **Resources** ● **Print**

	○ Teaching Student-Centered Mathematics (K-3 2006) ▪ Activity 2.4 pg. 40 Up and Back Counting (a,b) ▪ Integration of Base-Ten Groupings with Counts by Ones pg. 124 (Chapter 5) (d) ▪ The Role of Counting in Constructing Base-Ten Ideas pg. 125-126 (Chapter 5) (d) ▪ Activity 5.2 pg. 130-131 Groups of 10 (d) ▪ Activity 5.4 pg. 133 Odd Groupings (no recording sheet) (d) ○ Printable Instructional Activities/Resources ▪ Three Part Mat ▪ Ten Frames 1-100 ▪ Number Path to 20 ▪ Number Ladder Task Cards ▪ Count by 10 Chart ● **Technology-based** ○ Curious George's Busy Day- Monkey Jump (counts to 40) (a) ○ Number Chart (c) ▪ *When on the Beginner level, the student will identify the number that comes after the teacher chosen number up to 100 without counting.* ▪ *When on the Challenge level, the student will identify the number that comes after the number chosen by the teacher up to 100 without counting.* **Station Activities/Manipulatives**

	Fruit Counters: When given a set of fruit counters, the student will start at 0 and count the counters by tens to the determine the total number of objects up to 50 (d). Linking Cubes: When given a set of linking cubes, the student will count by tens using cubes to determine the total number of objects up to 100 (d). Square Tiles: When given a set of 50 square tiles, the student will count by tens starting at 0 to determine the total number of objects in the set (d). Insect Counters: When given a set of up to 60 insect counters, the student will count by tens starting at 0 to determine the total number of insect counters in the set (d). Pet Counters: When given a set of pet counters, the student will start at 0 and count by tens to determine the total number of pet counters in the set up to 100 (d). Counting and Sorting Set: When given a set of counters from the counting and sorting set, the student will count by tens starting at 0 to determine the total number of counters in the set up to 100 (d).
Cross-Curricular Connections	**Differentiation**

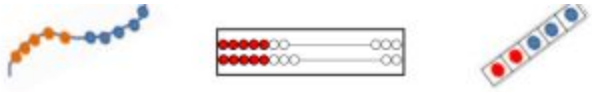
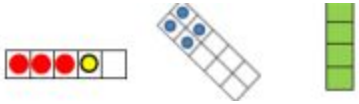
We Count (Reading A-Z) Level C *1-2-3 Peas* by Keith Baker **100 is a Family** by Pam Munoz Ryan Students practice counting to 100 by 1's and 10's. **Pete the Cat and His 4 Groovy Buttons** by Eric Litwin Count backwards or focus on 1 less with Pete the cat and his buttons. **Activity** **One is a snail, ten is a crab: a counting by feet book** by April Pulley Sayre (skip counting) Count to ten and then skip count by 10 to 100. **Activity** **100 Days of School** by Trudy Harris (skip counting) Count to 100 by skip counting by 1,5, 10, and 20. **Starfall 100th Day of school counting book** **Construction Countdown** by K.C. Olson Count back from 10. **Ten, Nine, Eight** by Molly Bang Count back from 10. **Activity** **Five Little Monkeys Jumping on the Bed** by Eileen Christelow Count Down from 5.	K.3b **EnVision Math** • EnVision Math: Differentiated Instruction Lesson 12-6 • EnVision Math: Leveled Homework – Reteaching, Practice, & Enrichment Master Lesson 12-6 K.3c **EnVision Math** • Differentiated Instruction Lesson 12-6 • Leveled Homework – Reteaching, Practice, & Enrichment Master Lesson 12-6 • Reteaching Master Lesson 12-10 K.3d **EnVision Math** • Leveled Homework – Reteaching, & Practice Master Lesson 12-7 (no Enrichment)

Ten Little Fish by Audrey and Bruce Wood Counting back from 10. Use goldfish and have the kids take them away and place in a bag as they count backwards. **Count on Pablo** by Barbara Derubertis Have students count the fruits and vegetables in the story. **Let's Count It Out, Jesse Bear** by Nancy White Carlstrom Count to 20 with the book. Extend it with objects to count to 30. **Quack and Count** by Keith Baker Read the book in reverse to explore one less than. **Activity** **Math Fables** by Greg Tang Describe the illustrations using one more than and one less than. **Leaping Lizard** by Stuart Murphy Start with 50 playing blocks and ask your students (or child) to create groups of 5. How many groups of 5 are there? Then put the groups of 5 together in pairs to make groups of 10. How many groups of 10 are there? This can also be done using smaller objects such as buttons or pennies. **Activity** **One…Two…Three…Sassafras!** by Stuart J. Murphy Learning to arrange numbers in order helps develop counting skills and prepares children to understand our number system.	

Activity **The Robbers Five or Is it Six?** by Maria Van Eeden A not-too-fearsome band of robbers apply their unique approach to thievery-until they meet Six, a young girl who can teach them a thing or two. **12 Ways to Get to 11** by Eve Merriam Is it in the magician's hat? Maybe it's in the mailbox or hiding in the jack-o'-lantern? Don't forget to look in the barnyard where the hen awaits the arrival of her new little chicks. Could that be where eleven went? Eve Merriam and Bernie Karlin take young readers on a counting adventure as they demonstrate twelve witty and imaginative ways to get to eleven. **One Duck Stuck** by Phyllis Root Duck gets stuck in the muck. Count the different animals who come to help the duck get unstuck from the muck **Chicka Chicka 123** by Bill Martin Jr. One hundred and one numbers climb the apple tree. As the numbers pile up and bumblebees threaten one number saves the day.	

Strand: Number and Number Sense
K.4 The student will **a) recognize and describe with fluency part-whole relationships for numbers up to 5; and** **b) investigate and describe part-whole relationships for numbers up to 10.**

Suggested Pacing	
2nd Nine Weeks	
Related Spiraling Standards	
	1.7 The student will a) recognize and describe with fluency part-whole relationships for numbers up to 10; and b) demonstrate fluency with addition and subtraction within 10.
Essential Questions	**Common Misconceptions**
● How can we look at an image and recognize parts of a set up to five without counting? (dot images, rekenreks, tiles, toothpicks, dice) ● How can we use manipulatives to describe parts in set up to five? (five frame, counters, unifix cubes, beads) ● How can we use manipulatives to describe parts in a set for numbers up to ten? (ten frames, five frames, counters, unifix cubes, beads)	Students may have the misconception that each number must be shown one way on the tens frame or other representation. It is important to present students with multiple ways to show each number on the tens frame.
Understanding the Standard	**Essential Knowledge and Skills**
● Computational fluency is the ability to think flexibly in order to choose appropriate strategies to solve problems accurately and efficiently. ● Flexibility requires knowledge of more than one approach to solving a particular kind of problem. ● Being flexible allows students to choose an appropriate strategy for the numbers involved.	The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to ● Recognize and describe with fluency part-whole relationships for numbers up to 5 in a variety of configurations. (a)

• Composing and decomposing numbers flexibly forms a basis for understanding properties of the operations and later formal algebraic concepts and procedures. • Parts of 5 and 10 should be represented in a variety of ways, such as five frames, ten frames, strings of beads, arrangements of tiles or tooth picks, dot cards, or beaded number frames.  • Dot patterns should be presented in both regular and irregular arrangements. This will help students to understand that numbers are made up of parts, and will later assist them in combining parts as well as counting on.  • Numbers can be composed and decomposed using part-part-whole relationships (e.g., 4 can be decomposed as 3 and 1, 2 and 2, 4 and 0).  • Quickly recognizing and naming the number of objects in a small group without counting is called subitizing. The size of the group a student can subitize is dependent upon the arrangement of the dots or objects. At this age, students should subitize regular arrangements up to 5.	• Investigate and describe part-whole relationships for numbers up to 10 using a variety of configurations. (b)

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- When students are able to combine or separate groups to create a number, they are building a foundation for addition and subtraction.
- Benchmarks of 5 and 10 are essential in building place value knowledge through the understanding of decomposition of the numbers of 5 and 10.
- Accuracy is the ability to determine a correct answer using knowledge of number facts and other important number relationships.
- Efficiency is the ability to carry out a strategy easily when solving a problem without getting bogged down in too many steps or losing track of the logic of the strategy being used.
- Mathematically fluent students are not only able to provide correct answers quickly but also to use facts and computation strategies they know to efficiently determine answers they do not know.

</td><td></td></tr>
<tr><td>Vocabulary</td><td rowspan="3">Instructional Activities Organized by Learning Objective

Textbook
a) recognize and describe with fluency part-whole relationships for numbers up to 5; and

EnVision Math
● Topic 4 Math Background for Teachers
● Lesson 4-6

Eureka Math
● GRADE K MODULE 4-TOPIC A: Compositions and Decompositions of 2, 3, 4, and 5</td></tr>
<tr><td>part
whole</td></tr>
<tr><td>Assessment</td></tr>
<tr><td>Powerschool – Exam identifier</td><td></td></tr>
</table>

	b) investigate and describe part-whole relationships for numbers up to 10. **EnVision Math** ● Lesson 5-2, 5-5, 5-8 **Eureka Math** ● GRADE K MODULE 1-TOPIC C: Numbers to 5 in Different Configurations, Math Drawings, and Expressions ● GRADE K MODULE 1-LESSON 14: Write numerals 1-3. Represent decompositions with materials, drawings and equations, 3=2+1 and 3=1+2. ● GRADE K MODULE 1-LESSON 16: Write numerals 1-5 in order. Answer and make drawings of decompositions with totals of 4 and 5 without equations. ● GRADE K MODULE 3-LESSON 7: Compare objects using *the same as*. ● GRADE K MODULE 4: Number Pairs, Addition and Subtraction to 10 **Notes** ● Interactive Notebooks Math Grade K: ○ Decomposing Numbers pg.44-45 ○ Making Ten pg. 58-59 **Resources** ● **Print** o Teaching Student-Centered Mathematics (K-3 2006) ▪ Activity 2.8 pg. 43 Learning Patterns (b) ▪ Activity 2.9 pg. 44 Dot Plate Flash (& Figure 2.5) (a,b) ▪ Activity 2.13 pg. 46 Five-Frame Tell-About (b)

	▪ Activity 2.15 pg. 47 Ten-Frame Flash Cards (b) ▪ Activity 2.16 pg. 48 Build It In Parts (b) ▪ Activity 2.18 pg. 50 Covered Parts (b) ▪ Activity 2.20 pg. 51 I Wish I Had (b) o Printable Instructional Activities/Resources ▪ Domino Dot Cards ▪ Domino Think Addition ▪ Five Frames ▪ I Wish I Had Five Frames ▪ I Wish I Had Ten Frames ▪ Number Trains Recording Sheet ▪ Part Part Whole Anchor Chart ▪ Part Part Whole Sheet ▪ Part Whole Activities ▪ Part Part Whole Organizers ▪ Parts of 5 ▪ Patterned Sets ▪ Raise the Roof ▪ Ten Frame Activities ▪ Under a Rock o Rekenrek Flashcards o How Many Are Hiding ● **Technology-based** o SPLAT 1.1 o SPLAT 1.2 o SPLAT 1.3 o SPLAT 1.4 o SPLAT 1.5 o Curious George Museum of Tens **Station Activities/Manipulatives**

	Base 10 Magnetic Kits: The student will recognize and describe with fluency the part and whole of numbers up to 5 using the unit blocks in the Base 10 magnetic kit in 5 different configurations (a). Foam Base 10s: The student will use the Foam Base 10s to investigate and describe the part-whole relationship of numbers up to 10 in a variety of configurations (b). Foam 2-Color Counters: When given five foam 2-color counters, the student will investigate and describe multiple ways to represent the number five. (three red, two yellow) (a)
Cross-Curricular Connections	**Differentiation**
Ten Black Dots by Donald Crews **Pete the Cat and the Missing Cupcakes** by Kimberly and James Dean Pete had 10 cupcakes but some go missing. Who could have taken his cupcakes? How can you determine the missing parts? **Five Little Monkeys Jumping on the Bed** Written and retold by Eileen Christelow Classic tale of 5 little Monkeys Jumping on the bed. **Five Little Penguins Slipping on the Ice** **by Steve Metzger** Five little penguins slipping on the ice. One fell down--oh no! Now there are only four penguins left! What will Mother penguin do? **Pete the Cat and his Four Groovy Buttons** Eric Litwin Pete starts with 4 buttons. He loses his buttons but he keeps singing his song.	K.4b **Envision Math** • Differentiated Instruction Lesson 5-5 • Leveled Homework – Reteaching, Practice, & Enrichment Master Lesson 5-2, 5-5, 5-8

Monster Math Picnic by Grace Maccarone	

Richmond Public Schools

Curriculum Framework

Grade K

<table>
<tr><th colspan="2">Strand: Number and Number Sense</th></tr>
<tr><td colspan="2">K.5 The student will investigate fractions by representing and solving practical problems involving equal sharing with two sharers.</td></tr>
<tr><th colspan="2">Suggested Pacing</th></tr>
<tr><td colspan="2">4th Nine Weeks</td></tr>
<tr><th colspan="2">Related Spiraling Standards</th></tr>
<tr><td></td><td>1.4 The student will
a) represent and solve practical problems involving equal sharing with two or four sharers; and
b) represent and name fractions for halves and fourths, using models.</td></tr>
<tr><th>Essential Questions</th><th>Common Misconceptions</th></tr>
<tr><td>● Why do the parts of a whole need to be equal when making fair shares?
● How can we share a whole equally with two sharers?
● When do we share equal pieces/ or parts of a whole in our daily lives?</td><td>When sharing a set equally with a partner, students may carry over the concept of each person getting one piece as done when sharing a whole. Therefore giving each person one piece even though there are more pieces to be shared. For example, when given four pieces to share equally with a friend, a student may take one and give one to their friend. The teacher must ask about the remaining pieces and prompt them to share all pieces.</td></tr>
<tr><th>Understanding the Standard</th><th>Essential Knowledge and Skills</th></tr>
</table>

● Practical situations with fractions should involve real-life problems in which students themselves determine how to subdivide a whole into equal parts, testing those parts to be sure they are equal, and using those parts to recreate the whole. ● Fractions can have different meanings: part-whole, division, measurement, ratio, and operator. The focus of this grade level is to develop the idea of equal sharing (division) and part-whole relationships. Fraction notation will be introduced in grade two. ● Young children understand equal sharing problems intuitively because of their experiences sharing objects with siblings, friends, etc. Consider the following examples: – Two children sharing six sandwiches – Two children sharing one sandwich – Two children sharing four brownies For two children sharing one sandwich, a child might say that each will get half of the sandwich. For two children sharing four brownies, a child might say they each will get half of the brownies, while another child might say they will get one of the two pieces. ● Teachers should use vocabulary such as halves. Students may name the parts as halves but may also use language such as "one piece out of the two pieces" to describe half. Students at this level should not be expected to use fraction vocabulary or notation. Informal, integrated experiences with fractions at this level will help students develop a foundation for deeper learning at later grades. Understanding the language of fractions furthers this development.	**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to** ● Share a whole equally with two sharers, when given a practical situation. ● Represent fair shares concretely or pictorially, when given a practical situation. ● Describe shares as equal pieces or parts of the whole (e.g., halves), when given a practical situation.

- Students should be encouraged to create drawings or use concrete objects or other representations to solve problems.
- Fraction models at this level should be able to be continuously divided (e.g., cookies, brownies). It is important to use models that can be continuously divided when there are remainders so those remainders can be cut into as many equal parts as needed.
- In each fraction model, the fractional parts must be equal shares of a whole.
- Equal parts may be different shapes but maintain the same value (e.g., a sandwich could be cut in two equal pieces vertically, horizontally, or diagonally to represent halves).
- The fraction name half tells the number of equal parts in the whole.

Vocabulary

Equal
Parts
Whole
Halves
Fraction
Fair Shares

Assessment

Powerschool – Exam identifier

Instructional Activities Organized by Learning Objective

Textbook

Notes

- Interactive Notebooks Math Grade 1
  - Partitioning Shapes pg. 76-77 (*half* flap book only)

Resources

- **Print**
  - Teaching Student-Centered Mathematics (K-3 2006)
    - Activity 9.1 pg. 257 Correct Shares (only halves)
  - Printable Instructional Activities/Resources
    - Fair Share, Not Fair Share
    - Geoboard Halves Performance Task

<table>
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Fair Share
Fair Share Anchor Chart

Technology-based

Curious George Fair Shares (only section with two dogs, stop when it gets to three dogs)

Station Activities/Manipulatives
Square Tiles: When given a set of square tiles, the student will share equally with a partner.

Fraction Circles: The student will use fraction circles to represent fair shares of a whole.

Fraction Tiles: The student will use fraction tiles to describe halves of a whole.
</td></tr>
<tr><th>Cross-Curricular Connections</th><th>Differentiation</th></tr>
<tr><td>
Give Me Half by Stuart J. Murphy
Discuss dividing things into two equal parts.

When the Doorbell Rang by Pat Hutchins

Apple Fractions by Jerry Pallotta
Discuss dividing things into halves and fourths. Have students practice cutting items in half by drawing on or actually cutting paper.

Eating Fractions by Bruce McMillan
</td><td></td></tr>
</table>

Strand: Computation and Estimation

K.6 The student will model and solve single-step story and picture problems with sums to 10 and differences within 10, using concrete objects.

Suggested Pacing	
2nd Nine Weeks	
Related Spiraling Standards	
	1.6 The student will create and solve single-step story and picture problems using addition and subtraction within 20.
Essential Questions	**Common Misconceptions**
● Join problems involve the process of combining or joining sets or quantities. How do we find the total number when we put together two sets? ● Separate problems can be viewed as a taking away or separating process. How do we find what is left when we separate out part of a set? ● Part-part-whole problems involve two quantities that are combined into one whole but no physical action is required. How do we find the whole when given two parts? How do we find both parts when given the whole?	Students may confuse the vocabulary term *left* when used in different concepts. For example, *how many left* versus *how many are left*. Students may create the misconception that addition is simply counting how many. This will prove problematic when the student enters first grade and is exposed to joining problems with a part unknown. Students may carry over the process for solving addition problems when solving subtraction problems, therefore counting how many in all instead of how many are left.

- How can we use models to solve joining problems?
- How can we use models to solve separating problems?
- How can we use models to solve part-part-whole scenarios?

Understanding the Standard

- Students should experience a variety of problem types related to addition and subtraction.
- The problem types most appropriate for students at this level include:

KINDERGARTEN: COMMON ADDITION AND SUBTRACTION PROBLEM TYPES	
Join (Result Unknown)	Sue had 4 pennies. Josh gave her 2 more. How many pennies does Sue have altogether?
Separate (Result Unknown)	Sue had 8 pennies. She gave 5 pennies to Josh. How many pennies does Sue have now?
Part-Part-Whole (Whole Unknown)	Josh has 4 red balloons and 3 blue balloons. How many balloons does he have?
Part-Part-Whole (Both Parts Unknown)	Josh has 5 balloons. Some of them are red and some of them are blue. How many balloons can be blue and how many can be red?

Essential Knowledge and Skills

The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

- Model and solve various types of story and picture problems using 10 or fewer concrete objects. (Types of problems should include joining, separating, and part-part-whole scenarios.)

• Join problems involve the process of combining or joining sets or quantities. Separate problems can be viewed as a taking away or separating process. Part-part-whole problems involve two quantities that are combined into one whole but no physical action is required. Comparison problems that ask how many more or how many fewer should be reserved for grades one and two. • Operation symbols (+, -) are introduced in grade one. • Single-step refers to the least number of steps necessary to solve a problem. • Number relationships help students develop strategies for addition and subtraction. These strategies include: – Instant recognition of the amount in a set of objects (subitize) that are arranged in a familiar pattern such as the dots on number cubes; and – One more than, one less than, two more than, two less than. • Counting on from the larger set to determine the sum of the combined sets is one strategy for determining a sum.	
Vocabulary	**Instructional Activities Organized by Learning Objective**
Addition Subtraction Add Subtract Join Separate Part Whole Combine	**Textbook** **EnVision:** ***Addition*** • Lesson 4-6, 10-1 thru 10-7, Lessons 4-6, 10-1 thru 10-3 • Differentiated Center Activities Lesson 4-6, 10-1 thru 10-7, Lessons 10-1 thru 10-3

Assessment	
Powerschool – Exam identifier	• Leveled Homework – Reteaching, Practice, & Enrichment Master Lesson 4-6, 10-1 thru 10-7, Lessons 4-6, 10-1 thru 10-3 • Problem of the Day – Lessons 10-2 thru 10-7, Lessons 10-2 thru 10-4 ***Subtraction*** • Differentiated Center Activities Lesson 11-1 thru 11-7, Lesson 11-1 thru 11-3 • Leveled Homework – Reteaching, Practice, & Enrichment Master Lessons Lesson 11-1 thru 11-7, Lesson 11-1 thru 11-3 • Problem of the Day – Lesson 11-1 thru 11-7, Lesson 11-1 thru 11-3 **Eureka Math:** • Grade K Module 4: Number Pairs, Addition and Subtraction to 10 **Notes** • Interactive Notebooks Math Grade K: ○ Representing Addition and Subtraction pg. 34-35 ○ Joining Sets pg. 38-39 ○ Subtracting Within 5 pg. 46-47 ○ Subtracting Within 10 pg. 48-49 **Resources** • **Print** o Snap-It o Teaching Student-Centered Mathematics (K-3 2006) ▪ Activity 2.18 pg.50 Covered Parts ▪ Activity 2.19 pg. 50 Missing-Part Cards ▪ Activity 2.20 pg. 51 I Wish I Had ▪ Activity 2.26 pg. 55 Ten and Some More ▪ Activity 3.2 pg. 74 Missing-Part Subtraction (without writing the equation)

	o Numberless Word Problems: Join-Result Unknown o Numberless Word Problems: Part-Part-Whole Part Unknown o Numberless Word Problems: Separate-Result Unknown o Numberless Word Problems: Part-Part-Whole Whole Unknown o Developing Number Concepts: Addition and Subtraction (1999) ▪ Activity 1-1 pg. 17 Acting Out Stories: Using Real Things ▪ Activity 1-2 pg. 19 Acting Out Stories: Using Fantasies ▪ Activity 1-3 pg. 20 Acting Out Stories: Using Counters ▪ Activity 2-4 pg. 60 Bulldozer ▪ Activity 2-8 pg. 65 Working With Number Shapes ▪ Activity 2-9 pg. 67 Number Shapes: On and Off ▪ Activity 2-11 pg. 71 Number Trains: On and Off ▪ Activity 2-12 pg.73 Counting Boards: Number-Combination Stories ● **Printable Instructional Activities and Resources** o Addition and Subtraction o Part Part Whole Mat o Story Boards ● **Technology-based** o Molly Adds to 10 o Molly Adds and Subtracts from 10

	Station Activities/Manipulatives Foam 2-Color Counters: When given a part-part-whole addition story with a sum less than 10, the student will use foam 2-color counters to model and solve the problem. Linking Cubes: When given a join addition story with a sum less than 10, the student will use linking cubes to model and solve the problem. Pet Counters: When given a whole for an addition story, the student will use pet counters to determine one possible combination of parts. Fruit Counters: When given a subtraction story with a difference less than 10, the student will use fruit counters to model and solve the problem. Insect Counters: When given a joining addition story, the student will use insect counters to model and solve the problem. Square Tiles: When given a separate subtraction story with a difference less than 10, the student will use square tiles to model and solve the problem.
Cross-Curricular Connections	**Differentiation**

Monster Musical Chairs by Stuart J. Murphy Introduction to subtracting 1. Activity **Animals on Board** by Stuart Murphy Ask your child (or students) to point to each animal as you count them together. Ask questions throughout the story, such as: "If there are six swans and one more is added, how many swans will there be in all?" Activity **Two of Everything** by Lily Toy Hong. Explore the concept of doubling. **Ten Little Fish** by Audrey & Bruce Wood Use goldfish crackers as objects to model addition and subtraction. **Rooster's Off to See the World** by Eric Carle Provide students with counters and a counting mat to model the addition of each animal throughout the story and then model the subtraction of each animal as the story comes to an end. **Pete the Cat and his Four Groovy Buttons** Eric Litwin Pete starts with 4 buttons. He loses his buttons but he keeps singing his song. **Five Little Monkeys** by Eileen Christelow **Quack and Count** by Keith Baker **Domino Addition** by Lynette Long	***Addition*** EnVision Math: Reteaching Set A–B ***Subtraction*** EnVision Math: Reteaching Set A–D

Activity **Five Little Penguins Slipping on the Ice by Steve Metzger** Five little penguins slipping on the ice. One fell down--oh no! Now there are only four penguins left! What will Mother penguin do? **Elevator Magic** by Stuart J. Murphy Learning how to subtract using a simplified "number line" helps children understand the concept of subtraction. Activity **Number One, Number Fun** by Kay Chorao Pigs, chickens, and other farm animals prance and balance in piles, while the reader is invited to add and subtract their numbers. *We Subtract* (Benchmark Unit 5)	

Strand: Measurement and Geometry
K.7 The student will recognize the attributes of a penny, nickel, dime, and quarter and identify the number of pennies equivalent to a nickel, a dime, and a quarter.
Suggested Pacing
4th Nine Weeks
Related Spiraling Standards

	1.8 The student will determine the value of a collection of like coins (pennies, nickels, or dimes) whose total value is 100 cents or less.
Essential Questions	**Common Misconceptions**
● What is money? ● What is a coin? ● How can we describe a penny? … a nickel? … a dime? … a quarter? ● How can we identify a penny? … a nickel? … a dime? … a quarter? ● How can we use five frames or ten frames to help us identify the number of pennies equivalent to a nickel?... to a dime?... to a quarter?	Students may confuse the physical characteristic of a dime being the smallest coin with its value, creating the misconception that a dime is the smallest value as well. Students may struggle identifying the nickel and quarter when shown the tails side of each due to the various designs on the back of each.
Understanding the Standard	**Essential Knowledge and Skills**
● Involvement in varied activities such as physically manipulating coins and making comparisons about their sizes, colors, and values are prerequisites to the skills of coin recognition and valuation. ● Students need experiences counting collections of pennies. This can promote one-to-one correspondence, as a penny is worth one cent. ● Students need experiences to develop the concept that a nickel has a value of five cents (which is the same as five pennies), that a dime has a value of 10 cents (which is the same as ten	**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to** ● Describe the attributes (e.g., color, relative size) of a penny, nickel, dime, and quarter. ● Identify a penny, nickel, dime, and quarter. ● Identify the number of pennies equivalent to a nickel, a dime, and a quarter (i.e., a nickel has the same value as five pennies).

pennies), and a quarter has a value of 25 cents (which is the same as twenty-five pennies), even though each coin (nickel, dime, quarter) is only one object.

Vocabulary

Money
Coins
Cents
Value
Penny
Nickel
Dime
Quarter

Assessment

Powerschool – Exam identifier

Instructional Activities Organized by Learning Objective

Textbook
EnVision:

- Lesson 13-1 thru 13-4 (exclude dollar in 13-4)
- Differentiated Center Activities 13-1 thru 13-4 (exclude dollar in 13-4)
- Leveled Homework – Reteaching, Practice, & Enrichment Master Lessons 13-1 thru 13-4
- Problem of the Day – Lessons 13-2 thru 13-4

Eureka Math:

- Grade 1 Module 6 Topic E: Coins and Their Values

Notes

Resources

- **Print**
  - Printable Instructional Activities/Resources
    - Coin Bingo/Three in a Row
    - Identifying Coins
    - Sorting Money
    - Money Powerpoint
    - Exploring Coins
- **Technology-based**
  - Learning Coins
  - Identify Coins Video - Turtle Diary

	Station Activities/Manipulatives Classroom Money Kit: When given one each of the following from the classroom money kit: penny, nickel, dime, quarter, the student will identify each when named by the teacher. The student will use the pennies from the money kit to create a set of pennies equivalent to a nickel, a dime, and a quarter.
Cross-Curricular Connections	**Differentiation**
Benny's Pennies by Pat Brisson **Once Upon a Dime** by Nancy Allen **Alexander, Who Used to be Rich Last Sunday** by Judith Viorst **Jelly Beans for Sale** by Bruce McMillan Make sets of jelly beans equal to one penny each. **The Penny Pot** by Stuart Murphy Place a handful of coins on the table and talk about the value of each. Ask questions such as: "Which coin is a dime?" **A Chair for My Mother** by Vera Williams Place different amounts of pennies and/or nickels in jars for students to count. (No more than a total of 10 cents) **Tom's Lucky Quarter** by Morrell Gipson A quarter travels all around the community and eventually returns to Tom who was the first to spend the coin.	EnVision Math: Reteaching Set B

Strand: Measurement and Geometry	
K.8 The student will investigate the passage of time by reading and interpreting a calendar.	
Suggested Pacing	
1st Nine Weeks	
Related Spiraling Standards	
	1.9 The student will investigate the passage of time and a) tell time to the hour and half-hour, using analog and digital clocks; and b) read and interpret a calendar.
Essential Questions	**Common Misconceptions**
● How do calendars measure time in days? ….weeks? … months? … years? ● How can we use calendars to determine the day before and after a given day?	Students may have the misconception that the week starts on Monday due to cultural differences and the school week beginning on Monday. Students may struggle with what day comes after Saturday as most songs and posters list the days Sunday-Saturday. It is important to explain to students that the days of the week and months are a cycle, therefore we start back at the beginning.

Richmond Public Schools

Curriculum Framework

Grade K

Understanding the Standard	Essential Knowledge and Skills
• Practical situations are appropriate to develop a sense of the interval of time between events (e.g., club or team meetings occur every week on Monday, there is a week between meetings). • The calendar is a way to represent units of time (e.g., days, weeks, months, and a year). • Using a calendar develops the concept of a day as a 24-hour period rather than a period of time from sunrise to sunset.	**The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to** • Name the twelve months of the year. • Name the seven days in a week. • Determine the day before and after a given day (e.g., yesterday, today, tomorrow).
Vocabulary	**Instructional Activities Organized by Learning Objective**
Calendar, Days, Weeks, Months, Before, Year, Yesterday, Today, Tomorrow, After	**Textbook** **EnVision:** • Lesson 15-1 thru 15-2, 15-5, VA-7 (Virginia Handbook T138), Lesson 15-1 thru 15-5 • Differentiated Center Activities Lesson 15-1 thru 15-2, 15-5, Lesson 15-1 thru 15-5 • Leveled Homework – Reteaching, Practice, & Enrichment Master Lesson 15-1 thru 15-2, Lesson 15-1 thru 15-5 • Problem of the Day – Lesson 15-2 thru 15-3, Lesson 15-2 thru 15-6 **Notes** **Resources** • **Print** o Printable Instructional Activities/Resources ▪ Calendar Questions
Assessment	
Powerschool – Exam identifier	

	• **Technology-based** o Turtle Diary Days of the Week (games 1-3, students may need help reading the days) **Station Activities/Manipulatives** Calendar and Counters: When given a calendar and counter, the student will cover the day of the week verbally given by the teacher. Calendar and Counters: When given a calendar and counters, the student will cover the day before or the day after a day of the week verbally given by the teacher. (i.e. "If today is Monday, can you put your counter on the day of the week that yesterday was?")
Cross-Curricular Connections	**Differentiation**
Hap-pea All Year! by Keith Baker **One Tiny Turtle** by Nicola Davis Discuss the calendar words from the story-month, week, years, day **Pepper's Journal: A Kitten's First Year** by Stuart J. Murphy After reading the story, make a list of family or class events that occur on a weekly, monthly, and yearly basis. Help your child (or class) record the events on the calendar. **Cookie's Week** by Cindy Ward What did Cookie do yesterday? What do you predict Cookie will do tomorrow? **Chicken Soup with Rice: A Book of Months** by Maurice Sendak Make a classroom calendar with children. Encourage children to create symbols representative of each month that they can draw near	

the top of each calendar month. Work with children to mark special days on each calendar month, including children's birthdays and special school/classroom events as well as national holidays and vacation days. **Game Time** by Stuart J. Murphy Introduce students to the use of calendars and clocks. When is a calendar an appropriate tool for measuring time? When is a clock the appropriate tool? **Calendar Activities** **The Very Hungry Caterpillar** by Eric Carle Use this book to highlight the sequence of the days of the week and the passage of time.	

Strand: Measurement and Geometry
K.9 The student will compare two objects or events, using direct comparisons, according to one or more of the following attributes: length (longer, shorter), height (taller, shorter), weight (heavier, lighter), temperature (hotter, colder), volume (more, less), and time (longer, shorter).
Suggested Pacing
4th Nine Weeks
Related Spiraling Standards

	1.10 The student will use nonstandard units to measure and compare length, weight, and volume.
Essential Questions	**Common Misconceptions**
● What does it mean to measure something? ● When do we need to measure length? ● When do we need to measure height? ● How are length and height similar? ● When do we need to measure weight? ● When do we need to measure temperature? ● When do we need to measure volume? ● When do we need to measure time? ● How can we compare the length of two objects? What words do we use to compare lengths? ● How can we compare the height of two objects? What words do we use to compare heights? ● How can we compare the weight of two objects? What words do we use to compare weights? ● How can we compare the temperature of two objects or events? What words do we use to compare temperatures? ● How can we compare the volume of two objects? What words do we use to compare volumes?	Students may have the misconception that the larger object will always be the heavier object.

● How can we compare the time spent on two events? What words do we use to compare time?	
Understanding the Standard	**Essential Knowledge and Skills**
● Students need to identify the attribute that they are measuring (e.g., length, height, weight, temperature, volume) before they begin to measure. ● Multiple hands-on experiences are needed to gain the ability to compare the attributes of objects. ● Students develop conservation of measurement when they understand that the attributes do not change when the object is manipulated (e.g., a piece of string that is coiled maintains its length as it is straightened; the volume of water does not change when poured from a pitcher into a fish tank.) ● Length is the distance between two points. ● Height is the distance from the bottom or base of something to the top. ● Weight is a measure of the heaviness of an object. ● Temperature is the degree of hotness or coldness of an object or environment. ● Volume is the measure of the capacity of a container. ● Time is the measure of an event from its beginning to end. Students could compare the difference between the time spent sliding down the slide versus the time spent walking around the school building.	The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to ● Compare and describe lengths of two objects as longer or shorter, using direct comparison (e.g., the bus is longer than the car). ● Compare and describe heights of two objects (as taller or shorter), using direct comparison. ● Compare and describe weights of two objects (as heavier or lighter), using direct comparison. ● Compare and describe temperatures of two objects or environment (as hotter or colder), using direct comparison. ● Compare and describe volumes of two containers (as more or less), using direct comparison. ● Compare and describe the amount of time spent on two events (as longer or shorter), using direct comparison.

Vocabulary	Instructional Activities Organized by Learning Objective
Length (Longer, Shorter) Height (Taller, Shorter) Weight (Heavier, Lighter) Temperature (Hotter, Colder) Volume (More, Less) Time (Longer, Shorter)	**Textbook** **EnVision:** ● Lesson 9-1 thru 9-10, 15-6, 15-7 ● Differentiated Center Activities 9-1 thru 9-10, 15-6, 15-7 ● Leveled Homework – Reteaching, Practice, & Enrichment Master Lessons 9-1 thru 9-10, 15-6, 15-7 ● Problem of the Day – Lessons 9-1 thru 9-10 **Eureka Math:** ● Grade K Module 3: Comparison of Length, Weight, Capacity, and Numbers to 10 **Notes** ● Interactive Notebooks Math Grade K ○ Comparing Objects by Length pg. 64-65 **Resources** ● **Print** o Teaching Student-Centered Mathematics (K-3 2006) ▪ Activity 8.1 pg. 228 Longer, Shorter, Same ▪ Activity 8.2 pg. 229 Length (or Unit) Hunt ▪ Activity 8.13 pg. 238 Capacity Sort o Printable Instructional Activities/Resources ▪ Heavier Than Me ▪ Compare Time Sort ● **Technology-based** **Station Activities/Manipulatives** Square Tiles: The student will use square tiles to measure and compare the length of two objects as longer or shorter.

	Linking Cubes: The student will use linking cubes to measure and compare the height of two objects as taller or shorter.
Assessment	
Powerschool – Exam identifier	
Cross-Curricular Connections	**Differentiation**
Light and Heavy (Reading A-Z) **The Biggest Pumpkin Ever** by Steven Kroll Comparing size, weight; heaviest, lightest. **Activity** **I'm the Biggest Thing in the Ocean** by Kevin Sherry Suggest another creature, such as an elephant, and brainstorm bigger and smaller. **It Looked Like Spilt Milk** by Charles G. Shaw **Activity** **Measuring Penny** by Loreen A Leedy A little girl gets very excited about her math homework. Students can discuss and recreate the activities that Penny does. **Mighty Maddie** by Stuart J. Murphy This book addresses why mass is an important measurement. **Activity**	EnVision Math: Reteaching Set A–C

The Dragon's Scales by Sarah Albee When a hot-tempered dragon seizes the local bridge, the people of Berryville are cut off from their supply of beloved strawberries until they can correctly answer three questions related to weight. **The 100-Pound Problem** by Jennifer Dussling How, in a boat that only holds 100 pounds, can a boy transport himself, a dog, and assorted gear that weigh more than that? Includes colorful illustrations, a math concept, activities and a note to caregivers. **Tell Me How Much It Weighs** by Shirley Willis This book answers the questions of how much things around us weigh.	

Strand: Measurement and Geometry	
K.10 The student will **a) identify and describe plane figures (circle, triangle, square, and rectangle);** **b) compare the size (smaller, larger) and shape of plane figures (circle, triangle, square, and rectangle); and** **c) describe the location of one object relative to another (above, below, next to) and identify representations of plane figures (circle, triangle, square, and rectangle) regardless of their positions and orientations in space.**	
Suggested Pacing	
3rd Nine Weeks	
Related Spiraling Standards	
	1.11 The student will a) Identify, trace, describe, and sort plane figures (triangles, squares, rectangles, and circles) according to number of sides, vertices, and angles; and b) identify and describe representations of circles, squares, rectangles, and triangles in different environments, regardless of orientation, and explain reasoning.
Essential Questions	**Common Misconceptions**
● How can we identify a circle? … a triangle? … a square? … a rectangle?	Students may have trouble separating a square from the identified category of rectangles.

● What words help us describe a circle? … a triangle? … a square? … a rectangle? (number of sides and number of vertices) ● How do we identify examples and non-examples of a shape? ● How do different characteristics of shapes help us compare and sort them in different ways? (… by size? …by shape?) ● Where can we find examples of geometric shapes in our world? ● How can we prove that turning, sliding, or flipping a geometric figure does not change its shape or name? ● How can we use the words above, below, and next to to describe the position of geometric shapes in a picture?	Students sometimes believe that orientations are tied to shape. If two triangles are shown but in different orientations the student may see the regular triangle, but may claim not to know what the upside down triangle is. Students may have trouble understanding the positional words above, below and next to.
Understanding the Standard	**Essential Knowledge and Skills**
● An important part of the geometry strand in kindergarten through grade two is the naming and describing of figures. Children move from their own vocabulary and begin to incorporate conventional terminology as the teacher uses geometric terms. ● Early experiences with comparing, sorting, combining, and subdividing figures assist students in analyzing the characteristics of plane figures. ● Attribute blocks and tangrams are among the manipulatives that are particularly appropriate for sorting and comparing size and shape. ● Students should be given opportunities to construct plane figures using multiple tools (e.g., clay, straws, paper, and scissors). ● Representations of circles, squares, rectangles, and triangles can be found in the students' environment at school and at	The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to ● Identify a circle, triangle, square, and rectangle. (a) ● Describe the characteristics of triangles, squares, and rectangles, including number of sides and number of vertices. (a) ● Describe a circle using terms such as *round* and *curved*. (a) ● Compare and group plane figures (circle, triangle, square, and rectangle) according to their relative sizes (smaller, larger). (b) ● Compare and group plane figures (circle, triangle, square, and rectangle) according to their shapes. (b) ● Distinguish between examples and nonexamples of identified plane figures (circle, triangle, square, and rectangle). (b)

home. Students should have opportunities to identify/classify things in their environment by the type of figures those things represent. ● Presentation of triangles, rectangles, and squares should be made in a variety of spatial orientations so that students are less likely to develop common misconception that triangles, rectangles, and squares must have one side parallel to the bottom of the page on which they are printed. ● A common misconception students have when a figure such as a square is rotated is they will frequently refer to the rotated square as a diamond. Clarification needs to be ongoing (e.g., a square is a square regardless of its location in space; there is no plane figure called a diamond). ● A plane figure is any closed, two-dimensional shape. ● A vertex is the point at which two or more lines, line segments, or rays meet to form an angle. The term *vertices* is the plural form of vertex. ● A polygon is a closed plane figure composed of at least three line segments that do not cross. ● A triangle is a polygon with three sides. ● Children should have experiences with different types of triangles (e.g., equilateral, isosceles, scalene, right, acute, obtuse); however, at this level, they are not expected to name the various types. ● A quadrilateral is a polygon with four sides. ● A rectangle is a quadrilateral with four right angles.	● Identify pictorial representations of a circle, triangle, square, and rectangle, regardless of their position and orientation in space. (c) ● Describe the location of one object relative to another, using the terms *above*, *below*, and *next to*. (c)

- A square is a quadrilateral with four congruent (equal length) sides and four right angles. At this level, students might describe a square as a special rectangle with four sides of equal length.
- Students at this level do not need to use the terms *polygon*, *quadrilateral*, or *congruent*.
- A circle is the set of points in a plane that are the same distance from a point called the center. A circle is not a polygon because it does not have straight sides.

Vocabulary

circle	vertices	round
square	sides	curved
triangle	above	smaller
rectangle	below	larger
plane figure	next to	

Assessment

Powerschool – Exam identifier

Instructional Activities Organized by Learning Objective

Textbook

a) identify and describe plane figures (circle, triangle, square, and rectangle);

EnVision Math : Lesson 7-1, 7-2, 7-9, VA-2 (Virginia Handbook T133)
EnVision Math: Reteaching Set B and Technology Going Digital
EnVision Math: Leveled Homework – Reteaching, Practice, & Enrichment Master Lessons 7-1, 7-2, 7-9
Envision Math: Problem of the Day – Lessons 7-2,

Eureka Math
K.10a

- GRADE K MODULE 1- TOPIC A Attributes of two Related Objects
- GRADE K MODULE 1- TOPIC B: Classify to Make Categories and Count
- GRADE K MODULE 2-TOPIC A: Two-Dimensional Flat Shapes (Lessons 1-4)

	• GRADE K MODULE 2- TOPIC C: Two-Dimensional Shapes • GRADE K MODULE 6: Analyzing, Comparing, and Composing Shapes *b) compare the size (smaller, larger) and shape of plane figures (circle, triangle, square, and rectangle);* EnVision Math: Lesson 7-4, , VA-2 (Virginia Handbook T133) EnVision Math: Leveled Homework – Reteaching, Practice, & Enrichment Master Lessons 7-4, Eureka Math K.10b • GRADE K MODULE 2- Two Dimensional Shapes • GRADE K MODULE 6- Analyzing, Comparing, and Composing Shapes *c) describe the location of one object relative to another (above, below, next to) and identify representations of plane figures (circle, triangle, square, and rectangle) regardless of their positions and orientations in space.* EnVision Math: Lesson 2-1 thru 2-6, EnVision Math: Reteaching Set A–D EnVision Math: Leveled Homework – Reteaching, Practice, & Enrichment Master Lessons 2-1 thru 2-6 Envision Math: Problem of the Day – Lessons 2-1 thru 2-6 EUREKA MATH K.10c

	● GRADE K MODULE 2: TOPIC A Two Dimensional Flat Shapes (Lesson 5) ● GRADE K MODULE 6: Analyzing, Comparing, and Composing Shapes **Notes** ● Interactive Notebooks Math Grade K ○ Two-Dimensional Shapes Pages 72-73 (Exclude Hexagon) **Resources** ● **Print** o Teaching Student- Centered Mathematics (K-3 2006) ▪ Activity 7.1 Shape Sorts (a) ▪ Activity 7.2 What's My Shape (a) o Instructional Activities/Resources ▪ Geometric Figures in our classroom ▪ Bag Identification Letters ▪ Identification Letters Recording Sheet ▪ Mouse Shapes ▪ Shape Sort ▪ Shapes Picture ▪ Circle Sort ▪ Square Sort ▪ Triangle Sort ▪ Geometry Handout ▪ Walk on the Shape ● **Technology-based** o Turtle Diary Shapes Game (only game 1) o Basic Shape Splat (Basic Shapes and Shapes with Rotation) o Matching Shapes

	Station Activities/Manipulatives Attribute Blocks: The students will use attribute blocks to identify and describe plane figures (square, rectangle, circle, and triangle The students will use attribute blocks to compare smaller/larger of plane figures (square, rectangle, circle, and triangle). The students will use attribute blocks to describe the location of the plane figures relative to another (above, below, and next to).
Cross-Curricular Connections	**Differentiation**
Mouse Shapes by Ellen Stoll Walsh Three mice make a variety of things out of different shapes as they hide from a scary cat. **Activity** **Circus Shapes** by Stuart Murphy ● Encourage your child to retell the story using the names of the shapes: "circle," "triangle," "square," and "rectangle." ● Look for things around the house such as the faces of watches or clocks; buttons on a sweater; books, tiles, rugs, kitchen towels, and windows. Which are triangles? circles? squares? rectangles? ● Go on a "Shape Hunt" in your classroom. Create a chart with each different shape—circle, triangle, square and rectangle—drawn at the top of its own column. Encourage your child or students to make a mark for each shape "sighting." Then add up all the marks and see how times	A.) EnVision Math: Differentiated Center Activities 7-1, 7-2, 7-9 B) EnVision Math: Differentiated Center Activities 7-4, C.) EnVision Math: Differentiated Center Activities 2-1 thru 2-6,

each shape was found. ● Using construction paper, cut out circles, squares, triangles, and rectangles and mix them all up. Together sort them by shape, asking the children to say the names of the shapes. Ask them to draw the shapes and then tell you what they are. **Sea Shapes** by Suse MacDonald Introduces twelve basic **shapes** that are transformed into colorful undersea creatures, in a concept book that also features information on marine animals and their habitats. **Activity** **Perfect Square** by Michael Hall Students can discuss characteristics of a square and discover shapes hidden inside a square. **Round is a Mooncake** by Roseanne Thong A little girl's neighborhood becomes a discovery ground of things round, square and rectangular. Many of the objects are Asian in origin, other universal: round rice bowls and a found pebble, square dim sum and pizza boxes, rectangular Chinese lace and very special pencil case. **Activity** **Pancakes, Crackers and Pizza** by Marjorie Eberts and Margaret Gisler Compare shapes in book and ask students to name other foods with similar shapes. Have children use cookie cutters and playdough to make shapes and describe them. **Bees, Snails, and Peacock Tails** by Betsy Franco Identify and compare shapes found in nature.	

The Greedy Triangle by Marilyn Burns Make shapes from other shapes and defining shapes **Activity** **Shapes, Shapes, Shapes** by Tana Hoban **Shape Hunt Activity** **Go, Dog, Go!** by P.D. Eastman Whether by foot, boat, car, or unicycle, P. D. Eastman's lovable dogs demonstrate the many ways one can travel. **Activity** **Pete the Cat The Wheels on the Bus** by James Dean Pete the cat's school day is recounted in this twist on the classic song. **Rosie's Walk** by Pat Hutchins Have students dramatize Rosie's walk. **Activity** **The Shape of Things** by Dayle Ann Dodds This book highlights shapes are everywhere. **Color Zoo** by Lois Ehlert This book is a good review for shapes and colors. **Circles and Squares Everywhere!** by Max Grover Tires, trucks, windows, houses, smokestacks, boats--circles and squares are everywhere!	

Strand: Probability and Statistics	
K.11 The student will **a) collect, organize, and represent data; and** **b) read and interpret data in object graphs, picture graphs, and tables.**	
Suggested Pacing	
4th Nine Weeks	
Related Spiraling Standards	
	1.12 The student will a) collect, organize, and represent various forms of data using tables, picture graphs, and object graphs; and b) read and interpret data displayed in tables, picture graphs, and object graphs, using the vocabulary *more, less, fewer, greater than, less than,* and *equal to*.
Essential Questions	**Common Misconceptions**
● What is data? ● What are some ways to represent data? ● Why represent data in a graph? ● What questions can we ask each other to gather data? ● How do we display data using an object graph? ● How do we display data using a picture graph? ● How do we display data using a table? ● How do tables and graphs help us understand our data? ● How can tables and graphs help us answer questions about our data?	Some students may think data in real life object or picture graphs can be arranged from top to bottom, not realizing that the objects are arranged from bottom to top. Some students may think data in real life object or picture graphs can be arranged from right to left, not realizing that the objects are arranged from left to right.

Understanding the Standard	Essential Knowledge and Skills
• Data are pieces of information collected about people or things. The primary purpose of collecting data is to answer questions. The primary purpose of interpreting data is to inform decisions (e.g., which type of clothing to pack for a vacation based on a weather graph or which type of lunch to serve based upon class favorites). • Methods for organizing data could include five or ten frames, surveys, checklists, or various methods of grouping concrete materials. • At this level, data gathered and displayed by students should be limited to 16 or fewer data points for no more than four categories. • Students should have opportunities to interpret graphs, created with the assistance of the teacher, that contain data points where their entire class is represented (e.g., tables that show who brought their lunch and who will buy their lunch for any given day, a picture graph showing how students traveled to school – bus, car, walk). • When data are presented in an organized manner, students can interpret and discuss the results and implications of their investigation (e.g., identifying parts of the data that have special characteristics, including categories with the greatest, the least, or the same number of responses). • In the process of collecting data, students make decisions about what is relevant to their investigation (e.g., when collecting data on their classmates' favorite pets, deciding to limit the categories to common pets).	The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to • Collect data on categories identified by the teacher and/or student (e.g., number of siblings, types/numbers of pets, types of flowers in the garden). Data points, collected by students, should be limited to 16 or fewer for no more than four categories. (a) • Represent data by arranging concrete objects into organized groups to form a simple object graph. (a) • Represent gathered data, using pictures to form a simple picture graph (e.g., a picture graph of the weather for a month). (a) • Represent gathered data in tables (vertically or horizontally). (a) • Answer questions related to the gathered data displayed in object graphs, picture graphs, and tables: – Read the graph to determine the categories of data and the data as a whole (e.g., the total number of responses) and its parts (e.g., five people are wearing sneakers); and – Interpret the data that represents numerical relationships, including categories with the greatest, the least, or the same. (b)

• When students begin to collect data, they recognize the need to categorize, which helps develop the understanding of "things that go together." Categorical data are used when constructing picture graphs and bar graphs. • Different types of representations emphasize different things about the same data. • Object graphs are graphs that use concrete materials to represent the categorical data that are collected (e.g., cubes stacked by the month, with one cube representing the birthday month of each student). • Picture graphs are graphs that use pictures to represent and compare information. At this level, each picture should represent one data point. • Tables are an orderly arrangement of data in columns and rows in an essentially rectangular format. Tables may be used to display numerical relationships or to organize lists. • Students represent data to convey results of their investigations at a glance, using concrete objects, pictures, and numbers to give a "picture" of the organized data. • Graphs can be used to make connections between mathematics and science or social studies (e.g., types of plants found in the school yard, how students get to school). • Students should have experiences answering questions related to the analysis and interpretation of the characteristics of the data in the graph (e.g., similarities and differences, least and greatest, the categories, and total number of responses).	
Vocabulary	**Instructional Activities Organized by Learning Objective**

data graph picture graph object graph tables greatest least same **Assessment**	**Textbook** **a) collect, organize, and represent data; and** EnVision Math Lessons - 16-2 thru 16-5 EnVisions Math: Differentiated Center Activities 16-2 thru16-5 Envisions Math: Reteaching Set B & C EnVision Math: Leveled Homework – Reteaching, Practice, & Enrichment Master Lessons 16-2 thru 16-5 Envisions Problem of the Day- Lessons 16-2 thru 16- Eureka Math K.11a ● GRADE 1 MODULE 3-TOPIC D: Data Interpretation **b) read and interpret data in object graphs, picture graphs, and tables.** Envisions Math Lessons 16-3 thru 16-5 Envisions Math: Differentiated Center Activities 16-3 thru 16-5 Envisions Reteaching Set B & C EnVisions Math: Leveled Homework- Reteaching, and Enrichment Master Lessons 16-3 thru 16-5 Eureka Math K.11b ● GRADE 1 MODULE 3-TOPIC D: Data Interpretation **Notes** **Resources**

	• **Print** o Teaching Student-Centered Mathematics (K-3 2006) ▪ (Pg.60) Graphs (Pg.61) Figure 2.15 Relationships and number sense in a bar graph. Picture graph questions • **Technology-based** **Station Activities/Manipulatives** Graphing Mats:The students will use graphing mats to organize and represent data collected in object and picture graphs and tables.
Cross-Curricular Connections	**Differentiation**
"Band-aids" by Shel Silverstein Record the number of band-aids as you read through the poem. **Ten, Nine, Eight** by Molly Bang Count and record number of shoes, shells, fingers… **George's Store at the Shore** by Francine Bassede Make a table of objects from book. **The Best Vacation Ever** by Stuart Murphy **Vacation Activity**	

Rooster's Off To See The World by Eric Carle Make a table of animals from book. **Activity** **Bart's Amazing Charts** by Diane Ochiltree A young boy uses different kinds of charts and graphs to present information about his life. Includes related activities.	

Strand: Patterns, Functions, and Algebra	
K.12 The student will sort and classify objects according to one attribute.	
Suggested Pacing	
3rd Nine Weeks	
Related Spiraling Standards	
	1.13 The student will sort and classify concrete objects according to one or two attributes.
Essential Questions	**Common Misconceptions**
● What are attributes? ● How can we use a characteristic (attribute) to sort a set of objects into groups?	Students may have a misunderstanding of vocabulary.

● How can we classify sets of objects? ● How can we name (label) sets of objects that have been sorted? ● How do we decide what characteristics (attributes) we could use to classify a set of objects into groups? ● How many different ways can we sort a set of objects using common characteristics (attributes)?	Students may have trouble labeling the attributes of a set after it has been sorted for them. Students may struggle with identifying another way to sort a set of objects they have already sorted.
Understanding the Standard	**Essential Knowledge and Skills**
● Objects can be sorted and classified in different ways. ● To classify is to arrange or organize a set of materials according to a category or attribute (a quality or characteristic). ● General similarities and differences among objects are easily observed by children entering kindergarten, who are able to focus on any one attribute. The teacher's task is to move students toward a more sophisticated understanding of classification in which two or more attributes connect or differentiate sets, such as those found in nature (e.g., leaves having both different colors and different figures).	The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to ● Identify the attributes of an object (e.g., color, size, shape, thickness) ● Sort objects into appropriate groups (categories) based on one attribute (e.g., size – large bears and small bears). ● Classify sets of objects into groups (categories) of one attribute. ● Label attributes of a set of objects that has been sorted. ● Name multiple ways to sort a set of objects.
Vocabulary	**Instructional Activities Organized by Learning Objective**
sort classify attributes size shape color thickness	**Textbook** EnVision Math : Lesson 1-1 thru 1-5 EnVision Math: Differentiated Center Activities 1-1 thru 1-5 EnVision Math: Reteaching Set A–D EnVision Math: Leveled Homework – Reteaching, Practice, & Enrichment Master Lessons 1-1 thru 1-5 Envision Math: Problem of the Day – Lessons 1-1 thru 1-5

groups

Assessment

Powerschool – Exam identifier

Eureka Math
K.12

- GRADE K MODULE 1 TOPIC A: Attributes of Two Related Objects
- GRADE K MODULE 1 TOPIC B: Classify to Make Categories and Count
- GRADE K MODULE 2 TOPIC C: Two and Three Dimensional Shapes

Notes

- Interactive Notebooks Math Grade K
  - Comparing Objects by Size (can be used for sorting) pages 66-67

Resources

- **Print**
  - Teaching Student-Centered Mathematics (K-3 2006)
    - Activity 11.2 (pg.315) Guess My Rule
- **Technology-based**
  - Sorting Box
  - Oscar's Trash Collection

Station Activities/Manipulatives

Attribute Blocks: When given a sorted set of attribute blocks, the student will label the attributes of the set.

Counting and Sorting Set:The student will sort and classify objects using the Counting and Sorting Set.

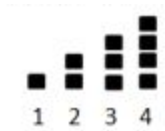
Cross-Curricular Connections

Differentiation

Sort it Out! by Barbara Mariconda In rhyming text, Pack the Packrat sorts his collection of trinkets in a variety of ways. **Dave's Down-to-Earth Rock Shop** by Stuart J. Murphy As they consider sorting their rock collection by color, size, type, and hardness, Josh and Amy learn that the same objects can be organized in many different ways. **Activity** **3 Little Firefighters** by Stuart J. Murphy Three young firefighters must find matching sets of buttons to complete their costumes for a parade, but should they sort them by shape, color, or size? **Activity** **The Button Box** by Margarette Reid Sort buttons to compare shape, size and color. **Sorting** by Henry Pluckrose **"A Lost Button" from Frog and Toad are Friends** by Arnold Lobel	

Strand: Patterns, Functions, and Algebra
K.13 The student will identify, describe, extend, create, and transfer repeating patterns.
Suggested Pacing

3rd Nine Weeks	
Related Spiraling Standards	
	1.14 The student will identify, describe, extend, create, and transfer growing and repeating patterns.
Essential Questions	**Common Misconceptions**
● What is a pattern? ● How can we identify and describe the core of a repeating pattern? ● Patterns exist in many forms (common objects, sounds, movements, and pictures). How can we create patterns in different forms? ● How do we use the part of a pattern that repeats (the core) to extend the pattern? ● How can we compare and contrast patterns? ● How can we transfer a repeating pattern from one representation to another?	Students may lack prior knowledge with colors, shapes, left-to-right directionality. Students may have a misunderstanding of vocabulary. Students may be unable to extend the pattern. Transferring or creating a new pattern may be difficult. Students often struggle with identifying the core of the pattern, but are able to extend the pattern.
Understanding the Standard	**Essential Knowledge and Skills**
● Patterning is a fundamental cornerstone of mathematics, particularly algebra. The process of generalization leads to the foundation of algebraic reasoning. ● Opportunities to create, identify, describe, extend, and transfer repeating patterns are essential to the primary school experience and lay the foundation for thinking algebraically. ● Patterning should include:	The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to ● Identify and describe the core (the part of the sequence that repeats) found in repeating patterns of common objects, sounds, movements, and pictures.

❖ creating a given pattern, using objects, sounds, movements, and pictures; ❖ recording a pattern with pictures or symbols; ❖ transferring a pattern into a different representation (e.g., the pattern snap, snap, clap changed to a blue, blue, red pattern, or changed to an AAB repeating pattern); and ❖ analyzing patterns in practical situations (e.g., calendar, seasons, days of the week). ● The part of the pattern that repeats is called the core. ● At this level students should have experiences extending patterns when given a complete repetition of a core (e.g., ABCABCABC) as well as when the final repetition of the core is incomplete (e.g., ABCABCA... or Red, Blue, Green, Red, Blue, Green, Red, Blue…). ● Examples of repeating patterns: ❖ ABABABAB; ❖ ABCABC; ❖ ABBAABBA; ❖ AABBAABBAABB; and ❖ AABAAB. ❖ Examples of growing patterns, introduced in grade one, include:  1 2 3 4 10, 20, 30, 40, 50... ☆△☆☆△☆☆☆△	● Extend a repeating pattern by adding at least two complete repetitions of the core to the pattern. ● Create a repeating pattern. ● Compare similarities and differences between patterns. ● Transfer a repeating pattern from one representation to another.

-	
Vocabulary	**Instructional Activities Organized by Learning Objective**
patterns repeating patterns growing patterns core extend repeat	**Textbook** EnVision Math : Lesson 3-1 thru 3-7 EnVision Math: Differentiated Center Activities 3-1 thru 3-7 EnVision Math: Reteaching Set A–B and Technology Going Digital EnVision Math: Leveled Homework – Reteaching, Practice, & Enrichment Master Lessons 3-1 thru 3-7 Envision Math: Problem of the Day – Lessons 3-1 thru 3-7 EnVision Math Extension Lesson Topic 3 pg 488- Growing Patterns **Notes** **Resources** ● **Print** o Teaching Student-Centered Mathematics (K-3 2006) ▪ Activity 10.1 (pg.276) Pattern Strips (Repeating Pattern) ▪ Activity 10.2 (pg.277) Pattern Match (Repeating Pattern)
Assessment	
Powerschool – Exam identifier	

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Activity 10.6 (pg.281) Extend and Explain (Growing Pattern)
Activity 10.7(pg.282) Predict How Many(Growing Pattern and using Tables)

Instructional Activities/Resources

Pattern Task Cards
Pattern block pattern strips
Button block pattern task cards
Color tile pattern strips

Technology-based

Patterns Maze-Starfall
Fuzz Bugs Patterns
Turtle Diary Pattern Matching
Vegetable Patterns

Station Activities/Manipulatives

Pattern Blocks: The student will use pattern blocks to create a repeating pattern.

Linking Cubes: When given the core of a pattern with linking cubes, the student will extend the pattern using the linking cubes by adding two more repetitions.

Square Tiles: When given a pattern by the teacher using a different manipulative, the student will use square tiles to transfer the pattern.
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<td>Cross-Curricular Connections</td>
<td>Differentiation</td>
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Beep Beep, Vroom, Vroom! by Stuart Murphy Look at patterns of vehicles. **Nature's Paintbrush: The Patterns and Colors Around You** by Susan Stockdale **Pattern Fish** by Trudy Harris Students will create a pattern and write a description of their pattern. They will then take turns describing each other's patterns.	