Grade K Unit 4: Geometry, Measurement, and Data

Content Area: **Math**
Course(s): **Math Grade K**
Time Period: **MP4**
Length: **45**
Status: **Published**

NJSLS Math

K.CC.A.1	Count to 100 by ones and by tens.
K.CC.B.5	Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.
K.CC.C.6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.
K.OA.A.4	For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.
K.OA.A.5	Demonstrate accuracy and efficiency for addition and subtraction within 5.
K.M.A.1	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
K.M.A.2	Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference.
K.M.B.3	Understand that certain objects are coins and dollar bills, and that coins and dollar bills represent money. Identify the values of all U.S. coins and the one-dollar bill.
K.DL.A.1	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.
K.G.A.1	Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
K.G.A.2	Correctly name shapes regardless of their orientations or overall size.
K.G.B.4	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).
K.G.B.5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
K.G.B.6	Compose simple shapes to form larger shapes.

Unit Focus

- Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres)
- Analyze, compare, create and compose shapes

- Describe and compare measurable attributes
- Work with money

Standards for Math Practice

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.6	Attend to precision.
MA.K-12.7	Look for and make use of structure.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Critical Knowledge & Skills

NJSLS Math	Suggested Math Practices	Critical Knowledge and Skills
K.G.A.3 (A) Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).	MP.7 Look for and make use of structure.	Concepts: • Shapes may be flat or solid. Students will be able to: • Identify shapes as two-dimensional (lying in a plane, flat) or three-dimensional (not flat, solid). • Compare two- and three-dimensional shapes, in different sizes, and orientations. Learning Goal 1: • Identify shapes as two-dimensional (lying in a plane, flat) or three-dimensional (not flat, solid).

K.CC.A.1 (**M**) Count to 100 by ones and by tens.	MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concepts: • Number names and the count sequence up to 100 Students will be able to: • Count orally by ones up to 100. • Count orally by tens up to 100. Learning Goal 2: • Count to 100 by ones and by tens.
K.DL.A.1 (**S**) Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Clarification: Limit category counts to be less than or equal to 10)  Climate Change Example: With prompting and support, students may ask and answer questions about objects that may be reused, objects that may be recycled, and objects that must be placed in the trash. Students may classify used objects into those categories with no more than 10 objects in each category. Students may count the number of objects in each category and sort the categories by count.	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure.	Concepts: • Objects can be sorted based on their properties. Students will be able to: • Sort objects into categories. • Count the number of objects in each category. • Arrange the categories in order based on the count of objects in each category. Learning Goal 3: • Classify objects into given categories and count the objects in each category (up to 10 objects). • Arrange the categories in order based on the count of objects in each category.
K.G.A.2 (**A**) Correctly name shapes regardless of their orientations or overall size.	MP.7 Look for and make use of structure.	Concepts: • Shapes have names. • Shapes can have the same

		names but appear different. Students will be able to: • Correctly names shapes regardless of their orientation or overall size. Learning Goal 4: • Correctly names shapes regardless of their orientation or overall size.
K.G.A.1 (**A**) 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.	MP.7 Look for and make use of structure.	Concepts: • Shapes have names. • Positional words (above, below, besides, in front of, behind, next to) Students will be able to: • Name shapes in order to describe objects in the environment. • Use terms such as above, below, beside, in front of, behind, and next to in order to describe relative positions of objects. Learning Goal 5: • Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
K.G.B.4 (**S**) Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g.,	MP.7 Look for and make use of structure.	Concepts: • Orientation does not alter attributes or size. • Shapes may have sides of

number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).		unequal or equal length. • Shapes may or may not have the same number of sides or ‘corners’. Students will be able to: • Compare two- and three-dimensional shapes in different sizes and in different orientations and identify similarities and differences. • Compare parts of two- and three-dimensional shapes [e.g. number of sides, number of vertices (corners)]. • Compare attributes of two- and three-dimensional shapes [e.g. sides have equal length.] • Use informal language to describe similarities, differences, parts, and other attributes when comparing two-and three-dimensional shapes, in different sizes and orientations. Learning Goal 6: • Use informal language to describe similarities, differences, parts number of sides, number of corners), and other attributes (having sides of equal length) when comparing two- and three-dimensional shapes, in different sizes and orientations.
K.CC.C.6 (**M**) Identify whether the number of objects in one group	MP.2 Reason abstractly and	Concepts:

is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Clarification: Include groups with up to ten objects.)	quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	• Different groups can have different numbers of objects. • Numbers of objects can be compared using phrases such as greater than, less than and equal to. Students will be able to: • Compare the number of objects (up to 10) in two groups. • Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group. Learning Goal 7: • Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (groups of up to 10 objects).
K.CC.B.5 (**M**) 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.	MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concepts: • No new concepts introduced Students will be able to: • Count to tell the number of objects arranged in a line, rectangular array, circle, or scattered configuration. • Count to tell the number of objects when asked how many? questions. • Given a number from 1-20, count out that many objects.

		Learning Goal 8: • Count accurately up to 20 objects in different arrangements. • Answer "how many?" questions for groups of up to 20 objects.
K.G.B.5 (**S**) Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.  Climate Change Example: Students may use sticks and clay to model trees and umbrellas and may then draw shapes (e.g., triangle, rectangle) to model those objects. With prompting and support, they may ask and answer questions about how trees and umbrellas may be used to reduce the warming effect of sunlight.	MP.1 Make sense of problems and persevere in solving them. MP.4 Model with mathematics. MP.7 Look for and make use of structure.	Concepts: • Basic shapes exist in real world objects. Students will be able to: • Recognize basic shapes in the real world. • Use objects (clay, sticks, etc) to model shapes. • Model shapes in the world by drawing shapes. Learning Goal 9: • Model shapes in the world by building and drawing shapes.
K.OA.A.4 (**M**) 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.	MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.7 Look for and make use of structure. MP.8 Look for and express	Concepts: • Relationships between numbers that make a ten. Students will be able to: • Find a missing part of 10 using objects. • Given a number from 1 to 9, use drawings, or equations to find the number that makes 10. Learning Goal 10: • Identify the missing number that makes 10

	regularity in repeated reasoning.	when added to numbers from 1 to 9. • Represent the addition process using objects, drawings, or equations.
K.G.B.6 (**S**) Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?".	MP.1 Make sense of problems and persevere in solving them. MP.4 Model with mathematics. MP.7 Look for and make use of structure.	Concepts: • Shapes can be combined to make larger shapes. Students will be able to: • Compose simple shapes to form larger shapes. Learning Goal 11: • Compose simple shapes to form larger shapes.
K.M.A.2 (**A**) 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.	MP.6 Attend to precision. MP.7 Look for and make use of structure.	Concepts: • When comparing objects by measuring, each object must have the same starting point. • Moving an object does not change its measure. Students will be able to: • Directly compare and describe two objects with measurable attributes in common using more of or less of. Learning Goal 12: • Directly compare two objects with a measurable attribute in common; use more of or less of to compare the objects.
K.M.A.1 (**A**) Describe measurable attributes of objects, such as length or weight. Describe several	MP.7 Look for and make use of structure.	Concepts: • Measurable attributes:

measurable attributes of a single object.		length, weight, size (volume) • A single object can have more than one measurable attribute. Students will be able to: • Identify measurable attributes. • Describe the measurable attributes of multiple objects. • Describe multiple measurable attributes of a single object. Learning Goal 13: • Describe measurable attributes of multiple objects and describe several measurable attributes of a single object.
K.M.B.3 (**A**) Understand that certain objects are coins and dollar bills, and that coins and dollar bills represent money. Identify the values of all U.S. coins and the one-dollar bill.	MP.7 Look for and make use of structure.	Concepts: • Certain objects are called coins and dollar bills. • Coins and dollar bills represent money. • Money has a given value. Students will be able to: • Identify coins and dollar bills, understanding that they represent money. • Recognize U.S. coins and the one-dollar bill, knowing their values. • Understand the concept of money and how coins and dollar bills are used as

		currency. Learning Goal 14: • Recognize coins and dollar bills as forms of money and identify the values of U.S. coins (penny, nickel, dime, quarter) and the one-dollar bill.
K.OA.A.5 (**M**) Demonstrate accuracy and efficiency for addition and subtraction within 5.	MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning.	Concepts: • No new concepts introduced Students will be able to: • Add and subtract within 5 with accuracy and efficiency. Learning Goal 15: • Use mental math strategies to solve addition and subtractions facts within 5.

School/District Formative Assessment Plan

- Topic 13-1 through 13-7 Quick Check (found in Savvas Realize)
- Topic 14-1 through 14-6 Quick Check (found in Savvas Realize)
- Topic 15-1 through 15-10 Quick Check (found in Savvas Realize)

School/District Summative Assessment Plan

- Topic 13 Assessment
- Topic 14 Assessment

- Topic 15 Assessment

Benchmark & Alternative Assessments

- STAR Renaissance
- Performance Tasks (found in Savvas Realize)

Focus Mathematical Concepts

Pre-requisite skills

- General number recognition
- Oral counting up to 10
- 1:1 correspondence

Common Misconceptions

- Students many times use incorrect terminology when describing shapes. For example students may say a cube is a square or that a sphere is a circle. The use of the two-dimensional shape that appears to be part of a three-dimensional shape to name the three-dimensional shape is a common misconception. Work with students to help them understand that the two-dimensional shape is a part of the object but it has a different name.

Number Fluency

- K.OA.A.5 Add and subtract within 5.

District/School Tasks

- Pick A Project (found in Savvas Realize)
- Performance Tasks (found in Savvas Realize)

District/School Primary, Supplemental, & Intervention Resources

- Envisions by Savvas

- STAR Renaissance

- Freckle Math
- Connecting Math Concepts
- Corrective Math

Instructional Best Practices/Open Educational Resources

Illustrative Mathematics

Desmos

Numeracy Tasks

Building Thinking Classrooms Tasks

Open Middle Math Tasks

Resources from Dr. Eric Milou

Career Readiness, Life Literacies, and Key Skills

9.1.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job.
9.1.2.CR.1	Recognize ways to volunteer in the classroom, school and community.
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
9.4.2.IML.2	Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).

Life Literacies & Key Skills

9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
9.4.2.IML.2	Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).

Interdisciplinary Connections

K-PS2-1	Plan and conduct an investigation to compare the effects of different strengths or

	different directions of pushes and pulls on the motion of an object.
K-PS3-1	Make observations to determine the effect of sunlight on Earth's surface.
K-PS3-2	Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.
K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.
W.WR.K.5	With prompting and support, generate questions through shared research in response to a topic, text, or stimulus (e.g., event, photograph, video, book).