

2nd Grade

Mathematics Alignment—Common Core State Standards and CT Frameworks

NOTE: CCSS standards shown in blue do not equivalent CT standards.

CCSS Standards	CT Framework Grade Level Expectations
2.OA – Operations and Algebraic Thinking :	
<i>Represent and solve problems involving addition and subtraction:</i>	
2.OA.1: Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).	CT.2.2.2.13: Create word problems and write and solve two- and three-digit number sentences that reflect contextual situations and real-world experiences involving addition and subtraction. Construct and solve open sentences, e.g., $___ + 5 = 11$. Solve the problems using a variety of methods including models, pictures, pencil and paper, estimation and mental computation, and describe the reasoning or strategies used.
	CT.2.2.2.15: Add two-digit numbers with and without regrouping. Subtract two-digit numbers without regrouping and with regrouping using models.
	CT.3.2.2.12: Solve problems involving addition and subtraction of two- and three-digit whole numbers and money amounts up to \$100.00 with and without regrouping, using a variety of strategies including models.
	CT.4.2.2.24: Write and solve multi-step contextual problems, including problems with extraneous information and explain orally and in writing how the answers were determined.
<i>Add and subtract within 20:</i>	
2.OA.2: Fluently add and subtract within 20 using mental strategies. By the end of grade 2, know from memory all sums of two one-digit numbers.	CT.2.2.2.14: Solve problems using addition and subtraction facts involving sums and differences to 20 with flexibility and fluency.
	--Know from memory all sums of two one-digit numbers.
<i>Work with equal groups of objects to gain foundations for multiplication:</i>	
2.OA.3: Determine whether a group of objects (up to 20) has an odd or even number of members (e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends).	CT.2.1.1.2: Recognize, extend, and create repeating, growing number chains, e.g., skip counting, odd/even, counting on by 10, and one and two attribute patterns. Describe the pattern and the rule used to make it.
	CT.2.2.2.12: Determine whether a set of objects has an odd or even number of items by pairing objects and creating arrays.

<p>2.OA.4: Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.</p>	<p>CT.2.1.3.7: Demonstrate an understanding of equivalence or balance of sets using objects, models, diagrams, numbers, whole number relationships (operations) and the equals sign, e.g., $2 + 3 = 5$ is the same as $5 = 2 + 3$ and the same as $4 + 1 = 5$.</p>
	<p>CT.2.2.1.3: Represent multiplication and division (with factors of 1, 2, 5 and 10) using a variety of models and strategies such as arrays, pictures, skip counting, extending number patterns, and repeated addition and subtraction; describe the connection between multiplication and division.</p>
<p>2.NBT - Number and Operations in Base Ten:</p>	
<p><i>Understand place value:</i></p>	
<p>2.NBT.1: Understand that the three digits of a three-digit number represent amounts of hundreds, tens and ones (e.g., 706 equals 7 hundreds, 0 tens, and 6 ones). Understand the following as special cases:</p> <ul style="list-style-type: none"> a. 100 can be thought of as a bundle of ten ones – called a “hundred.” b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight or nine hundreds (and 0 tens and 0 ones). 	<p>CT.2.2.1.2: Represent whole numbers up to 1,000 by modeling and writing numbers in expanded forms, e.g., $37 = (3 \times 10) + (7 \times 1)$, and regrouped forms, e.g., $(2 \times 10) + (17 \times 1) = 37$, and use the forms to support computational strategies.</p>
	<p>--Understand that the three digits of a three-digit number represent amounts of hundred, tens, and ones. Understand 100 as a bundle of ten ones called a “hundred.” Understand that the numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight or nine hundreds (and 0 tens and 0 ones).</p>
<p>2.NBT.2: Count within 1000; skip-count by 5s, 10s and 100s.</p>	<p>CT.2.2.2.8: Count whole numbers to 1,000 and beyond.</p> <p>CT.2.2.2.9: Count on by tens from a given amount (e.g., 17, 27, 37, etc.)</p> <p>CT.2.2.2.11: Skip count by twos, fives, tens and hundreds to 1,000 and beyond.</p>
<p>2.NBT.3: Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.</p>	<p>CT.2.2.1.2: Represent whole numbers up to 1,000 by modeling and writing numbers in expanded form and regrouped form, and use the forms to support computational strategies.</p> <p>CT.2.2.2.10: Read and write numerals up to 1,000,</p>

<p>2.NBT.4: Compare two three-digit numbers based on meanings of the hundreds, tens and ones digits using $>$, $+$, and $<$ symbols to record the results of comparisons.</p>	<p>CT.2.2.1.1: Locate, label, compare, and order whole numbers up to 1,000 using pictures, place value models, number lines, and benchmarks of 0, 10 and 100, including naming the number that is 10 or 100 more or less than a given number.</p>
	<p>CT.3.1.3.5: Demonstrate understanding of equivalence as a balanced relationship of quantities by using the equals sign to relate two quantities that are equivalent and the inequality symbols, $<$ and $>$, to relate two quantities that are not equivalent.</p>
	<p>--Compare two three-digit numbers based on meanings of the hundreds, tens and ones digits using $>$, $+$, and $<$ symbols to record the results of the comparisons.</p>
<p><i>Use place value understanding and properties of operations to add and subtract:</i></p>	
<p>2.NBT.5: Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.</p>	<p>CT.2.2.2.13: Create word problems and write and solve two- and three-digit number sentences that reflect contextual situations and real-world experiences involving addition and subtraction. Construct and solve open sentences, e.g., $___ + 5 = 11$. Solve the problems using a variety of methods including models, pictures, pencil and paper, estimation and mental computation, and describe the reasoning and strategies used.</p>
	<p>CT.2.2.2.15: Add two-digit numbers with and without regrouping. Subtract two-digit numbers without regrouping and with regrouping using models.</p>
	<p>--Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.</p>
<p>2.NBT.6: Add up to four two-digit numbers using strategies based on place value and properties of operations.</p>	<p>CT.2.2.2.15: Add two-digit numbers with and without regrouping. Subtract two-digit numbers without regrouping and with regrouping using models.</p>
	<p>CT.3.2.2.13: Create and solve addition and subtraction word problems by using place value patterns and algebraic properties (commutative and associative for addition).</p>
	<p>--Add up to four two-digit numbers using strategies based on place value and properties of operations.</p>

<p>2.NBT.7: Add and subtract within 1000, 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. Understand that in adding and subtracting three-digit numbers, one adds and subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.</p>	<p>CT.2.2.2.15: Add two-digit numbers with and without regrouping. Subtract two-digit numbers without regrouping and with regrouping using models.</p>
<p>2.NBT.8: Mentally add 10 or 100 to a given number 100 – 900, and mentally subtract 10 or 100 from a given number 100 – 900.</p>	<p>CT.2.2.1.1: Locate, label, compare, and order whole numbers up to 1,000 using pictures, place value models, number lines, and benchmarks of 0, 10 and 100, including naming the number that is 10 or 100 more or less than a given number.</p>
<p>2.NBT.9: Explain why addition and subtraction strategies work, using place value and the properties of operations.</p>	<p>--Explain why addition and subtraction strategies work, using place value and the properties of operations.</p>
<p>2.MD – Measurement and Data:</p>	
<p><i>Measure and estimate lengths in standard units.</i></p>	
<p>2.MD.1: Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.</p>	<p>CT.2.3.3.7: use measurement tools such as thermometers to measure temperature, basic rulers to measure length to the nearest half-inch or centimeter, and balance scales to measure weight/mass in grams.</p>
	<p>CT.2.3.3.8: Use nonstandard referents and standard benchmarks to estimate and measure the following: --length (to the nearest inch, half-inch, foot, yard, centimeter or meter); --area (in square inches); --capacity (in liters and cups); --weight (in grams); --temperature; and --volume (using water or sand).</p>

2.MD.2: Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.	--Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
2.MD.3: Estimate lengths using units of inches, feet, centimeters, and meters.	CT.2.3.3.8: Use nonstandard referents and standard benchmarks to estimate and measure the following: --length (to the nearest inch, half-inch, foot, yard, centimeter or meter); --area (in square inches); --capacity (in liters and cups); --weight (in grams); --temperature; and --volume (using water or sand).
	CT.3.3.3.10: Estimate and measure using nonstandard units and appropriate customary and metric tools and units: --length and perimeter to the nearest $\frac{1}{4}$ inch or $\frac{1}{2}$ centimeter; --area in square inches or square centimeters; --capacity in cups, pints, quarts, milliliters or liters; --weight in ounces, pounds and grams (mass in grams); --temperature to the nearest degree; and --volume using inch cubes and centimeter cubes.
2.MD.4: Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	--Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.
<i>Relate addition and subtraction to length:</i>	
2.MD.5: Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units (e.g., by using drawings such as drawings of rulers and equations with a symbol for the unknown number to represent the problem).	--Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units (e.g., by using drawings such as drawings of rulers and equations with a symbol for the unknown number to represent the problem).
2.MD.6: Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.	--Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.

<i>Work with time and money:</i>	
2.MD.7: Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	CT.2.3.3.6: Solve problems involving telling time, including estimating and measuring the length of time needed to complete a task, to the half-hour using analog and digital clocks.
	CT.3.3.3.8: Solve problems involving telling time to the nearest quarter hour, five minutes and minute using analog and digital clocks.
2.MD.8: Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately.	CT.2.2.2.18: Determine and compare the value of pennies, nickels, dimes, quarters and half dollars.
	CT.2.2.2.19: Count, compare and trade sets of pennies, dimes, and dollars up to \$10.00.
	CT.3.2.2.12: Solve problems involving addition and subtraction of two- and three-digit whole numbers and money amounts up to \$100.00 with and without regrouping, using a variety of strategies, including models.
	CT.3.2.2.18: Determine and compare the value of sets of coins and write the values using decimal notation (e.g., two quarters = 50 cents or \$0.50 or .50¢ (50 of 100 cents in a dollar) and is less than two quarters, two dimes and a nickel or \$0.75.
	CT.3.2.2.19: Determine, compare and write the value of money amounts up to \$100.00 and identify equivalent ways to represent a given amount of money, including combinations of pennies, nickels, dimes, quarter and half dollars (e.g., \$0.25 can be give nickels, two dimes and one nickel or one quarter).
<i>Represent and interpret data:</i>	
2.MD.9: Generate measurement data by measuring lengths of several objects to the nearest whole unit or by making repeated measurements of the same object. Show the measurements by making a line plot where the horizontal scale is marked off in whole-number units.	--Generate measurement data by measuring lengths of several objects to the nearest whole unit or by making repeated measurements of the same object. Show the measurements by making a line plot where the horizontal scale is marked off in whole-number units.
2.ML.10: Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	--Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

2.G – Geometry

Reason with shapes and their attributes.

2.G.1: Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons and cubes.

CT.2.1.1.1: Sort, classify, and order objects and numbers in more than one way and by one and two attributes and describe the rule used. Use attributes such as size, shape, color, texture, orientation, position, and use; and characteristics such as symmetry and congruence.

CT.2.3.1.1.1: Identify, describe and draw polygons (triangles, quadrilaterals including trapezoids and rhombuses, pentagons and hexagons), solids, and other familiar two- and three-dimensional objects in the environment.

CT.2.3.1.2: Compare and sort familiar polygons, solids and other two- and three-dimensional objects in the environment.

--Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.

2.G.2: Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

--Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

2.G.3: Partition circles and rectangles into two, three or four equal shares, describe the shares using the words *halves*, *thirds*, *half of*, *a third of*, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

CT.2.2.1.4: Use a variety of models and familiar objects to compare, order, and estimate parts of a whole using the unit fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$.

--Partition circles and rectangles into two, three or four equal shares, describe the shares using the words *halves*, *thirds*, *half of*, *a third of*, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.