



1st Grade Math





First Grade Mathematics Teaching & Learning Framework

Quarter 1			Quarter 2	Quarter 3	Quarter 4	
Unit 1 1-2 weeks	Unit 2 4-5 weeks	Unit 3 3 weeks	Unit 4 9 weeks	Unit 5 9 weeks	Unit 6 3 weeks	Unit 7 6 weeks
Creating Routines Using Data	Developing Base Ten Number Sense	Sorting, Comparing and Ordering	Operations and Algebraic Thinking Addition and Subtraction	Understanding Place Value Addition and Subtraction	Understanding Shapes and Fractions	Review, Mastery and Extend
MGSE1.NBT.1 (Count to 120) MGSE1.MD.4 (Data)	MGSE1.NBT.1 (Count to 120) MGSE1.NBT.2 (Two-digits represent tens & ones) MGSE1.NBT.7 (Dimes) MGSE1.OA.1 (Word problems within <u>10</u>) MGSE1.OA.6 (Add subtract within <u>10</u>)	MGSE1.MD.1 (Ordering objects) MGSE1.MD.2 (Determining length) MGSE1.MD.3 (Time) MGSE1.MD.4 (Data)	MGSE1.OA.1 (Word problems within 20) MGSE1.OA.2 (Word problems of three whole numbers) MGSE1.OA.3 (Apply properties) MGSE1.OA.4 (Subtraction as unknown-addend) MGSE1.OA.5 (Counting on for addition and subtraction) MGSE1.OA.6 (Add and subtract within 20) MGSE1.OA.7 (Meaning of equal sign) MGSE1.OA.8 (Determine unknown)	MGSE1.OA.1 (Word problems within 20) MGSE1.OA.2 (Word problems of three whole numbers) MGSE1.OA.4 (Subtraction as unknown-addend) MGSE1.OA.6 (Add and subtract within 20) MGSE1.OA.7 (Meaning of equal sign) MGSE1.NBT.2 (Two-digits represent tens and ones) MGSE1.NBT.3 (Compare numbers) MGSE1.NBT.4 (Add within 100) MGSE1.NBT.5 (Mentally find 10 more/less) MGSE1.NBT.6 (Subtract multiples of 10) MGSE1.NBT.7 (Dimes)	MGSE1.G.1 (Defining Attributes) MGSE1.G.2 (Compose shapes) MGSE1.G.3 (Partitioning) MGSE1.MD.4 (Data)	Review all standards based on student needs. <u>Mastery:</u> MGSE1.OA.1 (Word problems within 20) MGSE1.OA.2 (Word problems of three whole numbers) MGSE1.OA.6 (Add & subtract within 20) <u>Extend:</u> MGSE.2.NBT.1 (Place value – 100s) MSSE2.NBT.3 (Read and write numbers to 1,000) MGSE2.OA.1 (Word problems)

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 first grade, students realize 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?” They are willing to try other approaches.

2. Reason abstractly and quantitatively.

Younger students recognize that a number represents a specific quantity. 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.

First graders construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They also practice their mathematical communication skills as they participate in mathematical discussions involving questions like “How did you get that?” “Explain your thinking,” and “Why is that true?” They not only explain their own thinking, but listen to others’ explanations. They decide if the explanations make sense and ask questions.



Standards for Mathematical Practice continued

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.

5. Use appropriate tools strategically.

In first grade, students begin to consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, first graders decide it might be best to use colored chips to model an addition problem.

6. Attend to precision.

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

7. Look for and make use of structure.

First graders begin to discern a pattern or structure. For instance, if students recognize $12 + 3 = 15$, then they also know $3 + 12 = 15$. (*Commutative property of addition.*) To add $4 + 6 + 4$, *the first two numbers can be added to make a ten, so $4 + 6 + 4 = 10 + 4 = 14$.*

8. Look for and express regularity in repeated reasoning.

In the early grades, students notice repetitive actions in counting and computation, etc. When children have multiple opportunities to add and subtract “ten” and multiples of “ten” they notice the pattern and gain a better understanding of place value. Students continually check their work by asking themselves, “Does this make sense?”



Operations and Algebraic Thinking (1.OA)

Represent and solve problems involving addition and subtraction.

MGSE1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

MGSE1.OA.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. Understand and apply properties of operations and the relationship between addition and subtraction.

MGSE1.OA.3 Apply properties of operations as strategies to add and subtract.

Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.)

MGSE1.OA.4 Understand subtraction as an unknown-addend problem. For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8. Add and subtract within 20.

MGSE1.OA.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

MGSE1.OA.6 Add and subtract within 20.

- a. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition & subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).
- b. Fluently add and subtract within 10.



Work with addition and subtraction equations

MGSE1.OA.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.

MGSE1.OA.8 Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = \square - 3$, $6 + 6 = \Delta$.

Number and Operations in Base Ten (1.NBT)

Extend the counting sequence

MGSE1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Understand place value

MGSE1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones.

Understand the following as special cases:

- a. 10 can be thought of as a bundle of ten ones — called a “ten.”
- b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
- c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).



Understand place value (continued)

MGSE1.NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$. Use place value understanding and properties of operations to add and subtract.

MGSE1.NBT.4 Add within 100, including adding a two-digit number and a one-digit number and adding a two-digit number and a multiple of ten (e.g., $24 + 9$, $13 + 10$, $27 + 40$), using concrete models or drawings and strategies based on place value, properties of operations, and/or relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

MGSE1.NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

MGSE1.NBT.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range of 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. (e.g. $70 - 30$, $30 - 10$, $60 - 60$).

MGSE1.NBT.7 Identify dimes, and understand ten pennies can be thought of as a dime. (Use dimes as manipulatives in multiple mathematical contexts.)

Measurement and Data (1.MD)

Measure lengths indirectly and by iterating length units

MGSE1.MD.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.

MGSE1.MD.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. (Iteration)

Tell and write time

MGSE1.MD.3 Tell and write time in hours and half-hours using analog and digital clocks.



Represent and interpret data

MGSE1.MD.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Geometry (1.G)

Reason with shapes and their attributes.

MGSE1.G.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

MGSE1.G.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cube right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. This is important for the future development of spatial relations which later connects to developing understanding of area, volume, and fractions.

MGSE1.G.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.