Crook County School District # 1 Curriculum Guide

Kindergarten Math

2011-2012

MATHEMATICS COMMON CORE STATE STANDARDS KINDERGARTEN Mathematics	
Practice	Explanation
1. Make Sense and Persevere in Solving Problems.	Mathematically proficient students in Kindergarten begin to develop effective dispositions toward problem solving. In rich settings in which informal and formal possibilities for solving problems are numerous, young children develop the ability to focus attention, test hypotheses, take reasonable risks, remain flexible, try alternatives, exhibit self-regulation, and persevere (Copley, 2010). Using both verbal and nonverbal means, kindergarten students begin to explain to themselves and others the meaning of a problem, look for ways to solve it, and determine if their thinking makes sense or if another strategy is needed. As the teacher uses thoughtful questioning and provides opportunities for students to share thinking, kindergarten students begin to reason as they become more conscious of what they know and how they solve problems.
2. Reason abstractly and quantitatively.	Mathematically proficient students in Kindergarten begin to use numerals to represent specific amount (quantity). For example, a student may write the numeral "11" to represent an amount of objects counted, select the correct number card "17" to follow "16" on the calendar, or build a pile of counters depending on the number drawn. In addition, kindergarten students begin to draw pictures, manipulate objects, use diagrams or charts, etc. to express quantitative ideas such as a joining situation (Mary has 3 bears. Juanita gave her 1 more bear. How many bears does Mary have altogether?), or a separating situation (Mary had 5 bears. She gave some to Juanita. Now she has 3 bears. How many bears did Mary give Juanita?). Using the language developed through numerous joining and separating scenarios, kindergarten students begin to understand how symbols (+, -, =) are used to represent quantitative ideas in a written format.
3.Construct viable arguments and critique the reasoning	In Kindergarten, mathematically proficient students begin to clearly express, explain, organize and consolidate their math thinking using both verbal and written representations. Through opportunities that encourage exploration, discovery, and discussion, kindergarten students begin to learn how to express opinions, become skillful at listening to others, describe their reasoning and respond to others' thinking and reasoning. They begin to develop the ability to reason and analyze situations as they consider questions such as, "Are you sure…?" , "Do you think that would happen all the time…?", and "I wonder why…?"

MATHEMATICS COMMON CORE STATE STANDARDS KINDERGARTEN Mathematics	
Practice	Explanation
4.Model with mathematics.	Mathematically proficient students in Kindergarten begin to experiment with representing real-life problem situations in multiple ways such as with numbers, words (mathematical language), drawings, objects, acting out, charts, lists, and number sentences. For example, when making toothpick designs to represent the various combinations of the number "5", the student writes the numerals for the various parts (such as "4" and "1") or selects a number sentence that represents that particular situation (such as 5 = 4 + 1)*. *According to CCSS, "Kindergarten students should see addition and subtraction equations, and student writing of equations in kindergarten in encouraged, but it is not required". However, please note that it is not until First Grade when "Understand the meaning of the equal sign" is an expectation (1.OA.7).
5. Use appropriate tools strategically.	In Kindergarten, mathematically proficient students begin to explore various tools and use them to investigate mathematical concepts. Through multiple opportunities to examine materials, they experiment and use both concrete materials (e.g. 3-dimensional solids, connecting cubes, ten frames, number balances) and technological materials (e.g., virtual manipulatives, calculators, and interactive websites) to explore mathematical concepts. Based on these experiences, they become able to decide which tools may be helpful to use depending on the problem or task. For example, when solving the problem, "There are 4 dogs in the park. 3 more dogs show up in the park. How many dogs are in the park?", students may decide to act it out using counters and a story mat; draw a picture; or use a handful of cubes.
6. Attend to precision	Mathematically proficient students in Kindergarten begin to express their ideas and reasoning using words. As their mathematical vocabulary increases due to exposure, modeling, and practice, kindergarteners become more precise in their communication, calculations, and measurements. In all types of mathematical tasks, students begin to describe their actions and strategies more clearly, understand and use grade-level appropriate vocabulary accurately, and begin to give precise explanations and reasoning regarding their process of finding solutions. For example, a student may use color words (such as blue, green, light blue) and descriptive words (such as small, big, rough, smooth) to accurately describe how a collection of buttons is sorted.

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Practice	Explanation
7. Look for and make use of structure	Mathematically proficient students in Kindergarten begin to look for patterns and structures in the number system and other areas of mathematics. For example, when searching for triangles around the room, kindergarteners begin to notice that some triangles are larger than others or come in different colors- yet they are all triangles. While exploring the part-whole relationships of a number using a number balance, students begin to realize that 5 can be broken down into sub-parts, such as 4 and 1 or 4 and 2, and still remain a total of 5.
8. Look for and express regularity in repeated reasoning	In Kindergarten, mathematically proficient students begin to notice repetitive actions in geometry, counting, comparing, etc. For example, a kindergartener may notice that as the number of sides increase on a shape, a new shape is created (triangle has 3 sides, a rectangle has 4 sides, a pentagon has 5 sides, a hexagon has 6 sides). When counting out loud to 100, kindergartners may recognize the pattern 1-9 being repeated for each decade (e.g., Seventy-ONE, Seventy-TWO, Seventy THREE… Eighty-ONE, Eighty-TWO, Eighty-THREE…). When joining one more cube to a pile, the child may realize that the new amount is the next number in the count sequence.

MATHEMATICS COMMON CORE STATE STANDARDS KINDERGARTEN **Counting and Cardinality** **Know number names and the count sequence**			
CC STANDARD	Declarative Knowledge Procedural knowledge	Level of Rigor	Academic Vocabulary
K.CC.1 Count to 100 by ones and by tens.	Student's **rote count** by starting at one and counting to 100. When students count by tens they are only expected to master counting on the decade (0, 10, 20, 30, 40 …). This objective does not require recognition of numerals. It is focused on the rote number sequence.	Level 1 Recall Level 2 Skill/Concept	Rote Count Skip Counting
K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1)	Students begin a rote forward counting sequence from a number other than 1. Thus, given the number 4, the student would count, "4, 5, 6, 7 …" This objective does not require recognition of numerals. It is focused on the rote number sequence 0-100.	Level 1 Recall Level 2 Skill/Concept	Forward Rote Counting
K.CC.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	Students write the numerals 0-20 and use the written numerals 0-20 to represent the amount within a set.(***For example, if the student has counted 9 objects, then the written numeral "9" is recorded).*** Students can record the quantity of a set by selecting a number card/tile (numeral recognition) or writing the numeral. Students can also create a set of objects based on the numeral presented. (***For example, if a student picks up the number card "13", the student then creates a pile of 13 counters.***)While children may experiment with writing numbers beyond 20, this standard places emphasis on numbers 0-20. Due to varied development of fine motor and visual development, reversal of numerals is anticipated. While reversals should be pointed out to students and correct formation modeled in instruction, the emphasis of this standard is on the use of numerals to represent quantities rather than the correct handwriting formation of the actual numeral itself.	Level 1 Recall Level 2 Skill/Concept	Number Recognition Reversals

MATHEMATICS COMMON CORE STATE STANDARDS KINDERGARTEN **Counting and Cardinality** **Count to tell the number of objects**			
CC STANDARD	Declarative Knowledge Procedural knowledge	Level of Rigor	Academic Vocabulary
K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality. a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.	Students count a set of objects and see sets and numerals in relationship to one another. These connections are higher-level skills that require students to analyze, reason about, and explain relationships between numbers and sets of objects. The expectation is that students are comfortable with these skills with the numbers 1-20 by the end of Kindergarten	Level 1 Recall Level 2 Skill/Concept	Sets Objects Cardinality Quantities 1-1 Corres.
	Students implement correct counting procedures by pointing to one object at a time (one-to-one correspondence) while keeping track of objects that have and have not been counted.	Level 1 Recall Level 2 Skill/Concept	
	Students answer the question "How many are there?" by counting objects in a set and understanding that the last number stated when counting a set represents the total amount of objects: ***(…8, 9, 10) "There are 10 bears in this pile."*** **(cardinality).** Since an important goal for children is to count with meaning, it is important to have children answer the question, "How many do you have?" after they count. Often times, children who have not developed cardinality will count the amount again, not realizing that the 10 they stated means 10 objects in all. Young children believe what they see. Therefore, they may believe that a pile of cubes that they counted may be more if spread apart in a line. As children move towards the developmental milestone of conservation of number, they develop the understanding that the number of objects does not change when the objects are moved, rearranged, or hidden. Children need many different experiences with counting objects, as well as maturation, before they can reach this developmental milestone.	Level 1 Recall Level 2 Skill/Concept Level 3 Strategic Thinking	

MATHEMATICS COMMON CORE STATE STANDARDS KINDERGARTEN **Mathematics** **Count to tell the number of objects**			
CC STANDARD	Declarative Knowledge Procedural knowledge	Level of Rigor	Academic Vocabulary
c. Understand that each successive number name refers to a quantity that is one larger.	Students are asked to understand this concept with and without (0-20) objects. For example, after counting a set of 8 objects, students answer the question, “How many would there be if we added one more object?”; and answer a similar question when not using objects, by asking hypothetically, “What if we have 5 cubes and added one more. How many cubes would there be then?”	Level 2 Skills/Concepts	More
K.CC.5 Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	In order to answer “how many?” students need to keep track of objects when counting. Keeping track is a method of counting that is used to count each item once and only once when determining how many. After numerous experiences with counting objects, along with the developmental understanding that a group of objects counted multiple times will remain the same amount, students recognize the need for keeping track in order to accurately determine “how many”	Level 2 Skills/Concepts	Rectangular Array Circle Tracking Line Scattered

MATHEMATICS COMMON CORE STATE STANDARDS KINDERGARTEN **Mathematics** **Compare numbers**			
CC STANDARD	Declarative Knowledge Procedural knowledge	Level of Rigor	Academic Vocabulary
K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. Include groups with up to ten objects.	Students use their counting ability to compare sets of objects (0-10). They may use matching strategies, counting strategies or equal shares to determine whether one group is greater than, less than, or equal to the number of objects in another group	Level 2 Skills/Concepts Level 3 Strategic Thinking	greater, more, less, fewer, equal, same amount
K.CC.7 Compare two numbers between 1 and 10 presented as written numerals.	Students apply their understanding of numerals 1-10 to compare one numeral from another. Thus, looking at the numerals 8 and 10, a student is able to recognize that the numeral 10 represents a larger amount than the numeral 8. Students need ample experiences with actual sets of objects (K.CC.3 and K.CC.6) before completing this standard with only numerals.	Level 2 Skills/Concepts	greater, more, less, fewer, equal, same amount Compare/Contrast

MATHEMATICS COMMON CORE STATE STANDARDS KINDERGARTEN **Mathematics** **Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from**			
CC STANDARD	Declarative Knowledge Procedural knowledge	Level of Rigor	Academic Vocabulary
K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.)	Students demonstrate the understanding of how objects can be joined (addition) and separated (subtraction) by representing addition and subtraction situations in various ways. This objective is focused on understanding the concept of addition and subtraction, rather than reading and solving addition and subtraction number sentences (equations). Please note that it is not until First Grade when "Understand the meaning of the equal sign" is an expectation (1.OA.7). Therefore, before introducing symbols (+, -, =) and equations, kindergarteners require numerous experiences using joining (addition) and separating (subtraction) vocabulary in order to attach meaning to the various symbols. For example, when explaining a solution, kindergartens may state, "Three and two is the same amount as 5." While the meaning of the equal sign is not introduced as a standard until First Grade, if equations are going to be modeled and used in Kindergarten, students must connect the symbol (=) with its meaning (is the same amount/quantity as).	Level 3 Strategic Thinking Level 4 Extended thinking	join, add, separate, subtract, and, same amount as, equal, less, more
K.OA.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	Students solve problems presented in a story format (context) with a specific emphasis on using objects or drawings to determine the solution. This objective builds upon their understanding of addition and subtraction from K.OA.1, to solve problems. Once again, numbers do not exceed 10.	Level 3 Strategic Thinking Level 4 Extended thinking	

MATHEMATICS COMMON CORE STATE STANDARDS KINDERGARTEN **Mathematics** **Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from**			
CC STANDARD	Declarative Knowledge Procedural knowledge	Level of Rigor	Academic Vocabulary
K.OA.**3** Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).	Students develop an understanding of part-whole relationships as they recognize that a set of objects (5) can be broken into smaller sub-sets (3 and 2) and still remain the total amount (5). In addition, this objective asks students to realize that a set of objects (5) can be broken in multiple ways (3 and 2; 4 and 1). Thus, when breaking apart a set **(decompose),** students use the understanding that a smaller set of objects exists within that larger set **(inclusion).** ***Example:*** ***"Bobby Bear is missing 5 buttons on his jacket. How many ways can you use blue and red buttons to finish his jacket? Draw a picture of all your ideas. Students could draw pictures of: 4 blue and 1 red button 3 blue and 2 red buttons 2 blue and 3 red buttons 1 blue and 4 red buttons*** ***In Kindergarten, students need ample experiences breaking apart numbers and using the vocabulary "and" &"same amount as" before symbols (+, =) and equations (5= 3 + 2) are introduced. If equations are used, a mathematical representation (picture, objects) needs to be present as well.***	Level 2 Skills/Concepts	Decompose Pairs Inclusion Addition Relationship Greater than Less Than Equal Same as Model ConcreteExperience
K.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation	Students build upon the understanding that a number (less than or equal to 10) can be decomposed into parts (K.OA.3) to find a missing part of 10. Through numerous concrete experiences, kindergarteners model the various sub-parts of ten and find the missing part of 10. ***Example:*** ***When working with 2-color beans, a student determines that 4 more beans are needed to make a total of 10.*** In addition, kindergarteners use various materials to solve tasks that involve decomposing and composing 10.	Level 2 Skill/Concepts	

MATHEMATICS COMMON CORE STATE STANDARDS KINDERGARTEN **Mathematics** **Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from**			
CC STANDARD	Declarative Knowledge Procedural knowledge	Level of Rigor	Academic Vocabulary
K.OA.**5** Fluently adds and subtracts within 5.	Students are fluent when they display accuracy (correct answer), efficiency (a reasonable amount of steps in about 3 seconds without resorting to counting), and flexibility (using strategies such as the distributive property). Students develop fluency by understanding and internalizing the relationships that exist between and among numbers. Oftentimes, when children think of each "fact" as an individual item that does not relate to any other "fact", they are attempting to memorize separate bits of information that can be easily forgotten. Instead, in order to fluently add and subtract, children must first be able to see sub-parts within a number (inclusion, K.CC.4.c). Once they have reached this milestone, children need repeated experiences with many different types of concrete materials (such as cubes, chips, and buttons) over an extended amount of time in order to recognize that there are only particular sub-parts for each number. Therefore, children will realize that if 3 and 2 is a combination of 5, then 3 and 2 cannot be a combination of 6. ***For example, after making various arrangements with toothpicks, students learn that only a certain number of sub-parts exist within the number 4: Then, after numerous opportunities to explore, represent and discuss "4", a student becomes able to fluently answer problems such as, "One bird was on the tree. Three more birds came. How many are on the tree now?"; and "There was one bird on the tree. Some more came. There are now 4 birds on the tree. How many birds came?"*** Traditional flash cards or timed tests have not been proven as effective instructional strategies for developing fluency.* Rather, numerous experiences with breaking apart actual sets of objects help children internalize parts of number	Level 2 Skills/Concepts	Accuracy Efficiency Fluency Subtraction Addition Concrete Materials Distributive Property Facts

MATHEMATICS COMMON CORE STATE STANDARDS KINDERGARTEN **Mathematics** **Number and Operations in Base Ten**			
CC STANDARD	Declarative Knowledge Procedural knowledge	Level of Rigor	Academic Vocabulary
K.NBT.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8)*; understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. * *Kindergarten students should see addition and subtraction equations, and student writing of equations in kindergarten is encouraged, but it is not required*	Students explore numbers 11-19 using representations, such as manipulatives or drawings. Keeping each count as a single unit, kindergarteners use 10 objects to represent “10” rather than creating a unit called a ten (unitizing) as indicated in the First Grade CCSS standard 1.NBT.1a: 10 can be thought of as a bundle of ten ones — called a “ten.”	Level 2 Skill/Concept	Ten Strips Ones/Units Compose Decompose Represent Manipulatives

MATHEMATICS COMMON CORE STATE STANDARDS KINDERGARTEN **Mathematics** **Measurement and Data**			
CC STANDARD	Declarative Knowledge Procedural knowledge	Level of Rigor	Academic Vocabulary
K.MD.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	Students describe measurable attributes of objects, such as length, weight, size, and color. ***For example, a student may describe a shoe with one attribute, "Look! My shoe is blue, too!", or more than one attribute, "This shoe is heavy! It's also really long."***	Level 1 Recall	Length Weight Size Color Measure Attributes
K.MD.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*	Direct comparisons are made when objects are put next to each other, such as two children, two books, two pencils. ***For example, a student may line up two blocks and say, "The blue block is a lot longer than the white one." Students are not comparing objects that cannot be moved and lined up next to each other.*** Similar to the development of the understanding that keeping track is important to obtain an accurate count, kindergarten students need ample experiences with comparing objects in order to discover the importance of lining up the ends of objects in order to have an accurate measurement. As this concept develops, children move from the idea that ***"Sometimes this block is longer than this one and sometimes it's shorter (depending on how I lay them side by side) and that's okay." to the understanding that "This block is always longer than this block (with each end lined up appropriately)."*** Since this understanding requires conservation of length, a developmental milestone for young children, kindergarteners need multiple experiences measuring a variety of items and discussing findings with one another.	Level 2 Skill/Concepts	Length Weight Height Size Color Measure Attributes Compare/Contrast Taller Shorter

MATHEMATICS COMMON CORE STATE STANDARDS KINDERGARTEN **Mathematics** **Measurement and Data**			
CC STANDARD	Declarative Knowledge Procedural knowledge	Level of Rigor	Academic Vocabulary
K.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. *(Limit category counts to be less than or equal to 10)*	Students identify similarities and differences between objects (e.g., size, color, shape) and use the identified attributes to sort a collection of objects. Once the objects are sorted, the student counts the amount in each set. Once each set is counted, then the student is asked to sort (or group) each of the sets by the amount in each set. ***For example, when exploring a collection of buttons:*** ***First, the student separates the buttons into different piles based on color (all the blue buttons are in one pile, all the orange buttons are in a different pile, etc.). Then the student counts the number of buttons in each pile: blue (5), green (4), orange (3), and purple (4). Finally, the student organizes the groups by the quantity in each group (Orange buttons (3), Green buttons next (4), Purple buttons with the green buttons because purple also had (4), Blue buttons last (5).*** This objective helps to build a foundation for data collection in future grades as they create and analyze various graphical representations.	Level 2 Skill/Concepts	Categories Similarities Differences Attributes Sort Classify Data Collection

MATHEMATICS COMMON CORE STATE STANDARDS KINDERGARTEN **Geometry** **Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).**			
CC STANDARD	Declarative Knowledge Procedural knowledge	Level of Rigor	Academic Vocabulary
K.G.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*.	Students locate and identify shapes in their environment. ***For example, a student may look at the tile pattern arrangement on the hall floor and say, "Look! I see squares! They are next to the triangle."*** Students use positional words (such as those italicized in the standard) to describe objects in the environment. Kindergarten students need numerous experiences identifying the location and position of actual two-and-three dimensional objects in their classroom/school prior to describing location and position of two-and-three dimension representations on paper	Level 1 Recall	*above*, *below*, *beside*, *in front of*, *behind*, and *next to*. Shapes Locate Identify
K.G.2 Correctly name shapes regardless of their orientations or overall size	Through numerous experiences exploring and discussing shapes, students begin to understand that certain attributes define what a shape is called (number of sides, number of angles, etc.) and that other attributes do not (color, size, orientation). As the teacher facilitates discussions about shapes ("Is it still a triangle if I turn it like this?"), children question what they "see" and begin to focus on the geometric attributes. Kindergarten students typically do not yet recognize triangles that are turned upside down as triangles, since they don't "look like" triangles. Students need ample experiences manipulating shapes and looking at shapes with various typical and atypical orientations. Through these experiences, students will begin to move beyond what a shape "looks like" to identifying particular geometric attributes that define a shape.	Level 1 Recall	Shapes Attributes Sides Angle
K.G.3 Identify shapes as two dimensional (lying in a plane, "flat") or three dimensional ("solid").	Students identify objects as flat (2 dimensional) or solid (3 dimensional). As the teacher embeds the vocabulary into students' exploration of various shapes, students use the terms two-dimensional and three-dimensional as they discuss the properties of various shapes.	Level 1 Recall	2-D Shapes 3-D Shapes Properties Plane Solid

MATHEMATICS COMMON CORE STATE STANDARDS
KINDERGARTEN

Mathematics
Geometry

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

CC STANDARD	Declarative Knowledge Procedural knowledge	Level of Rigor	Academic Vocabulary
K.G.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length)	Students relate one shape to another as they note similarities and differences between and among 2-D and 3-D shapes using informal language. ***For example, when comparing a triangle and a square, they note that they both have sides, but the triangle has 3 sides while the square has 4. Or, when building in the Block Center, they notice that the faces on the cube are all square shapes.***	Level 3 Strategic Thinking Level 4 Extended Thinking	Compare/contrast Orientations Attributes Vertices Equal Corners Length Similarities Differences
K.G.5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	Students apply their understanding of geometric attributes of shapes in order to create given shapes. ***For example, students may roll a clump of play-doh into a sphere or use their finger to draw a triangle in the sand table, recalling various attributes in order to create that particular shape.***	Level 2 Skill/Concepts Level 3 Strategic Thinking	Geometric Attributes Building 3-D Shapes
K.G .6 Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"	This standard moves beyond identifying and classifying simple shapes to manipulating two or more shapes to create a new shape. This concept begins to develop as students move, rotate, flip, and arrange puzzle pieces to complete a puzzle. Kindergarteners use their experiences with puzzles to use simple shapes to create different shapes. ***For example, when using basic shapes to create a picture, a student flips and turns triangles to make a rectangular house.***	Level 2 Skill/Concept Level 3 Strategic Thinking	Simple Shapes Create Manipulate Move Rotate Flip Arrange

Common Core Student Math Vocabulary

2012-2013 Version

Kindergarten	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade	6th Grade
Zero One Hundred Greater More Less fewer equal same amount join add separate subtract and same amount as equal less more number words left over length weight heavy long more of less of longer taller shorter color words descriptive words	adding to taking from putting together taking apart comparing unknowns addition equal shares *halves* *fourths* *quarters* *half of* *fourth of* *quarter of*	Standard units of measurement Inch centimeter number of angles number of equal faces triangles quadrilaterals pentagons hexagons cubes columns trapezoid	products groups of quotients partitioned equally multiplication division equal groups arrays equations unknown operation multiply divide factor product quotient strategies properties mental computation addend sum place value partition(ed) equal parts fraction equal distance (intervals), equivalent equivalence reasonable denominator	factor pairs factor multiple prime composite convert/conversion relative size liquid volume mass length distance kilometer (km) meter (m) centimeter (cm) kilogram (kg) gram (g), liter (L), milliliter (mL) inch (in), foot (ft), yard (yd), mile (mi), ounce (oz), pound (lb), cup (c), pint (pt), quart (qt), gallon (gal) line plot graph ray angle circle fraction intersect	parentheses brackets braces numerical expressions numerical patterns rules ordered pairs coordinate plane **right rectangular prism** **unit** **unit cube** **cubic units (cubic cm, cubic in. cubic ft)** coordinate system coordinate plane first quadrant points lines axis/axes, x-axis, y-axis horizontal vertical intersection of lines, origin ordered pairs coordinates x-coordinate y-coordinate	one-variable equations inequalities dependent and independent variables statistical variability histogram box plot

Update on: November 12, 2011

squares circles triangles rectangles hexagons cubes cones cylinders spheres analyze compare create compose			numerator comparison compare justify greater than > less than < estimate time time intervals minute hour elapsed time measure liquid volume mass standard units metric gram (g) kilogram (kg) liter (L) scale scaled picture graph scaled bar graph line plot data attribute area square unit plane figure gap overlap square cm square m square in., square ft, nonstandard units tiling side length decomposing perimeter	one-degree angle protractor vertex/vertices right angle acute obtuse perpendicular parallel right triangle isosceles triangle equilateral triangle scalene triangle line of symmetry symmetric figures	attribute category subcategory hierarchy	

			plane figure linear area polygon quadrilateral open figure closed figure three sided 2-dimensional 3-dimensional rhombi			