

Grade Two Mathematics

Domain	<i>Operations and Algebraic Thinking</i>	
Cluster	<i>Represent and solve problems involving addition and subtraction</i>	Pacing Quarter 1: Stepping Stones Modules 1, 2, 3 Quarter 2: Stepping Stones Modules 4, 5, 6 Quarter 3: Stepping Stones Modules 7, 8, 9 Quarter 4: Stepping Stones Modules 10, 11, 12
Standards	Content Elaborations	
<p>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.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can choose when to use addition or subtraction in a word problem. • I can show addition and subtraction word problems using objects and drawings. • I can write and solve addition and subtraction number sentences with missing numbers. • I can solve two-step addition and subtraction word problems. 	<p><u>Key Advances From First Grade</u></p> <p><i>Represent and solve problems involving addition and subtraction.</i></p> <ol style="list-style-type: none"> 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. 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. <p><i>Understand and apply properties of operations and the relationship between addition and subtraction.</i></p> <ol style="list-style-type: none"> 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). 4. Understand subtraction as an unknown-addend problem. For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8. <p><i>Add and subtract within 20.</i></p> <ol style="list-style-type: none"> 5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). 6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. 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 and subtraction (e.g., knowing that $8 + 4 = 12$, one knows that $12 - 8 = 4$), and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).

Work with addition and subtraction equations.

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? $6 = 6$; $7 = 8 - 1$; $5 + 2 = 2 + 5$; $4 + 1 = 5 + 2$.
8. Determine the unknown number in a whole-number addition or subtraction equation. For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$; $5 = \square - 3$; $6 + 6 = \square$.

Content Progression for Third Grade

Represent and solve problems involving multiplication and division.

1. Interpret products of whole numbers; e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5×7 .
2. Interpret whole-number quotients of whole numbers; e.g., interpret $56 \div 8$ as the whole number of objects in each share when 56 objects are partitioned equally into 8 shares or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.
3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities; e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations: $8 \times ? = 48$; $5 = \square \div 3$; $6 \times 6 = ?$.

Understand properties of multiplication and the relationship between multiplication and division.

5. Apply properties of operations as strategies to multiply and divide. Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known (commutative property of multiplication). $3 \times 5 \times 2$ can be found by 3×5

= 15 then $15 \times 2 = 30$, or by $5 \times 2 = 10$ then $3 \times 10 = 30$ (associative property of multiplication). Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$ (distributive property).

6. Understand division as an unknown-factor problem. For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.

Multiply and divide within 100.

7. Fluently multiply and divide within 100 using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of grade 3 know from memory all products of two one-digit numbers.

Solve problems involving the four operations, and identify and explain patterns in arithmetic.

8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity.

Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

9. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.

Standards of Mathematical Practice

Mathematically proficient students

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.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Content Vocabulary

- word problem
- addition
- subtraction

Academic Vocabulary

- compare
- contrast
- compose

<ul style="list-style-type: none"> • number sentence 	<ul style="list-style-type: none"> • decompose • represent
<p>Formative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Summative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones
<p>Resources</p> <ul style="list-style-type: none"> • jmathpage.com • http://illuminations.nctm.org • Ohio Department of Education Model Curriculum • K-8 Standards Progression • Partnership for the Assessment for Readiness of College and Career www.parcconline.org 	<p>Enrichment Strategies</p> <ul style="list-style-type: none"> • See Stepping Stones
<p>Integrations</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Intervention Strategies</p> <ul style="list-style-type: none"> • Stepping Stones

Grade Two Mathematics

<p>Domain <i>Operations and Algebraic Thinking</i></p> <p>Cluster <i>Add and subtract within 20</i></p>	<p>Pacing</p> <p>Quarter 1: Stepping Stones Modules 1, 2, 3 Quarter 2: Stepping Stones Modules 4, 5, 6 Quarter 3: Stepping Stones Modules 7, 8, 9 Quarter 4: Stepping Stones Modules 10, 11, 12</p>
<p>Standards</p> <p>2. <i>Fluently add and subtract within 20 using mental strategies. By end of grade 2, know from memory all sums of two one-digit numbers.</i></p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can use mental math to fluently add and subtract numbers within 20. • I can memorize my addition and subtraction facts up to 20. 	<p>Content Elaborations</p> <p><u>Key Advances From First Grade</u></p> <p><i>Represent and solve problems involving addition and subtraction.</i></p> <ol style="list-style-type: none"> 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. 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. <p><i>Understand and apply properties of operations and the relationship between addition and subtraction.</i></p> <ol style="list-style-type: none"> 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). 4. Understand subtraction as an unknown-addend problem. For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8. <p><i>Add and subtract within 20.</i></p> <ol style="list-style-type: none"> 5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). 6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. 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 and subtraction (e.g., knowing that $8 + 4 = 12$, one knows that $12 - 8 = 4$), and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).

Work with addition and subtraction equations.

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? $6 = 6$; $7 = 8 - 1$; $5 + 2 = 2 + 5$; $4 + 1 = 5 + 2$.
8. Determine the unknown number in a whole-number addition or subtraction equation. For example, determine the unknown number that makes the equation true in each of the equations: $8 + ? = 11$; $5 = \square - 3$; $6 + 6 = \square$.

Content Progression for Third Grade

Represent and solve problems involving multiplication and division.

1. Interpret products of whole numbers; e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5×7 .
2. Interpret whole-number quotients of whole numbers; e.g., interpret $56 \div 8$ as the whole number of objects in each share when 56 objects are partitioned equally into 8 shares or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.
3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities; e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations: $8 \times ? = 48$; $5 = \square \div 3$; $6 \times 6 = ?$.

Understand properties of multiplication and the relationship between multiplication and division.

5. Apply properties of operations as strategies to multiply and divide. Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known (commutative property of multiplication). $3 \times 5 \times 2$ can be found by 3×5

	<p>= 15 then $15 \times 2 = 30$, or by $5 \times 2 = 10$ then $3 \times 10 = 30$ (associative property of multiplication). Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$ (distributive property).</p> <p>6. Understand division as an unknown-factor problem. For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.</p> <p><i>Multiply and divide within 100.</i></p> <p>7. Fluently multiply and divide within 100 using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of grade 3 know from memory all products of two one-digit numbers.</p> <p><i>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</i></p> <p>8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p> <p>9. Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.</p> <p><u>Standards of Mathematical Practice</u></p> <p><i>Mathematically proficient students</i></p> <ol style="list-style-type: none"> 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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.
<p>Content Vocabulary</p>	<p>Academic Vocabulary</p> <ul style="list-style-type: none"> • fluently
<p>Formative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Summative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones

Resources <ul style="list-style-type: none">• Ohio Department of Education Model Curriculum• K-8 Standards Progression• Partnership for the Assessment for Readiness of College and Career www.parcconline.org	Enrichment Strategies <ul style="list-style-type: none">• See Stepping Stones
Integrations <ul style="list-style-type: none">• See Stepping Stones	Intervention Strategies <ul style="list-style-type: none">• Stepping Stones

Grade Two Mathematics

<p>Domain <i>Operations and Algebraic Thinking</i></p> <p>Cluster <i>Work with equal groups of objects to gain foundations for multiplication</i></p>	<p>Pacing</p> <p>Quarter 1: Stepping Stones Modules 1, 2, 3 Quarter 2: Stepping Stones Modules 4, 5, 6 Quarter 3: Stepping Stones Modules 7, 8, 9 Quarter 4: Stepping Stones Modules 10, 11, 12</p>
<p>Standards</p> <p>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.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can identify a group of objects as odd or even. • I can write a number sentence to show that an even sum has two equal addends. <p>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>Learning Targets:</p> <ul style="list-style-type: none"> • I can use addition to find the total number of objects in an array. • I can write an addition number sentence to show the total number of objects in an array. 	<p>Content Elaborations</p> <p><u>Key Advances From First Grade</u></p> <p><i>Represent and solve problems involving addition and subtraction.</i></p> <ol style="list-style-type: none"> 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. 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. <p><i>Understand and apply properties of operations and the relationship between addition and subtraction.</i></p> <ol style="list-style-type: none"> 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). 4. Understand subtraction as an unknown-addend problem. For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8. <p><i>Add and subtract within 20.</i></p> <ol style="list-style-type: none"> 5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). 6. Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on, making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$), decomposing a number leading to a

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Solve problems involving the four operations, and identify and explain patterns in arithmetic.

8. Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity.

Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

9. Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.

Standards of Mathematical Practice

Mathematically proficient students

1. Make sense of problems and persevere in solving them.
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7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Content Vocabulary

- odd
- even

Academic Vocabulary

<ul style="list-style-type: none"> • rectangular array • addends 	
<p>Formative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Summative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones
<p>Resources</p> <ul style="list-style-type: none"> • Ohio Department of Education Model Curriculum • K-8 Standards Progression • Partnership for the Assessment for Readiness of College and Career www.parcconline.org 	<p>Enrichment Strategies</p> <ul style="list-style-type: none"> • See Stepping Stones
<p>Integrations</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Intervention Strategies</p> <ul style="list-style-type: none"> • Stepping Stones

Grade Two Mathematics

<p>Domain <i>Number and Operations in Base Ten</i></p> <p>Cluster <i>Understand place value</i></p>	<p>Pacing</p> <p>Quarter 1: Stepping Stones Modules 1, 2, 3 Quarter 2: Stepping Stones Modules 4, 5, 6 Quarter 3: Stepping Stones Modules 7, 8, 9 Quarter 4: Stepping Stones Modules 10, 11, 12</p>
<p>Standards</p> <p>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> <p>a. 100 can be thought of as a bundle of ten tens 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> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can represent a hundred as ten groups of ten. • I can represent each digit in a three-digit number using hundreds, tens, and ones. • I can explain the value of each digit in a three-digit number. • I can explain the value of zero in a given number. <p>2. Count within 1000; skip-count by 5s, 10s, and 100s.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can skip count to 1000 by 5s, 10s, and 100s <p>3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can read and write numbers up to 1000 using words. • I can read and write numbers using expanded form. • I can read and write numbers up to 1000 using number names. 	<p>Content Elaborations</p> <p><u>Key Advances From First Grade</u></p> <p><i>Extend the counting sequence.</i></p> <ol style="list-style-type: none"> 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. 2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following special cases: <ol style="list-style-type: none"> a. 10 can be thought of as a bundle of ten ones called a “ten.” b. The numbers from 11-19 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). 3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$. <p><i>Use place value understanding and properties of operations to add and subtract.</i></p> <ol style="list-style-type: none"> 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; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones and sometimes it is necessary to compose a ten. 5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

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.

Learning Targets:

- I can explain whether a three-digit number is greater than, less than, or equal to another three-digit number.
- I can use the symbols $<$, $>$, and $=$ in a number sentence to compare two three-digit numbers.

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.

Content Progression for Third Grade

Use place value understanding and properties of operations to perform multi-digit arithmetic.

1. Use place value understanding to round whole numbers to the nearest 10 or 100.
2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3. Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations.

Standards of Mathematical Practice

Mathematically proficient students

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3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
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8. Look for and express regularity in repeated reasoning.

Content Vocabulary

- digit
- hundreds
- tens
- ones
- skip-count
- place value
- $<$

Academic Vocabulary

- equal
- compare
- represent
- results

<ul style="list-style-type: none"> • > • = • expanded form • numerals 	
<p>Formative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Summative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones
<p>Resources</p> <ul style="list-style-type: none"> • <i>Number Talks</i>, by Sherry Parrish • <i>It Makes Sense</i>, by Melissa Conklin • <i>Number Sense Routines</i>, by Jessica F. Shumway • jmathpage.com • http://illuminations.nctm.org • Everyday Math games • Ohio Department of Education Model Curriculum • K-8 Standards Progression • Partnership for the Assessment for Readiness of College and Career www.parcconline.org 	<p>Enrichment Strategies</p> <ul style="list-style-type: none"> • See Stepping Stones
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Grade Two Mathematics

<p>Domain <i>Number and Operations in Base Ten</i></p> <p>Cluster <i>Use place value understanding and properties of operations to add and subtract.</i></p>	<p>Pacing</p> <p>Quarter 1: Stepping Stones Modules 1, 2, 3 Quarter 2: Stepping Stones Modules 4, 5, 6 Quarter 3: Stepping Stones Modules 7, 8, 9 Quarter 4: Stepping Stones Modules 10, 11, 12</p>
<p>Standards</p> <p>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>Learning Targets:</p> <ul style="list-style-type: none"> • I can add and subtract numbers within 100 using place value. • I can add and subtract numbers within 100 using mental math. • I can add and subtract numbers within 100 using the commutative, associative, and identity properties. <p>6. Add up to four two-digit numbers using strategies based on place value and properties of operations.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can add up to four two-digit numbers. <p>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 written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can add up to four two-digit numbers by using addition and subtraction strategies. 	<p>Content Elaborations</p> <p><u>Key Advances From First Grade</u></p> <p><i>Extend the counting sequence.</i></p> <ol style="list-style-type: none"> 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. 2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following special cases: <ol style="list-style-type: none"> a. 10 can be thought of as a bundle of ten ones called a “ten.” b. The numbers from 11-19 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). 3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$. <p><i>Use place value understanding and properties of operations to add and subtract.</i></p> <ol style="list-style-type: none"> 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; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones, and sometimes it is necessary to compose a ten. 5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

<ul style="list-style-type: none"> • I can use models and drawings to show how to add within 1000 using place value. • I can use models and drawings to show how to subtract within 1000 using place value. • I can use models and drawings to add and subtract numbers within 1000 using the commutative, associative, and identity properties. • I can write down and explain the steps I followed as I used the models or drawings to show how I added or subtracted. <p>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>Learning Targets:</p> <ul style="list-style-type: none"> • I can add and subtract numbers within 100 using mental math. • I can mentally add 10 to a given number from 100-900. • I can mentally subtract 10 to a given number from 100-900. • I can mentally add 100 to a given number from 100-900. • I can mentally subtract 100 to a given number from 100-900. <p>9. Explain why addition and subtraction strategies work, using place value and the properties of operations.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can explain addition and subtraction using place value. • I can explain addition and subtraction using the commutative, associative, and identity properties. 	<p>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.</p> <p><u>Content Progression for Third Grade</u></p> <p><i>Use place value understanding and properties of operations to perform multi-digit arithmetic.</i></p> <ol style="list-style-type: none"> 1. Use place value understanding to round whole numbers to the nearest 10 or 100. 2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. 3. Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9×80, 5×60) using strategies based on place value and properties of operations. <p><u>Standards of Mathematical Practice</u></p> <p><i>Mathematically proficient students</i></p> <ol style="list-style-type: none"> 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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.
<p>Content Vocabulary</p> <ul style="list-style-type: none"> • place value • commutative property • associative property • identity property • addends • sum • difference 	<p>Academic Vocabulary</p>

<ul style="list-style-type: none"> • compose • decompose 	
<p>Formative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Summative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones
<p>Resources</p> <ul style="list-style-type: none"> • Ohio Department of Education Model Curriculum • K-8 Standards Progression • Partnership for the Assessment for Readiness of College and Career www.parcconline.org 	<p>Enrichment Strategies</p> <ul style="list-style-type: none"> • See Stepping Stones
<p>Integrations</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Intervention Strategies</p> <ul style="list-style-type: none"> • Stepping Stones

Grade Two Mathematics

<p>Domain <i>Measurement and Data</i></p> <p>Cluster <i>Measure and estimate lengths in standard units.</i></p>	<p>Pacing</p> <p>Quarter 1: Stepping Stones Modules 1, 2, 3 Quarter 2: Stepping Stones Modules 4, 5, 6 Quarter 3: Stepping Stones Modules 7, 8, 9 Quarter 4: Stepping Stones Modules 10, 11, 12</p>
<p>Standards</p> <p>1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can use the right tool to measure an object. • I can correctly measure the length of an object using a tool. <p>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.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can select several appropriate units of length to measure an object. • I can correctly measure an object with two different units of length. • I can compare two different lengths of measurement. <p>3. Estimate lengths using units of inches, feet, centimeters, and meters.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can estimate the length of a given object in inches and feet. • I can estimate the length of a given object in centimeters and meters. <p>4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can measure the length of any object in a given unit. • I can find the difference in length between two objects using standard units. 	<p>Content Elaborations</p> <p><u>Key Advances From First Grade</u></p> <p><i>Measure lengths indirectly and by iterating length units.</i></p> <ol style="list-style-type: none"> 1. Order three objects by length; compare the lengths of two objects indirectly by using a third object. 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. <p><i>Tell and write time.</i></p> <ol style="list-style-type: none"> 3. Tell and write time in hours and half-hours using analog and digital clocks. <p><i>Represent and interpret data.</i></p> <ol style="list-style-type: none"> 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. <p><u>Content Progression for Third Grade</u></p> <p><i>Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.</i></p> <ol style="list-style-type: none"> 1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes; e.g., by representing the problem on a number line diagram.

2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units; e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.

Represent and interpret data.

3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.
4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot where the horizontal scale is marked off in appropriate units – whole numbers, halves, or quarters.

Geometric measurement: understand concepts of area and relate to multiplication and to addition.

5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
 - a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area and can be used to measure area.
 - b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
7. Relate area to the operations of multiplication and addition.
 - a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
 - b. Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
 - c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.

- d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

8. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

Standards of Mathematical Practice

Mathematically proficient students

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.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Content Vocabulary

- measure
- ruler
- yardstick
- meter stick
- measuring tape
- length
- estimate
- unit
- inches
- feet
- centimeters
- meters
- difference

Academic Vocabulary

- measure
- estimate
- describe
- compare
- relate

<p>Formative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Summative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones
<p>Resources</p> <ul style="list-style-type: none"> • jmathpage.com • http://illuminations.nctm.org • Ohio Department of Education Model Curriculum • K-8 Standards Progression • Partnership for the Assessment for Readiness of College and Career www.parcconline.org 	<p>Enrichment Strategies</p> <ul style="list-style-type: none"> • See Stepping Stones
<p>Integrations</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Intervention Strategies</p> <ul style="list-style-type: none"> • Stepping Stones

Grade Two Mathematics

<p>Domain <i>Measurement and Data</i></p> <p>Cluster <i>Relate addition and subtraction to length.</i></p>	<p>Pacing</p> <p>Quarter 1: Stepping Stones Modules 1, 2, 3 Quarter 2: Stepping Stones Modules 4, 5, 6 Quarter 3: Stepping Stones Modules 7, 8, 9 Quarter 4: Stepping Stones Modules 10, 11, 12</p>
<p>Standards</p> <p>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.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can add and subtract lengths of the same unit up to 100. • I can show addition and subtraction word problems using lengths of the same unit. • I can use drawings and equations with a symbol for the unknown length. • I can solve for the unknown number in a word problem. <p>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.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can create a number line with equal spacing. • I can show whole numbers on a number line. • I can find sums and differences up to 100 using a number line 	<p>Content Elaborations</p> <p><u>Key Advances From First Grade</u></p> <p><i>Measure lengths indirectly and by iterating length units.</i></p> <ol style="list-style-type: none"> 1. Order three objects by length; compare the lengths of two objects indirectly by using a third object. 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. <p><i>Tell and write time.</i></p> <ol style="list-style-type: none"> 3. Tell and write time in hours and half-hours using analog and digital clocks. <p><i>Represent and interpret data.</i></p> <ol style="list-style-type: none"> 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. <p><u>Content Progression for Third Grade</u></p> <p><i>Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.</i></p> <ol style="list-style-type: none"> 1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes; e.g., by representing the problem on a number line diagram.

2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units; e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.

Represent and interpret data.

3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.
4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot where the horizontal scale is marked off in appropriate units – whole numbers, halves, or quarters.

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
 - a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area and can be used to measure area.
 - b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
7. Relate area to the operations of multiplication and addition.
 - a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
 - b. Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
 - c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.

	<p>d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.</p> <p><i>Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.</i></p> <p>8. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.</p> <p><u>Standards of Mathematical Practice</u></p> <p><i>Mathematically proficient students</i></p> <ol style="list-style-type: none"> 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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.
<p>Content Vocabulary</p> <ul style="list-style-type: none"> • word problems • lengths • unit • equations • number line • sums • differences • equal spacing 	<p>Academic Vocabulary</p> <ul style="list-style-type: none"> • sum • draw • represent • point • correspond
<p>Formative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Summative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones

<p>Resources</p> <ul style="list-style-type: none"> • jmathpage.com • http://illuminations.nctm.org • Ohio Department of Education Model Curriculum • K-8 Standards Progression • Partnership for the Assessment for Readiness of College and Career www.parcconline.org 	<p>Enrichment Strategies</p> <ul style="list-style-type: none"> • See Stepping Stones
<p>Integrations</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Intervention Strategies</p> <ul style="list-style-type: none"> • Stepping Stones

Grade Two Mathematics

<p>Domain <i>Measurement and Data</i></p> <p>Cluster <i>Work with time and money</i></p>	<p>Pacing</p> <p>Quarter 1: Stepping Stones Modules 1, 2, 3 Quarter 2: Stepping Stones Modules 4, 5, 6 Quarter 3: Stepping Stones Modules 7, 8, 9 Quarter 4: Stepping Stones Modules 10, 11, 12</p>
<p>Standards</p> <p>7. Tell and write time from analog and digital clocks to the nearest five minutes using a.m. and p.m.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can explain the differences between a.m. and p.m. • I can tell and write the time on an analog clock to the nearest 5 minutes. • I can tell and write the time on a digital clock to the nearest 5 minutes. • I can understand and use special terms such as half past, quarter after/past, quarter to, minutes after/past, minutes to. <p>8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies using \$ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can identify and give the value of dollar bills, quarters, dimes, nickels, and pennies. • I can use \$ and ¢ symbol. • I can solve a word problem with dollar bills, quarters, dimes, nickels, and pennies. 	<p>Content Elaborations</p> <p><u>Key Advances From First Grade</u></p> <p><i>Measure lengths indirectly and by iterating length units.</i></p> <ol style="list-style-type: none"> 1. Order three objects by length; compare the lengths of two objects indirectly by using a third object. 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. <p><i>Tell and write time.</i></p> <ol style="list-style-type: none"> 3. Tell and write time in hours and half-hours using analog and digital clocks. <p><i>Represent and interpret data.</i></p> <ol style="list-style-type: none"> 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. <p><u>Content Progression for Third Grade</u></p> <p><i>Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.</i></p> <ol style="list-style-type: none"> 1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes; e.g., by representing the problem on a number line diagram.

2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units; e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.

Represent and interpret data.

3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.
4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot where the horizontal scale is marked off in appropriate units – whole numbers, halves, or quarters.

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
 - a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area and can be used to measure area.
 - b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
7. Relate area to the operations of multiplication and addition.
 - a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
 - b. Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
 - c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.

- d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

8. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

Standards of Mathematical Practice

Mathematically proficient students

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.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Content Vocabulary

- analog clock
- digital clock
- a.m.
- half past
- quarter after/past
- quarter to
- minutes after/past
- minutes to
- p.m.
- pennies
- cents (¢)
- nickels
- minutes
- hours

Academic Vocabulary

- solve
- variation

<ul style="list-style-type: none"> • dollars (\$) • quarters • dimes 	
<p>Formative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Summative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones
<p>Resources</p> <ul style="list-style-type: none"> • jmathpage.com • http://illuminations.nctm.org • Trudy's Time and Place • Ohio Department of Education Model Curriculum • K-8 Standards Progression • Partnership for the Assessment for Readiness of College and Career www.parcconline.org 	<p>Enrichment Strategies</p> <ul style="list-style-type: none"> • See Stepping Stones
<p>Integrations</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Intervention Strategies</p> <ul style="list-style-type: none"> • Stepping Stones

Grade Two Mathematics

<p>Domain <i>Measurement and Data</i></p> <p>Cluster <i>Represent and interpret data</i></p>	<p>Pacing</p> <p>Quarter 1: Stepping Stones Modules 1, 2, 3 Quarter 2: Stepping Stones Modules 4, 5, 6 Quarter 3: Stepping Stones Modules 7, 8, 9 Quarter 4: Stepping Stones Modules 10, 11, 12</p>
<p>Standards</p> <p>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.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can measure and record the lengths of several objects to the nearest whole number. • I can create a line plot with a horizontal scale marked off in whole-number units. • I can record length measurements on a line plot. <p>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.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can make a picture or bar graph with up to four categories to represent data. • I can compare data on a bar graph. • I can solve addition and subtraction problems using data from a picture or bar graph. 	<p>Content Elaborations</p> <p><u>Key Advances From First Grade</u></p> <p><i>Measure lengths indirectly and by iterating length units.</i></p> <ol style="list-style-type: none"> 1. Order three objects by length; compare the lengths of two objects indirectly by using a third object. 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. <p><i>Tell and write time.</i></p> <ol style="list-style-type: none"> 3. Tell and write time in hours and half-hours using analog and digital clocks. <p><i>Represent and interpret data.</i></p> <ol style="list-style-type: none"> 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. <p><u>Content Progression for Third Grade</u></p> <p><i>Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.</i></p> <ol style="list-style-type: none"> 1. Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes; e.g., by representing the problem on a number line diagram.

2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units; e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.

Represent and interpret data.

3. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.
4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot where the horizontal scale is marked off in appropriate units – whole numbers, halves, or quarters.

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

5. Recognize area as an attribute of plane figures and understand concepts of area measurement.
 - a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area and can be used to measure area.
 - b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.
6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
7. Relate area to the operations of multiplication and addition.
 - a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
 - b. Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
 - c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.

	<p>d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.</p> <p><i>Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.</i></p> <p>8. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.</p> <p><u>Standards of Mathematical Practice</u></p> <p><i>Mathematically proficient students</i></p> <ol style="list-style-type: none"> 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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.
<p>Content Vocabulary</p> <ul style="list-style-type: none"> • length • whole unit • line plot • scale • horizontal • vertical • bar graph • data • picture graph • compare • categories 	<p>Academic Vocabulary</p> <ul style="list-style-type: none"> • compare • measure • plot • graph
<p>Formative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Summative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones

<p>Resources</p> <ul style="list-style-type: none"> • jmathpage.com • http://illuminations.nctm.org • Graph Club • Ohio Department of Education Model Curriculum • K-8 Standards Progression • Partnership for the Assessment for Readiness of College and Career www.parcconline.org 	<p>Enrichment Strategies</p> <ul style="list-style-type: none"> • See Stepping Stones
<p>Integrations</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Intervention Strategies</p> <ul style="list-style-type: none"> • Stepping Stones

Grade Two Mathematics

<p>Domain <i>Geometry</i></p> <p>Cluster <i>Reason with shapes and their attributes</i></p>	<p>Pacing</p> <p>Quarter 1: Stepping Stones Modules 1, 2, 3 Quarter 2: Stepping Stones Modules 4, 5, 6 Quarter 3: Stepping Stones Modules 7, 8, 9 Quarter 4: Stepping Stones Modules 10, 11, 12</p>
<p>Standards</p> <p>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.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can identify the attributes of a shape. • I can use attributes to name shapes. • I can draw a shape when given its attributes. <p>2. Partition a rectangle into rows of same-size squares and count to find the total number of them.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can draw rows and columns of same size squares in a rectangle. • I can count the same size squares in a rectangle. <p>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.</p> <p>Learning Targets:</p> <ul style="list-style-type: none"> • I can divide a circle and rectangle into two, three, or four equal parts. • I can describe equal parts by using the words halves, thirds, or fourths. • I can describe a whole by the number of equal parts. • I can explain and give examples to show that halves, thirds, and fourths of a whole do not have to be the same shape. 	<p>Content Elaborations</p> <p><u>Key Advances From First Grade</u></p> <p><i>Reason with shapes and their attributes.</i></p> <ol style="list-style-type: none"> 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. 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. 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. <p><u>Content Progression for Third Grade</u></p> <p><i>Reason with shapes and their attributes.</i></p> <ol style="list-style-type: none"> 1. Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides) and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

	<p>2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as $\frac{1}{4}$ of the area of the shape.</p> <p><u>Standards of Mathematical Practice</u></p> <p><i>Mathematically proficient students</i></p> <ol style="list-style-type: none"> 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. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.
<p>Content Vocabulary</p> <ul style="list-style-type: none"> • shape • angle • face • triangles • quadrilaterals • pentagons • hexagons • cubes • square • halves • thirds • fourths • circle • rectangle • whole • attribute • equal share 	<p>Academic Vocabulary</p> <ul style="list-style-type: none"> • equal • draw • describe • spatial • identify
<p>Formative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones 	<p>Summative Assessments</p> <ul style="list-style-type: none"> • See Stepping Stones

Resources <ul style="list-style-type: none">• Ohio Department of Education Model Curriculum• K-8 Standards Progression• Partnership for the Assessment for Readiness of College and Career www.parcconline.org	Enrichment Strategies <ul style="list-style-type: none">• See Stepping Stones
Integrations <ul style="list-style-type: none">• See Stepping Stones	Intervention Strategies <ul style="list-style-type: none">• Stepping Stones