Math
Grade 2

Aligned with Ohio's Learning Standards
for Math (2018)

Department of Academic Services
Office of Teaching and Learning
Curriculum Division

COLUMBUS CITY SCHOOLS

Curriculum Map

Year-at-a-Glance

The Year-at-a-Glance provides the Math Framework and a high-level overview of the course by grading period.
- Link to the Math Framework
- Quarterly Standards Overview by Domain and Cluster

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Scope and Sequence

The Scope and Sequence provides a detailed overview of each grading period, including:
- Standards
- Link to Critical Areas of Focus

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Curriculum and Instruction Guide

The Curriculum and Instruction Guide provides direction for standards-based instruction, including:
- Link to the Clear Learning Targets
- Essential Understandings
- Strategies and Approaches
- Assessment Opportunities
- Link to the Model Curriculum
- Timeline
- Mathematical Practices

The Math framework consists of components that support the shifts in mathematics education by the Common Core Standards that are identified in Ohio's Learning Standards for Mathematics. These shifts narrow the focus of topics taught in each grade level to provide for deeper understanding of topics presented, provide the ability to see the coherence of the topics across the grade levels and support more rigorous instruction. The best practices in the framework support these shifts and are applied during all phases of conceptual development. The practices provide students with opportunities to make connections, communicate, and demonstrate mathematical understanding.

Link to CCS Math Framework

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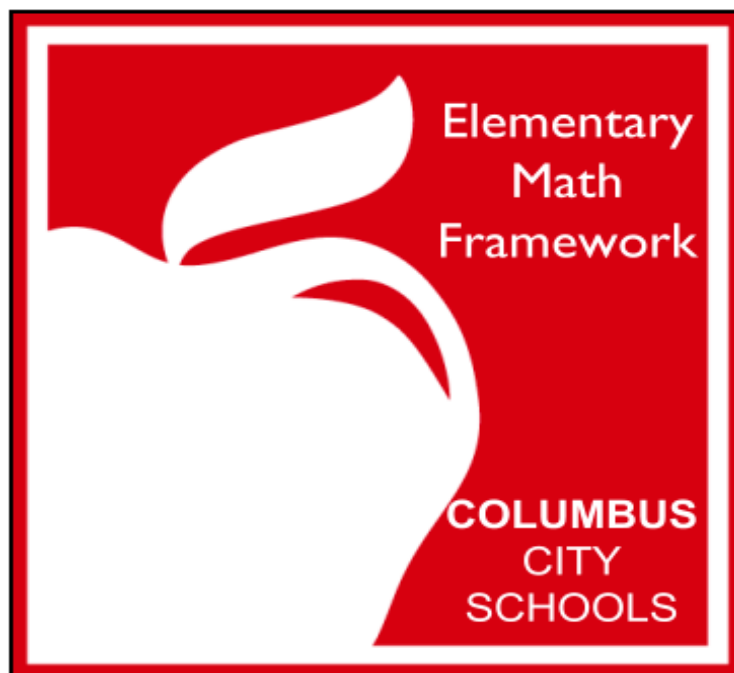
Year-at-a-Glance

Grading Period 1	**9 Weeks** **Operations and Algebraic Thinking** **Measurement and Data** **Number and Operations in Base Ten**			
	Add and subtract within 20. ***2.OA.2**	Represent and solve problems involving addition and subtraction. ***2.OA.1**	Represent and interpret data. **2.MD.10**	Use place value understanding and properties of operations to add and subtract. ***2.NBT.5** ***2.NBT.9**

Grading Period 2	**9 Weeks** **Number and Operations in Base Ten** **Operations and Algebraic Thinking** **Measurement and Data**				
	Use place value understanding and properties of operations to add and subtract. ***2.NBT.5** ***2.NBT.9**	Represent and solve problems involving addition and subtraction. ***2.OA.1**	Work with time and money. **2.MD.8a-c** **2.MD.7**	Understand place value. **2.NBT.1a** **2.NBT.1b** **2.NBT.2** **2.NBT.3** **2.NBT.4**	Use place value understanding and properties of operations to add and subtract. ***2.NBT.7** ***2.NBT.8** ***2.NBT.9**

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Grading Period 3	9 Weeks Number and Operations in Base Ten Measurement and Data	
	Use place value understanding and properties of operations to add and subtract. *2.NBT.7 *2.NBT.9 *2.NBT.6	Measure and estimate lengths in standard units. 2.MD.1 2.MD.2 2.MD.3 2.MD.4

Grading Period 4	9 Weeks Measurement and Data Geometry Operations and Algebraic Thinking			
	Relate addition and subtraction to length. *2.MD.5 *2.MD.6	Represent and Interpret data. 2.MD.9	Reason with shapes and their attributes. 2.G.1 2.G.3 2.G.2	Work with equal groups of objects to gain foundations for multiplication. 2.OA.4 2.OA.3

Scope and Sequence and Instructional Supports

Standards: The standards are listed for the grading period and linked to the Clear Learning Targets for that strand under the instructional supports.

Priority Standards: Standards that require emphasis and name the content that should be mastered to ensure a foundation for the following year.

Critical Area of Focus: The critical areas are designed to bring focus to the standards at each grade by describing the big ideas that educators can use to build their curriculum and to guide instruction.

Essential Understandings: Synthesizes what the students should understand - not just know and do - empowering them to connect concepts and knowledge across contents and grades.

Strategies and Approaches: Strategies and approaches are based on the Instructional Focus for the standards provided in the grade level Model Curriculum provided by ODE.

Assessment Opportunities: Assessment opportunities for the standard are samples to consider when checking for understanding. Some examples of formative assessments are verbal opportunities, exit tickets, checklists, written summaries, quizzes, common assessments and student journals.

Lesson Standards: The standards that will be explicitly taught during the daily lesson.

Supporting Standards: Additional standards to be taught in the daily lesson that align with and support mastery of the standards for the lesson.

Mathematical Practices: The Standards for Mathematical Practice describe the skills that mathematics educators should seek to develop in their students. The Mathematical Practices represent a picture of what it looks like for students to understand and do mathematics in the classroom and should be integrated into every mathematics lesson for all students.

* Indicates priority standards for 2nd grade.

indicates a clickable link.

Educator Notes and One-Day Activities for Ohio Enhancement Activities can be found in our resources digital platform.

Scope and Sequence

	Quarter 1	
	Standard	
*2.OA.2	Fluently^G add and subtract within 20 using mental strategies. By the end of Grade 2, know from memory all sums of two one-digit numbers. See standard 1.OA.6 for a list of mental strategies.	#2 Building fluency with addition and subtraction
*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. See Table 1 in the Standards.	
2.MD.10	Organize, represent, and interpret data with up to four categories; complete picture graphs when single-uit scales are provided; complete bar graphs when single-unit scales are provided; solve simple put-together, take-apart, and compare problems in a graph. See Table 1 in the Standards.	
*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.	
*2.NBT.9	Explain why addition and subtraction strategies work, using place value and the properties of operations. Explanations may be supported by drawings or objects.	

Instructional Supports

Click on the Clear Learning Targets to find vocabulary, learning targets, and sample questions.

	Quarter 1			
Timeframe	Clear Learning Targets	Essential Understandings	Strategies and Approaches	Assessment Opportunities
27 days	*2.OA.2	Fluency means being efficient, accurate, and flexible with addition and subtraction strategies.	Use efficient mental strategies to compute accurately and flexibly within 20. Explain why some strategies may be more efficient than others. Use number relationships to help students develop mental strategies. (Mental strategies may include the following: counting on, making 10, decomposing a number, using the relationship between addition and subtraction, creating equivalent but easier or known sums, etc.)	Pose real-world problems using numbers 0-20. Have students explain the strategy they used to solve the problem. Give students an addition or subtraction equation. Have students identify equations that are in the same fact family as the equation that was provided. Explain the reasoning using grade-level appropriate mathematical language.
	*2.OA.1	Real-world and mathematical situations can be represented using drawings and equations. An unknown can be in any position of a mathematical situation.	Solve problems using addition and subtraction within 100. See Table 1 of the Standards. Solve for an unknown (represented by an empty box or picture) in any position. Create a model or draw a picture and use an equation to represent the problem situation.	Pose multi-step addition and subtraction word problems with the unknown in any position. See Table 1 of the Standards. Have students create a model or draw pictures to represent their thinking. Have students explain the strategy they used by using grade-level appropriate mathematical language.

				Use and explain different strategies or properties of operations.	
	2.MD.10	Given a graph, the data can be used to solve addition, subtraction, and comparison problems.	Organize and represent data with up to four categories.

Interpret data to solve addition, subtraction, and compare problems. See Table 1 of the Standards. | | Given data, have students create a picture graph that has four categories. Pose questions using mathematical situations in Table 1 of the Standards and have students solve using data from the graph they created. Have students explain their reasoning using grade-level appropriate mathematical language.

Given data, have students create a picture graph with four categories. Have students create questions that could be asked using the data. Explain the strategy they used to create the questions. |
| 5 days | *2.NBT.5 | When adding and subtracting numbers, the place and value of the digits is important for determining either the sum or the difference.

There is a relationship between addition and subtraction.

When adding or subtracting, sometimes it is necessary to compose or decompose tens or hundreds. | Use a number line, hundred chart, and place value blocks to model the mathematics.

Use strategies to add and subtract within 100 efficiently, accurately, and flexibly.

Generalize computation strategies of addition and subtraction that will apply to larger numbers. | | Given an addition problem, have students explain how the numbers can be decomposed to solve the equation. Have students explain their reasoning.

Pose real-world multi-step problems using mathematical situations from Table 1 of the Standards. Have students explain the strategies they used to solve the problem using |

	Fluency is being efficient, accurate, and flexible with addition and subtraction strategies.		grad-level mathematical language.
*2.NBT.9	When adding and subtracting numbers, the place and value of the digits is important for determining either the sum or the difference.	Use a number line, hundred chart, and place value blocks to model the mathematics. Explain and justify why addition and subtraction strategies work.	Pose real-world multi-step problems using problem structures that are grade level appropriate using Table I of the Standards. Have students use grade-level mathematical language to explain the strategy they used to solve the problem. Give students an addition or subtraction problem with the sum or difference given. Have students use mathematical reasoning to explain how the problem could have been solved.

[Link to Ohio's 2nd Grade Model Curriculum](#)

Timeline

	Quarter 1									
Lesson Number	Lesson 0	Lesson 1	Lesson 2	Lesson 3	Mid-Unit Assessment	Lesson 4	Lesson 5	Math Task	Unit Assessment	Lesson 6
Lesson Standards	Introduction of discourse routine	*2.OA.2	*2.OA.2	*2.OA.1		2.MD.10	*2.OA.1	*2.OA.1 *2.OA.2 2.MD.10		*2.NBT.5 *2.NBT.9
Supporting Standards		*2.OA.1	*2.OA.1	*2.OA.2		*2.OA.1				

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Scope and Sequence

	Quarter 2	
	Standard	**Link to Ohio's Critical Area of Focus**
*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.	#2 Building fluency with addition and subtraction
*2.NBT.9	Explain why addition and subtraction strategies work, using place value and the properties of operations. Explanations may be supported by drawings or objects.	
*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. See Table 1 in the Standards.	

2.MD.8 a-c	Solve problems with money.
	   a. Identify nickels and quarters by name and value.
	   b. Find the value of a collection of quarters, dimes, nickels and pennies.
	   c. Solve world problems by adding and subtracting within 100, dollars with dollars and cents with cents (not using dollars and cents simultaneously) using the $ and ¢ symbols appropriately (not including decimal notation).	

2.MD.7	Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.	#3 Using standard units of measure
2.NBT.1 a-b	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, 6 ones. Understand the following as special cases: a. 100 can be thought of as a bundle of ten tens - called a "hundred."	#1 Extending understanding of base-ten notation

		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).	
	2.NBT.3	Read and write numbers to 1,000 using base-ten numerals, number names, expanded form^G, an equivalent representations, e.g., 716 is 700 + 10 + 6, or 6 + 700 + 10, or 6 ones and 71 tens, etc.	
	2.NBT.4	Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, < symbols to record the results of comparisons.	
	2.NBT.2	Count forward and backward within 1,000 by ones, tens, and hundreds starting at any number; skip-count by 5s starting at any multiple of 5.	
	*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.	#2 Building fluency with addition and subtraction

Instructional Supports

Click on the Clear Learning Targets to find vocabulary, learning targets, and sample questions.

Quarter 2				
Timeframe	**Clear Learning Targets**	**Essential Understandings**	**Strategies and Approaches**	**Assessment Opportunities**
24 days	***2.NBT.5**	When adding and subtracting numbers, the place and value of the digits is important for determining either the sum or the difference. There is a relationship between addition and subtraction.	Use a number line, hundred chart, and place value blocks to model the mathematics. Use strategies to add and subtract within 100 efficiently, accurately, and flexibly. Generalize computation strategies of addition	Given an addition problem, have students explain how the numbers can be decomposed to solve the equation. Have students explain their reasoning. Pose real-world multi-step problems

	When adding or subtracting, sometimes it is necessary to compose or decompose tens or hundreds. Fluency is being efficient, accurate, and flexible with addition and subtraction strategies.	and subtraction that will apply to larger numbers.	using mathematical situations from Table 1 of the Standards. Have students explain the strategies they used to solve the problem using grad-level mathematical language.
*2.NBT.9	When adding and subtracting numbers, the place and value of the digits is important for determining either the sum or the difference.	Use a number line, hundred chart, and place value blocks to model the mathematics. Explain and justify why addition and subtraction strategies work.	Pose real-world multi-step problems using problem structures that are grade level appropriate using Table 1 of the Standards. Have students use grade-level mathematical language to explain the strategy they used to solve the problem. Give students an addition or subtraction problem with the sum or difference given. Have students use mathematical reasoning to explain how the problem could have been solved.
*2.OA.1	Real-world and mathematical situations can be represented using drawings and equations. An unknown can be in any position of a mathematical situation.	Solve problems using addition and subtraction within 100. See Table 1 of the Standards. Solve for an unknown (represented by an empty box or picture) in any position. Create a model or draw a picture and use an equation to represent the problem situation. Use and explain different strategies or	Pose multi-step addition and subtraction word problems with the unknown in any position. See Table 1 of the Standards. Have students create a model or draw pictures to represent their thinking. Have students explain the strategy they used by using grade-level appropriate language.

| 2.MD.8 | A nickel is worth 5 cents (5¢).

A quarter is worth 25 cents (25¢).

An amount of dollars is represented with the dollar symbol ($).

A collection of pennies, nickels, dimes, and quarters can be counted.

The size of a coin does not determine its value.

The dollar symbol and cent symbol are not used simultaneously, i.e., do not use decimal notation. Note: Decimal notation, e.g., $1.33, will be used in 4th grade to represent values beyond 100 cents. | Recognize and name a nickel.

Identify that a nickel's value is equal to 5 cents.

Count by 5s using nickels.

Recognize and name a quarter.

Identify that a quarter's value is equal to 25 cents.

Count by 25's using quarters.
Identify and use "¢" as a symbol to represent coin values.

Identify and use "$" as a symbol to represent dollars.

Find the value of a collection of quarters, dimes, nickels, and pennies.

Compare collections of coins based on their values.

Use pennies, nickels, dimes, and quarters as manipulatives to reinforce place value up to 100 cents.

Solve word problems by adding and subtracting within 100, whole dollars with whole dollars, and cents with cents. | Give students an amount and have them create a model using coins or dollars to represent that amount. Have students compare their model to other students and explain the similarities and differences. Use grade-level mathematical language to explain their reasoning. Problems deal with dollars or cents not dollars and cents.

Pose a real-world multi-step problem using grade level appropriate numbers that are either dollars or cents. Have students represent the answer using a model. Have students explain the strategy they used to solve the problem using grade-level appropriate mathematical language. |

		2.MD.7	Time can be measured to the nearest 5 minutes. Time can be measured using an analog clock or digital clock. Time can be recorded using hours and to the nearest 5 minutes, e.g., Twenty-five minutes after eleven is represented as 11:25. A day is measured as an interval of 24 hours. A day is divided equally into a.m. time and p.m. time.	Explore analog clocks to locate 5 minute interval markings. Tell time to the nearest 5 minutes. Use skip counting to represent 5 minute intervals (2.NBT.2). Write time symbolically using a colon (:) to separate hours and minutes; use two digits after the colon, e.g., five minutes after two o'clock is represented as 2:05). Explore and discuss the number of hours in a day. ● The first half of a new day begins at midnight and is represented as a.m. ● The second half of a day begins at noon and is represented as p.m.	Pose real-world problems where students need to find the model that represents the time indicated in the problem. Models should include both digital and analog examples. Problems could have more than one answer. Use times to the nearest 5 minutes. Pose real-world problems where students identify the time on an analog clock using times to the nearest 5 minutes. Have students explain the strategy used to identify the time.
	18 days	**2.NBT.1 a-b**	A group of ten tens is now referred to as a "hundred." A three-digit number is made up of hundreds, tens, and ones. A numeral can stand for a different amount depending on its place or position in a number. The digits to the left hold a larger value than the digit(s) to the right.	Identify 100 as the same as ten-tens. Represent three-digit numbers with proportional objects (e.g., base ten blocks, sticks, etc.) and drawings. Compose and decompose three-digit numbers into hundreds, tens, and ones with proportional objects. Explain the need for zero as a place holder, e.g. one hundred four is 104.	Give students a three digit number and have them represent the number in more than one way using drawings or base ten blocks. Have students explain the relationship between the different representations using grade-level appropriate mathematical language. Pose a real-world problem that represents a number. Have students identify the number. Ex. There are

				100 pencils in a case. Each box has 10 pencils. If the teacher orders 7 cases and 2 extra boxes, how many pencils did she order? Explain your strategy using a model or a drawing.
			Identify and explain the value of each digit within a three-digit number.	
			Identify and write the place (ones, tens, hundreds) of each digit in a three- digit numeral.	
			Recognize and describe visual patterns in word form and expanded form of whole numbers to 1,000.	
			Recognize and describe word patterns of whole numbers to 1,000.	
			Recognize that numerals between 1−1,000 have repeating patterns.	
	2.NBT.3	Words can be used to represent numbers. When there are no ones and/or tens, the digit zero must be used in the ones and/or tens place to preserve the value of the number. Three-digit numbers can be composed and decomposed using multiple representations. Numbers written in expanded form can be expressed as an equation.	Given a written or oral number name within 1,000, read and write the numeral. Explore numbers using equivalent representations, e.g., 310 is "three hundred ten ones," "two hundreds plus eleven tens," and "31 tens," etc. Read three-digit numbers when shown a numeral, a model of the number, or a pictorial representation of the number. Read and write numbers in expanded form with multiple representations for the same number.	Pose real-world problems where students identify the number that is represented in expanded form. Use grade-level appropriate language to explain the reasoning. Ex. Joel has 15 ten dollar bills and 3 one dollar bills. What is the total value of Joel's bills? Pose real-world problems that require students to reason about equivalent representations. Have students compare their reasoning. Ex. My house number is a three digit number. It is more than 30 tens. The

		Numbers have equivalent representations.	Write numbers in expanded form as an equation.	number in the tens digit is greater than 5. What could my house number be? Compare your thinking to others.
	2.NBT.4	Numbers can be compared. Symbols >, =, and < can be used to record the comparison between numbers. When comparing numbers, start with the greatest place value.	Compare two numbers up to 1,000 concretely, pictorially, or symbolically, using the symbols >, =, and <. Use mathematical language (greater than, less than, equal to) to describe the relationship between numbers. Connect the mathematical language to the use of symbols >, =, and < to compare two three-digit numbers. Read comparative statements from left to right. Explore three-digit numbers to discover that the value of the hundreds place helps determine the size of a three-digit number. Generalize the understanding that the value of the hundreds place may help to compare two three-digit numbers. Compare two different numbers that result in two true inequality statements. For example, 572 is greater than 324 (572 > 324), and 324 is less than 572 (324 < 572).	Pose real-world problems where students need to compare numbers. Have students show the comparison using an inequality symbol. Have students explain their solution using words, pictures or models. When posing problems, numbers can be shown in expanded form or standard from. Pose problems where students compare numbers and create a story to show the comparison. Have students use grade-level appropriate mathematical language.
	2.NBT.2	Skip counting is a repeating pattern.	Extend the counting sequence to 1,000 from	Pose real-world problems dealing

			different starting points. Describe patterns in skip counting and use those patterns to predict the next number in the counting sequence. Skip-count forward and backward from any number within 1,000 by ones, tens, and hundreds. Skip-count by fives forward and backward from any multiple of 5 within 1,000.	with time for students to practice skip counting by 5's, dimes or 10 dollars to practice skip counting by 10's, and situations where you skip count by 100. Students create a pattern of skip counting by a number forwards and backwards. Explain the pattern using grade-level appropriate mathematical language.
	*2.NBT.8	When adding and subtracting numbers, the place and value of the digits is important for determining either the sum or the difference. The digit in the ones place will remain the same when finding 10 more or 10 less. The digits in the tens place and the ones place will remain the same when finding 100 more or 100 less. There is a relationship between addition and subtraction. When adding or subtracting three-digit numbers, hundreds are added or subtracted from hundreds, tens are	Use a hundred chart model when adding 10 to numbers less than 100. Explore and generalize concepts based on patterns and structures. Use mental strategies to add and subtract 10 or 100 from a given number 100−900. Explain and justify why addition and subtraction strategies work.	Pose a real-world problem where students add or subtract 10 or 100 from a given number. Have students explain the strategy they used to solve the problem. Given a pattern, have students reason if the pattern is created correctly. Have students explain their thinking. Ex. 394, 404, 414, 424. Are the numbers increasing by 10? Explain your thinking.

	added or subtracted from tens, ones are added or subtracted from ones.		
	Link to Ohio's 2nd Grade Model Curriculum		

Timeline

	Quarter 2												
Lesson Number	Lesson 7	Lesson 8		Lesson 9	Lesson 10	Lesson 11		Lesson 12	Lesson 13	Lesson 14	Lesson 15	
Lesson Standards	*2.NBT.5 *2.NBT.9	*2.NBT.5 *2.NBT.9	Mid-Unit Assessment	*2.OA.1	2.MD.8 *2.OA.1	2.MD.7	Unit Assessment	2.NBT.1a 2.NBT.1b	2.NBT.3 See Educator Notes for Ohio Enhancement Activities	2.NBT.4	2.NBT.2 *2.NBT.8 See Educator Notes for Ohio Enhancement Activities	Mid-Unit Assessment
Supporting Standards				*2.NBT.5	2,NBT.2 *2.NBT.5	2.NBT.2			2.NBT.1a 2.NBT.1b	2.NBT.3		

Scope and Sequence

	Quarter 3	
	Standard	**Link to Ohio's Critical Area of Focus**
*2.NBT.7	Add and subtract within 1,000, 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 (drawing and, when appropriate, equations) and explain the reasoning used. Understand that in adding or subtracting from hundreds, ten are added or subtracted from tens, ones are added or subtracted from ones; and sometimes it is necessary to compose or decompose tens or hundreds.	#2 Building fluency with addition and subtraction
*2.NBT.9	Explain why addition and subtraction strategies work, using place value and the properties of operations. Explanations may be supported by drawings or objects.	
*2.NBT.6	Add up to four two-digit number using strategies based on place value and properties of operations.	
2.MD.1	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks,and measuring tapes.	#3 Using standard units of measure
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.	
2.MD.3	Estimate lengths using units of inches, feet, centimeters, and meters.	
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.	

Instructional Supports
Click on the Clear Learning Targets to find vocabulary, learning targets, and sample questions.

Timeframe	Clear Learning Targets	Essential Understandings	Strategies and Approaches	Assessment Opportunities
		Quarter 3		
20 days	*2.NBT.7	The digit in the ones place will remain the same when finding 10 more or 10 less. The digits in the tens place and the ones place will remain the same when finding 100 more or 100 less. There is a relationship between addition and subtraction. When adding or subtracting three-digit numbers, hundreds are added or subtracted from hundreds, tens are added or subtracted from tens, ones are added or subtracted from ones. When adding or subtracting, sometimes it is necessary to compose or decompose tens or hundreds.	Use concrete models, drawings, place value, properties of operations, and other strategies for addition and subtraction within 1,000. Use number line models. Identify problems that require decomposing the tens or hundreds to find a solution.	Pose real-world addition and subtraction problems using the mathematical situations in Table 1 of the Standards. Have students explain the strategy they used to solve the problems using grade-level appropriate language. Give students a number line model that represents adding up to find the difference of two numbers. Have students explain the strategy that was represented in the model. Ex. Dominic has 463 baseball cards. He wants to give away 287 of those cards to his best friend. How many cards will he have left? Dominic uses the number line model to add up. Explain the strategy Dominic used.
	*2.NBT.9	When adding and subtracting numbers, the place and value of the digits is important for determining either the	Use a number line, hundred chart, and place value blocks to model the mathematics.	Pose real-world multi-step problems using problem structures that are grade level appropriate using Table 1

		sum or the difference.	Explain and justify why addition and subtraction strategies work.	of the Standards. Have students use grade-level mathematical language to explain the strategy they used to solve the problem. Give students an addition or subtraction problem with the sum or difference given. Have students use mathematical reasoning to explain how the problem could have been solved.
	*2.NBT.6	When adding and subtracting numbers, the place and value of the digits is important for determining either the sum or the difference. The digit in the ones place will remain the same when finding 10 more or 10 less. The digits in the tens place and the ones place will remain the same when finding 100 more or 100 less.	Use strategies to add up to four two-digit numbers.	Pose problems asking students to explain the thinking of others. Ex. Alli wants to find the sum of these three numbers. 27 + 16 + 43. She uses the strategy of making 10. Explain how Allie solved the problem. Pick 4 numbers from a hundred chart. Have students explain the strategy they would use to add the four numbers together. Have students compare the reasoning of others to their strategy.
22 days	2.MD.1	Length is measured by using an appropriate tool. Length is found by counting intervals rather than counting the marks on a measurement tool.	Select and use appropriate tools: rulers, meter sticks, yard sticks, and measuring tapes. Use physical representations of standard units to measure length.	Pose real-world problems where students measure the length of an object twice. Measure once by starting at the end point of the measurement tool to find the length then have students lay the same

		The length of an object remains constant regardless of where it is placed on a measurement tool. Starting points on a measurement tool may vary. Units must be of equal size. Measurements can be nonstandard or standard units. All measurements include a margin of error. Numerals on a measuring tool indicate the number of length units.	Iterate with a physical unit repeatedly marking off its end point, in order to measure length.	object at another location on the tool. Have students compare the measurements and explain the reasoning. Pose a real-world problem where students need to determine the appropriate tool to be used to measure. Have students justify their reasoning using grade-level appropriate language. Ex. What would be the best tool to measure the height of our principal?
	2.MD.2	There is a relationship between the size of the unit and the number of units required to cover the length. Length is measured by using an appropriate tool.	Use physical representations of standard units to measure length. Iterate with a physical unit repeatedly marking off its end point, in order to measure length. Discuss and describe how different units can give different measurements.	Pose a real-world problem where students compare the measurement of an object that has been measured using two different units of measurement. Have students explain the reasoning they used to compare the two numbers. Ex. Provide the measurement of a pencil using inches and centimeters. Have students reasoning about the numbers to explain why they are different measurements but represent the same length of the object. Students should use grade-level mathematical language to explain.

				Given objects to measure, have students describe the tool that would be best to use to measure accurately. Have students explain their reasoning.
	2.MD.3	There is a relationship between the size of the unit and the number of units required to cover the length. Lengths can be estimated.	Emphasize the use of approximate language using phrases such as "about how many." Estimate and measure lengths using inches, feet, centimeters, and meters.	Given an object, have students estimate the measurement of the object comparing it to a standard unit of measurement. Have students explain their reasoning using grade-level appropriate language. Have students estimate the lengths of different objects. Have students determine the reasonableness of their answers and justify that reasoning.
	2.MD.4	Length is measured by using an appropriate tool. Numerals on a measuring tool indicate the number of length units. Lengths can be compared.	Compare two lengths using subtraction. Compare results of measuring with different nonstandard and standard length-units.	Pose real-world multi-step problems where students need to measure the lengths of two objects and determine the difference between the two lengths. Have students explain their reasoning.

[Link to Ohio's 2nd Grade Model Curriculum](#)

Timeline

		Quarter 3											
Lesson Number	Lesson 16	Lesson 17	Lesson 18	Lesson 19	Math Task	Unit Assessment	Lesson 20	Lesson 21	Lesson 22	Lesson 23	Lesson 24	Mid-Unit Assessment
Lesson Standards	*2.NBT.7 *2.NBT.9	*2.NBT.7 *2.NBT.9	*2.NBT.7 *2.NBT.9	*2.NBT.6 *2.NBT.9	2.NBT.1 2.NBT.3 2.NBT.4 *2.NBT.5 *2.NBT.6 *2.NBT.7 *2.NBT.8 *2.NBT.9 *2.OA.1		2.MD.1	2.MD.1	2.MD.2	2.MD.3	2.MD.4	
Supporting Standards	2.NBT.3 *2.NBT.8	2.NBT.3 *2.NBT.8		*2.NBT.5 2.MD.8						2.MD.1	2.MD.1	

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Scope and Sequence

		Quarter 4	
		Standard	**Link to Ohio's Critical Area of Focus**
*2.MD.5		Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same whole number units, e.g., by using 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 wherever drawings are mentioned in the Standards.)	#2 Building fluency with addition and subtraction
*2.MD.6		Represent whole numbers as lengths from 0 on a number line diagram^G 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.	
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 creating a line plot^G, where the horizontal scale is marked off in whole number units.	#3 Using standard units of measure
2.G.1		Recognize and identify triangles, quadrilaterals, pentagons, and hexagons based on the number of sides or vertices. Recognize and identify cubes, rectangular prisms, cones, and cylinders.	#4 Describing and analyzing shapes
2.G.3		Partition circles and rectangles into two, three, or four equal shares; describe the shares using the words *half of, third of, thirds, or fourths* and *quarter of.* Describe the whole as two halves, three thirds, or four fourths in real-world contexts. Recognize that equal shares of identical wholes need not have the same shape.	
2.G.2		Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.	

| 2.OA.4 | Use addition to find the total number 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. | |
| 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. | #2 Building fluency with addition and subtraction |

Instructional Supports
Click on the Clear Learning Targets to find vocabulary, learning targets, and sample questions.

Quarter 4				
Timeframe	Clear Learning Targets	Essential Understandings	Strategies and Approaches	Assessment Opportunities
17 days	*2.MD.5	Addition and subtraction strategies can be used to solve real-world measurement problems. A symbol can be used to represent an unknown number.	Explore and explain the use of addition and subtraction to solve real-world problems involving lengths (given in the same whole number units). Use drawings and equations with a symbol for the unknown number to represent the problem. Find the unknown length unit in real-world situations.	Pose real-word multi-step measurement problems where students must interpret the word problem to determine the operation(s) to be used. Include problems with the unknown in all positions. Students can use drawings or models to make sense of the problems. Have students explain the strategy used to solve the problem using grade-level appropriate mathematical language. When creating problems, use the

				mathematical situations found in Table 1 of the Standards.
	*2.MD.6	There is a relationship between number lines and measurement tools. A number line diagram is similar to a ruler in that whole numbers are 1 unit apart. Each number on a number line denotes the distance from the labeled point from 0, not the number itself.	Explore the relationship between number lines and whole number measurement tools. Represent whole numbers as equally spaced lengths from 0 on a number line. Represent whole number sums and differences within 100 on a number line diagram. Use number line diagrams to solve real-world problems.	Given a number line model, pose real-world addition and subtraction problems where students have to represent how they solve the problem using the model. Have students explain the strategies they used to solve the problem. (Strategies can include those found in 1.OA.6)
	2.MD.9	Length measurement data can be generated and used to create a line plot in whole number units.	Use measurement tools to gather measurement data. Collect measurement data by making repeated measurements of the same object, e.g., the height of a growing plant or the distances between locations on a map. Explore and record data using line plots in whole number units.	Given measurement tools, have students measure items to create data, Have students use the data to create a line plot. Types of objects that could be measured include a plant over time, lengths of various pencils, length of students hands or feet etc. Given real world measurement data, have students create a line plot that represents the data. Have students write statements that represent facts about the data using grade-level appropriate language.
24 days	2.G.1	Two-dimensional shapes (that are closed and have straight sides meeting	Explore classifying triangles, quadrilaterals, pentagons, and hexagons based on the number	Pose questions where students are given characteristics of shapes and

	at corners/vertices) can be classified by the number of sides and/or vertices. Three-dimensional shapes (cubes, rectangular prisms, cones, and cylinders) can be recognized and identified.	of sides or vertices. Provide real-world experiences to recognize and name cubes, rectangular prisms, cones, and cylinders.	have to reason to determine if the statement is true or false. Have students explain their reasoning using grade-level appropriate mathematical language. Have students classify shapes and explain the reasoning they used. Reasons can include number of sides, number of vertices, as well as two and three dimensional attributes.
2.G.3	When decomposing circles and rectangles into halves, thirds, or fourths, equal shares of identical wholes need not have the same shape.	Explore and describe part-whole relationships. Relate two, three, or four equal shares to circles and rectangles. Describe equal shares using the terms halves, thirds, fourths, quarters and the phrases half of, third of, fourth of, quarter of in real-world contexts. Explore the decomposition of shapes into halves, thirds, and fourths; equal shares of identical wholes need not have the same shape, e.g., a rectangle divided into fourths vertically results in rectangular parts or diagonally results in triangular parts.	Pose real-world problems where students need to partition circles and rectangles into equal sized parts. Give students models that are the same size and partitioned into the same number of pieces but are partitioned differently. Have students explain how they represent equal parts but can be different shapes. Ex. Have congruent rectangles that are partitioned into 4 equal parts differently, Have students justify their reasoning.
2.G.2	Rectangles can be partitioned into rows and columns.	Partition rectangles into rows and columns of same-size squares. Count to find the total number of same-size	Give students models of rectangles that are partitioned into rows and columns. Have students identify the model that represents a given

		squares in a partitioned rectangle.	number. Have students explain the strategy they used to identify the correct model. Pose real-world problems where students have to use models of rectangles that are partitioned into rows and columns to solve the problem. Have students explaining their reasoning.
2.OA.4	Each row in an array has an equal number of objects. Each column in an array has an equal number of objects. Adding rows or columns of an array will result in the same solution. The number of objects in an array is the same when the array is turned (rotated).	Each row in an array has an equal number of objects. Each column in an array has an equal number of objects. Adding rows or columns of an array will result in the same solution. The number of objects in an array is the same when the array is turned (rotated).	Pose real-world problems where students are given an array. Students need to interpret the model and use an equation to represent the array numerically. Have students explain their thinking using grade-level appropriate mathematical language. Give students a set of numbers. Have students determine if the numbers can be represented using an array. Have students justify their reasoning. Ex. 25, 12, 9, 5, 16. Which numbers can be represented using an array and which can not. Justify your answer.
2.OA.3	Whole numbers are odd or even. When pairing an even numbered group of objects, no members are left over. When pairing an odd numbered group	Represent a group of objects as odd or even by creating models, drawing pictures, and writing equations. Use strategies to determine if a group of objects has an odd or even number of	Given a set of numbers, have students identify if the numbers are odd or even. Have students use a model or drawing to justify their answers. EX. 5, 6, 11, 8, 4. Which numbers are odd and which are even. Create a

		of objects, one member is left over. An even number may be decomposed into two equal addends, e.g., 10 = 5 + 5; 8 = 4 + 4.	members. Identify whole numbers between 0 and 25 as odd or even. Generalize a rule for why a number is odd or even. Write an equation to represent an even number as the sum of two equal addends.	model or drawing to justify your answer. Pose questions that require students to interpret the information to make a reasonable conclusion. Ex. Juile has two sticker books. Each book has the same number of stickers. What number could be the total number of stickers Julie has in her books? Justify your answer. (There are multiple responses for this question. Students will identify that the number has to be an even number since each book has the same number.)
			[Link to Ohio's 2nd Grade Model Curriculum](#)	

Timeline

Lesson Number	Lesson 25	Lesson 26	Lesson 27	Math Task	Unit Assessment	Lesson 28	Lesson 29	Lesson 30	Lesson 31	Lesson 32	Math Task	Unit Assessment
Lesson Standards	*2.MD.5	*2.MD.6	2.MD.9	2.MD.1 2.MD.4 *2.MD.5 2.MD.8		2.G.1 See Educator Notes for Ohio Enhancement Activities	2.G.3 See Educator Notes for Ohio Enhancement Activities	2.G.2	2.OA.4	2.OA.3	2.G.1 2.G.2 2.G.3 2.OA.3	
Supporting Standards	*2.OA.1 *2.NBT.5	*2.OA.1	*2.MD.6						2.NBT.2			

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Mathematical Practices

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 2, 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. They 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 make conjectures about the solution and plan out a problem-solving approach. An example for this might be giving a student an equation and having him/her write a story to match.	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. Second graders begin to know and use different properties of operations and relate addition and subtraction to length. In Grade 2 students represent situations by decontextualizing tasks into numbers and symbols. For example, in the task, "There are 25 children in the cafeteria, and they are joined by 17 more children. How many students are in the cafeteria?" Students translate the situation into an equation, such as: 25 + 17 = and then solve the problem. Students also contextualize situations during the problem solving process. For example, while solving the task above, students might refer to the context of the task to determine that they need to subtract 19 if 19 children leave.	Second graders may construct arguments using concrete referents, such as objects, pictures, drawings, and actions. They 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 appropriate questions. Students critique the strategies and reasoning of their classmates. For example, to solve 74 − 18, students may use a variety of strategies, and after working on the task, they might discuss and critique each other's' reasoning and strategies, citing similarities and differences between various problem solving approaches.

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. In Grade 2 students model real-life mathematical situations with a number sentence or an equation and check to make sure that their equation accurately matches the problem context. They use concrete manipulatives and pictorial representations to explain the equation. They create an appropriate problem situation from an equation. For example, students create a story problem for the equation $43 + 17 = \square$ such as "There were 43 gumballs in the machine. Tom poured in 17 more gumballs. How many gumballs are now in the machine?"	In Grade 2, students consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be better suited. For instance, second graders may decide to solve a problem by drawing a picture rather than writing an equation. Students may use tools such as snap cubes, place value (base ten) blocks, hundreds number boards, number lines, rulers, virtual manipulatives, and concrete geometric shapes (e.g., pattern blocks, three dimensional solids). Students understand which tools are the most appropriate to use. For example, while measuring the length of the hallway, students can explain why a yardstick is more appropriate to use than a ruler.	As 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. Second grade students communicate clearly, using grade-level appropriate vocabulary accurately and precise explanations and reasoning to explain their process and solutions. For example, while measuring an object, students carefully line up the tool correctly to get an accurate measurement. During tasks involving number sense, students consider if their answer is reasonable and check their work to ensure the accuracy of solutions.

Mathematical Practice Standards Taught Throughout the Year	
7. Look for and make use of structure	**8. Look for and express regularity in repeated reasoning**
Second grade students look for patterns and structures in the number system. For example, students notice number patterns within the tens place as they connect skip counting by 10s to corresponding numbers on a 100s chart. Students see structure in the base-ten number system as they understand that 10 ones equal a ten, and 10 tens equal a hundred. Students adopt mental math strategies based on patterns (making ten, fact families, doubles). They use structure to understand subtraction as a missing addend problems (e.g., $50 - 33 = \square$ can be written as $33 + \square = 50$ and can be thought of as "How much more do I need to add to 33 to get to 50?")	Second grade students notice repetitive actions in counting and computation (e.g., number patterns to skip count). When children have multiple opportunities to add and subtract, they look for shortcuts, such as using estimation strategies and then adjust the answer to compensate. Students continually check for the reasonableness of their solutions during and after completing a task by asking themselves, "Does this make sense?"