First Grade Standards

These are the standards for what is taught throughout the year in First Grade. It is the expectation that these skills will be reinforced after they have been taught.

Mathematical Practice Standards Taught Throughout the Year		
1. Make sense of problems and persevere in solving them	**2. Reason abstractly and quantitatively**	**3. Construct viable arguments and critique the reasoning of others**
In Grade 1, 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.	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. In first grade students make sense of quantities and relationships while solving tasks. They represent situations by decontextualizing tasks into numbers and symbols. For example, "There are 60 children on the playground and some children go line up. If there are 20 children still playing, how many children lined up?" Students translate the situation into the equation: $60 - 20 = \square$ and then solve the task. Students also contextualize situations during the problem solving process. For example, students refer to the context of the task to determine they need to subtract 20 from 60 because the total	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. For example, "There are 15 books on the shelf. If you take some books off the shelf and there are now 7 left, how many books did you take off the shelf?" Students might use a variety of strategies to solve the task and then share and discuss their problem solving strategies with their classmates.

	number of children on the playground is the total number less the 20 that are still playing. Students might also reason about ways to partition two-dimensional geometric figures into halves and fourths.	

First Grade Standards

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Mathematical Practice Standards Taught Throughout the Year		
4. Model with mathematics	**5. Use appropriate tools strategically**	**6. Attend to precision**
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. First grade students model real-life mathematical situations with a number sentence or an equation and check to make sure equations accurately match the problem context. Students use concrete models and pictorial representations while solving tasks and also write an equation to model problem situations. For example, to solve the problem, "There are 11 bananas on the counter. If you eat 4 bananas, how many are left?" students could write the equation $11 - 4 = 7$. Students also create a story context for an equation such as $13 - 7 = 6$.	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. In first grade students use tools such as counters, place value (base ten) blocks, hundreds number boards, number lines, concrete geometric shapes (e.g., pattern blocks, 3-dimensional solids), and virtual representations to support conceptual understanding and mathematical thinking. Students determine which tools are the most appropriate to use. For example, when solving $12 + 8 = \square$, students explain why place value blocks are more appropriate than counters.	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. In Grade 1, students use precise communication, calculation, and measurement skills. Students are able to describe their solutions strategies to mathematical tasks using grade-level appropriate vocabulary, precise explanations, and mathematical reasoning. When students measure objects iteratively (repetitively), they check to make sure there are no gaps or overlaps. Students regularly check their work to ensure the accuracy and reasonableness of solutions.

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First Grade Standards

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Mathematical Practice Standards Taught Throughout the Year	
7. Look for and make use of structure	**8. Look for and express regularity in repeated reasoning**
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 $4 + 6 + 4 = 10 + 4 = 14$. While solving addition problems, students begin to recognize the commutative property, for example $7 + 4 = 11$, and $4 + 7 = 11$. While decomposing two-digit numbers, students realize that any two-digit number can be broken up into tens and ones, e.g. $35 = 30 + 5$, $76 = 70 + 6$. Grade 1 students make use of structure when they work with subtraction as a missing addend problem, such as $13 - 7 = \square$ can be written as $7 + \square = 13$ and can be thought of as how much more do I need to add to 7 to get to 13?	Grade 1 students begin to look for regularity in problem structures when solving mathematical tasks. For example, students add three one-digit numbers by using strategies such as "make a ten" or doubles. Students recognize when and how to use strategies to solve similar problems. For example, when evaluating $8 + 7 + 2$, a student may say, "I know that 8 and 2 equals 10, then I add 7 to get to 17. It helps if I can make a 10 out of two numbers when I start." Students use repeated reasoning while solving a task with multiple correct answers. For example, solve the problem, "There are 12 crayons in the box. Some are red and some are blue. How many of each could there be?" Students use repeated reasoning to find pairs of numbers that add up to 12, e.g., the 12 crayons could include 6 of each color ($6 + 6 = 12$), 7 of one color and 5 of another ($7 + 5 = 12$), etc.

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First Grade Standards

These are the standards for what is taught in First Grade. It is the expectation that these skills will be reinforced after they have been taught.

Standards taught during 1st Quarter		
Operations and Algebraic Thinking Understand and apply properties of operations and the relationship between addition and subtraction. Add and subtract with 20. Work with addition and subtraction equations.	**Number and Operations in Base Ten** Extend the counting sequence. Understand place value.	**Measurement and Data** Work with money.
1.OA.3 Apply properties of operations as strategies to add and subtract. *For example, 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).* Students need not use formal terms for these properties. **1.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.* **1.OA.5** Relate counting to addition and subtraction, e.g., by counting on ^{G} 2 to add 2. **1.OA.6** Add and subtract within 20,	**1.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. **1.NBT.2** Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: 10 can be thought of as a bundle of ten ones — called a "ten;" the numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones; and 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). **1.NBT.3** Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons	**1.MD.3** Work with time and money. b. Identify pennies and dimes by name and value.

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demonstrating fluency [G] with various strategies for addition and subtraction within 10. Strategies may include 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 and 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 $6 + 6 + 1= 12 + 1 = 13$.

1.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.*

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

with the symbols $>$, $=$, and $<$.

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First Grade Standards

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These are the standards for what is taught in First Grade. It is the expectation that these skills will be reinforced after they have been taught.

Standards taught during 2nd Quarter		
Operations and Algebraic Thinking *Represent and solve problems involving addition and subtraction. Add and subtract within 20.*	**Number and Operations in Base Ten** *Use place value understanding and properties of operations to add and subtract.*	**Measurement and Data** *Work with money.*
1.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. See Table 1, page 95. **1.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. Drawings need not show details, but should show the mathematics in the problem. (This applies whenever drawings are mentioned in the Standards.) **1.OA.6** Add and subtract within 20, demonstrating fluency [G] with various	**1.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. **1.NBT.6** Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 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.	**1.MD.3** Work with time and money. b. Identify pennies and dimes by name and value.

strategies for addition and subtraction within 10. Strategies may include 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 and 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 $6 + 6 + 1 = 12 + 1 = 13$.		

First Grade Standards

These are the standards for what is taught in First Grade. It is the expectation that these skills will be reinforced after they have been taught.

Standards taught during 3rd Quarter		
Operations and Algebraic Thinking **Represent and solve problems involving addition and subtraction. Add and subtract within 20.**	**Number and Operations in Base Ten** **Use place value understanding and properties of operations to add and subtract.**	**Measurement and Data** **Measure lengths indirectly and by iterating length units. Work with money. Represent and interpret data.**
1.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. See Table 1, page 95. **1.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. Drawings need not show details, but should show the mathematics in the problem. (This applies whenever drawings are mentioned in the Standards.) **1.OA.6** Add and subtract within 20, demonstrating fluency [G] with various strategies for addition and subtraction within	**1.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 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; record the strategy with a written numerical method (drawings and, when appropriate, equations) and explain the reasoning used. Understand that when adding two-digit numbers, tens are added to tens; ones are added to ones; and sometimes it is necessary to compose a ten.	**1.MD.1** Order three objects by length; compare the lengths of two objects indirectly by using a third object. **1.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. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.* **1.MD.3** Work with time and money. a. Tell and write time in hours and half-hours using analog and digital clocks. **1.MD.4** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of

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10. Strategies may include 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 and 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 $6 + 6 + 1 = 12 + 1 = 13$.		data points, how many in each category, and how many more or less are in one category than in another.

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These are the standards for what is taught in First Grade. It is the expectation that these skills will be reinforced after they have been taught.

Standards taught during 4th Quarter		
Operations and Algebraic Thinking — **Represent and solve problems involving addition and subtraction. Add and subtract within 20.**	**Number and Operations in Base Ten** — **Use place value understanding and properties of operations to add and subtract.**	**Geometry** — **Reason with shapes and their attributes.**
1.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. See Table 1, page 95. **1.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. Drawings need not show details, but should show the mathematics in the problem. (This applies whenever drawings are mentioned in the Standards.)	**1.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 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; record the strategy with a written numerical method (drawings and, when appropriate, equations) and explain the reasoning used. Understand that when adding two-digit numbers, tens are added to tens; ones are added to ones; and sometimes it is necessary to compose a ten.	**1.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 that possess defining attributes. **1.G.2** Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. Students do not need to learn formal names such as "right rectangular prism." **1.G.3** Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and

1.OA.6 Add and subtract within 20, demonstrating fluency [G] with various strategies for addition and subtraction within 10. Strategies may include 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 and 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 $6 + 6 + 1 = 12 + 1 = 13$.		*quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares in real world contexts. Understand for these examples that decomposing into more equal shares creates smaller shares.

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