



Kindergarten Math





Kindergarten Mathematics Teaching & Learning Framework

Quarter 1		Quarter 2		Quarter 3	Quarter 4	
Unit 1 5 weeks	Unit 2 4 weeks	Unit 3 6 weeks	Unit 4 3 weeks	Unit 5 9 weeks	Unit 6 4 weeks	Unit 7 5 weeks
Counting With Friends	Sophisticated Shapes	Comparing Numbers	Measuring and Analyzing Data	Investigating Addition and Subtraction (within 5)	Further Investigation of Addition and Subtraction (within 10)	Review, Mastery and Extend
<p>MGSEK.CC.1 (Count to 100 by <u>ones</u>)</p> <p>MGSEK.CC.2 (Counting from a known sequence)</p> <p>MGSEK.CC.3 (Write numbers from <u>0-10</u>)</p> <p>MGSEK.CC.4 (Relationship between numbers and quantities from <u>0-5</u>)</p> <p>MGSEK.CC.5 (Counting objects in a line, circle, array up to <u>10 items</u>)</p>	<p>MGSEK.G.1 (Describe objects using names of shapes)</p> <p>MGSEK.G.2 (Name shapes)</p> <p>MGSEK.G.3 (Name 2 and 3-D shapes)</p> <p>MGSEK.G.4 (Analyze and compare 2 and 3-D shapes)</p> <p>MGSEK.G.5 (Model shapes)</p> <p>MGSEK.G.6 (Compose simple shapes)</p> <p>MGSEK.MD.3 (Classify objects)</p>	<p>MGSEK.CC.1 (Count to 100 by <u>ones</u>)</p> <p>MGSEK.CC.3 (Write numbers from 0-20)</p> <p>MGSEK.CC.4 (Relationship between numbers and quantities from <u>0-10</u>)</p> <p>MGSEK.CC.5 (Counting objects in a line, circle, array up to <u>20 items, up to 10 in scattered</u>)</p> <p>MGSEK.CC.6 (Comparing objects up to 10)</p> <p>MGSEK.CC.7 (Comparing numerals 1-10)</p>	<p>MGSEK.MD.1 (Describe attributes of objects)</p> <p>MGSEK.MD.2 (Compare objects)</p> <p>MGSEK.MD.3 (Classify objects)</p>	<p>MGSEK.CC.1 (Count to 100 by <u>ones and tens</u>)</p> <p>MGSEK.CC.6 (Comparing objects up to 10)</p> <p>MGSEK.CC.7 (Comparing numerals 1-10)</p> <p>MGSEK.OA.1 (Represent addition and subtraction within <u>5</u>)</p> <p>MGSEK.OA.2 (Solve addition and subtraction word problems within <u>5</u>)</p> <p>MGSEK.OA.3 (Decompose numbers <u>5 or less</u>)</p> <p>MGSEK.OA.4 (Find the number to make <u>5</u>)</p> <p>MGSEK.OA.5 (Add and subtract within 5)</p>	<p>MGSEK.OA.1 (Represent addition and subtraction <u>within 10</u>)</p> <p>MGSEK.OA.2 (Solve addition and subtraction word problems <u>within 10</u>)</p> <p>MGSEK.OA.3 (Decompose numbers <u>to 10</u>)</p> <p>MGSEK.OA.4 (Find any number to make <u>10</u>)</p> <p>MGSEK.OA.5 (Fluently add and subtract <u>within 5</u>)</p> <p>MGSEK.NBT.1 (Compose and decompose numbers from 11-19)</p> <p>MGSEK.MD.3 (Classify objects)</p>	<p>Review all standards based on student needs.</p> <p>Mastery:</p> <p>MGSEK.OA.1 (Represent addition and subtraction <u>within 10</u>)</p> <p>MGSEK.OA.2 (Solve addition and subtraction word problems <u>within 10</u>)</p> <p>MGSEK.OA.3 (Decompose numbers <u>to 10</u>)</p> <p>MGSEK.OA.4 (Find any number to make <u>10</u>)</p> <p>Extend:</p> <p>MGSE1.OA.1 (Word problems within 20)</p> <p>MGSE1.OA.2 (Word problems of three whole numbers)</p> <p>MGSE1.OA.6 (Add and subtract within 20)</p> <p>MGSE1.NBT.1 (Count to 120)</p>

These units were written to build upon concepts from prior units, so later units contain tasks that depend upon the concepts addressed in earlier units.

All units will include the Mathematical Practices and indicate skills to maintain

NOTE: Mathematical standards are interwoven and should be addressed throughout the year in as many different units and tasks as possible in order to stress the natural connections that exist among mathematical topics.

Grades K-2 Key: MGSE= Mathematics Georgia Standards of Excellence CC = Counting and Cardinality, G= Geometry, MD=Measurement and Data, NBT= Number and Operations in Base Ten, OA = Operations and Algebraic Thinking.



Standards for Mathematical Practice

Mathematical Practices are listed with each grade's mathematical content standards to reflect the need to connect the mathematical practices to mathematical content in instruction.

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council’s report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one’s own efficacy).

Students are expected to:

1. Make sense of problems and persevere in solving them.

In Kindergarten, students begin to build the understanding that doing mathematics involves solving problems and discussing how they solved them. Students explain to themselves the meaning of a problem and look for ways to solve it. Younger students may use concrete objects or pictures to help them conceptualize and solve problems. They may check their thinking by asking themselves, “Does this make sense?” or they may try another strategy.

2. Reason abstractly and quantitatively.

Younger students begin to recognize that a number represents a specific quantity. Then, they connect the quantity to written symbols. Quantitative reasoning entails creating a representation of a problem while attending to the meanings of the quantities.

3. Construct viable arguments and critique the reasoning of others.

Younger students construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They also begin to develop their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” and “Why is that true?” They explain their thinking to others and respond to others’ thinking.

4. Model with mathematics.

In early grades, students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed.



Standards for Mathematical Practice continued

5. Use appropriate tools strategically.

Younger students begin to consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, kindergarteners may decide that it might be advantageous to use linking cubes to represent two quantities and then compare the two representations side-by-side.

6. Attend to precision.

As kindergarteners begin to develop their mathematical communication skills, they try to use clear and precise language in their discussions with others and in their own reasoning.

7. Look for and make use of structure.

Younger students begin to discern a pattern or structure. For instance, students recognize the pattern that exists in the teen numbers; every teen number is written with a 1 (representing one ten) and ends with the digit that is first stated. They also recognize that $3 + 2 = 5$ and $2 + 3 = 5$.

8. Look for and express regularity in repeated reasoning.

In the early grades, students notice repetitive actions in counting and computation, etc. For example, they may notice that the next number in a counting sequence is one more. When counting by tens, the next number in the sequence is “ten more” (or one more group of ten). In addition, students continually check their work by asking themselves, “Does this make sense?”



Counting and Cardinality (K.CC)

Know number names and the count sequence.

MGSEK.CC.1 Count to 100 by ones and by tens.

MGSEK.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

MGSEK.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).

Count to tell the number of objects.

MGSEK.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. (One-to-one correspondence).
- b. Understand that the last number name said tells the number of objects counted (cardinality). The number of objects is the same regardless of their arrangement or the order in which they were counted.
- c. Understand that each successive number name refers to a quantity that is one larger.

MGSEK.CC.5

Count to answer ‘how many?’ questions.

- a. Count to answer “how many?” questions about as many as 20 things arranged in a variety of ways (a line, a rectangular array, or a circle), or as many as 10 things in a scattered configuration.
- b. Given a number from 1-20, count out that many objects.
- c. Identify and be able to count pennies within 20. (Use pennies as manipulatives in multiple mathematical contexts.)

Compare numbers

MGSEK.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.

MGSEK.CC.7 Compare two numbers between 1 and 10 presented as written numerals. Include groups with up to ten objects.



Operations and Algebraic Thinking (K.OA)

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from

MGSEK.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.

MGSEK.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.

MGSEK.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. (Drawings need not include an equation).

MGSEK.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.

MGSEK.OA.5 Fluently add and subtract within 5.

Work with numbers 11–19 to gain foundations for place value

MGSEK.NBT.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones to understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$).



Measurement and Data (K.MD)

Describe and compare measurable attributes

MGSEK.MD.1 Describe several measurable attributes of an object, such as length or weight. For example, a student may describe a shoe as, “This shoe is heavy! It is also really long!”

MGSEK.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.

Classify objects and count the number of objects in each category

MGSEK.MD.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.

Geometry (K.G)

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

MGSEK.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.

MGSEK.G.2 Correctly name shapes regardless of their orientations or overall size.

MGSEK.G.3 Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

Analyze, compare, create, and compose shapes

MGSEK.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).

MGSEK.G. 5 Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.

MGSEK.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?”