Grade One Mathematics

Domain ***Measurement and Data***

Cluster ***Measure lengths indirectly and by iterating length units***

Pacing

Quarter 1: Modules 1-3
Quarter 2: Modules 4-6
Quarter 3: Modules 7-9
Quarter 4: Modules 10-12

Standards

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

   Learning Targets:
   - I can recognize when an object is longer or shorter than another object.
   - I can organize three objects by length in order from shortest to longest.
   - I can compare the lengths of two objects 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.***

   Learning Targets:
   - I can measure length using nonstandard uniform units.

Content Elaborations

Key Advances From Kindergarten

Describe and compare measurable attributes.

1. Describe measurable attributes of objects such as length or weight. Describe several measurable attributes of a single object.
2. Directly compare two objects with a measurable attribute in common to see which object has "more of"/"less of" the attribute and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.

Classify objects and count the number of objects in each category.

3. Classify objects into given categories, count the number of objects in each category, and sort the categories by count.

Content Progression for Second Grade

Measure and estimate lengths in standard units.

1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
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.
3. Estimate lengths using units of inches, feet, centimeters, and meters.
4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Relate addition and subtraction to length.

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. 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. ***Work with time and money.*** 7. Tell and write time from analog and digital clocks to the nearest five minutes using a.m. and p.m. 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? ***Represent and interpret data.*** 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. 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. **<u>Standards of Mathematical Practice</u>** ***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 • length	**Academic Vocabulary**
Formative Assessments • See Stepping Stones	**Summative Assessments** • See Stepping Stones

Resources • 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** • See Stepping Stones
Integrations • See Stepping Stones	**Intervention Strategies** • Stepping Stones

Grade One Mathematics

Domain ***Measurement and Data***

Cluster ***Tell and write time.***

Pacing

Quarter 1: Modules 1-3
Quarter 2: Modules 4-6
Quarter 3: Modules 7-9
Quarter 4: Modules 10-12

Standards

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

Learning Targets:

- I can identify an analog and digital clock.
- I can identify the hours and minutes on a digital and analog clock.
- I can tell how many minutes are in an hour.
- I can explain why 30 minutes is a half-hour.
- I can read the time on an analog clock and write the time in digital form.
- I can read the time on a digital clock and draw the hands on an analog clock.
- I can write the time and draw the hands to show a stated time.

Content Elaborations

Key Advances From Kindergarten

Describe and compare measurable attributes.

1. Describe measurable attributes of objects such as length or weight. Describe several measurable attributes of a single object.
2. Directly compare two objects with a measurable attribute in common to see which object has "more of"/"less of" the attribute and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.

Classify objects and count the number of objects in each category.

3. Classify objects into given categories, count the number of objects in each category, and sort the categories by count.

Content Progression for Second Grade

Measure and estimate lengths in standard units.

1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
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.
3. Estimate lengths using units of inches, feet, centimeters, and meters.
4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Relate addition and subtraction to length.

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. 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. ***Work with time and money.*** 7. Tell and write time from analog and digital clocks to the nearest five minutes using a.m. and p.m. 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? ***Represent and interpret data.*** 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. 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. **<u>Standards of Mathematical Practice</u>** ***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 • hour • half-hour	**Academic Vocabulary**

Formative Assessments • See Stepping Stones	**Summative Assessments** • See Stepping Stones
Resources • 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** • See Stepping Stones
Integrations • See Stepping Stones	**Intervention Strategies** • Stepping Stones

Grade One Mathematics

Domain ***Measurement and Data***

Cluster ***Represent and interpret data***

Pacing

Quarter 1: Modules 1-3
Quarter 2: Modules 4-6
Quarter 3: Modules 7-9
Quarter 4: Modules 10-12

Standards

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.

Learning Targets:

- I can organize data in up to three categories.
- I can represent data in up to three categories.
- I can answer questions about the total number of data points that are in each category.
- I can tell which category has more or less.
- I can tell how many more are in one category than another.

Content Elaborations

Key Advances From Kindergarten

Describe and compare measurable attributes.

1. Describe measurable attributes of objects such as length or weight. Describe several measurable attributes of a single object.
2. Directly compare two objects with a measurable attribute in common to see which object has "more of"/"less of" the attribute and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.

Classify objects and count the number of objects in each category.

3. Classify objects into given categories, count the number of objects in each category, and sort the categories by count.

Content Progression for Second Grade

Measure and estimate lengths in standard units.

1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
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.
3. Estimate lengths using units of inches, feet, centimeters, and meters.
4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Relate addition and subtraction to length.

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. 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. ***Work with time and money.*** 7. Tell and write time from analog and digital clocks to the nearest five minutes using a.m. and p.m. 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? ***Represent and interpret data.*** 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. 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. **<u>Standards of Mathematical Practice</u>** ***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 • data points	**Academic Vocabulary**
Formative Assessments • See Stepping Stones	**Summative Assessments** • See Stepping Stones

Resources • 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** • See Stepping Stones
Integrations • See Stepping Stones	**Intervention Strategies** • Stepping Stones

Grade One Mathematics

Domain ***Numbers and Operations in Base Ten***

Cluster ***Extend the counting sequence***

Pacing

Quarter 1: Modules 1-3
Quarter 2: Modules 4-6
Quarter 3: Modules 7-9
Quarter 4: Modules 10-12

Standards

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.***

   Learning Targets:
   - I can count to 120.
   - I can count to 120 starting from any number.
   - I can read any number up to 120.
   - I can write any number up to 120.
   - I can label a set of objects up to 120.

Content Elaborations

Key Advances From Kindergarten

Work with numbers 11-19 to gain foundations for place value.

1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones; e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Content Progression for Second Grade

Understand place value.

1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equal 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:
   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).
2. Count within 1000; skip-count by 5s, 10s, and 100s.
3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
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.

	Use place value understanding and properties of operations to add and subtract. 5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. 6. Add up to four two-digit numbers using strategies based on place value and properties of operations. 7. Add and subtract within 1000 using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding 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. 8. Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900. 9. Explain why addition and subtraction strategies work using place value and the properties of operations. **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 No applicable vocabulary	**Academic Vocabulary**
Formative Assessments • See Stepping Stones	**Summative Assessments** • See Stepping Stones

Resources • 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** • See Stepping Stones
Integrations • See Stepping Stones	**Intervention Strategies** • Stepping Stones

Grade One Mathematics

Domain ***Numbers and Operations in Base Ten***

Cluster ***Understanding place value***

Pacing

Quarter 1: Modules 1-3
Quarter 2: Modules 4-6
Quarter 3: Modules 7-9
Quarter 4: Modules 10-12

Standards

2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:

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

Learning Targets:

- I can show 10 as ten ones.
- I can show the numbers 11-19 as ten and some ones.
- I can show multiple sets of ten using number names (two tens is twenty).
- I can tell the value of each digit in a 2-digit number.

3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

Learning Targets:

- I can determine when a 2-digit number is greater than, less than, or equal to another 2-digit number.
- I can tell why a 2-digit number is greater than, less than, or equal to another 2-digit number.
- I can write the symbols >, <, = to compare 2-digit numbers.

Content Elaborations

Key Advances From Kindergarten

Work with numbers 11-19 to gain foundations for place value.

1. Compose and decompose numbers from 11-19 into ten ones and some further ones; e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

Content Progression for Second Grade

Understand place value.

1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equal 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:
   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).
2. Count within 1000; skip-count by 5s, 10s, and 100s.
3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
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.

	Use place value understanding and properties of operations to add and subtract. 5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. 6. Add up to four two-digit numbers using strategies based on place value and properties of operations. 7. Add and subtract within 1000 using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding 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. 8. Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900. 9. Explain why addition and subtraction strategies work using place value and the properties of operations. **<u>Standards of Mathematical Practice</u>** ***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 • greater than • less than • equal to • < • > • =	**Academic Vocabulary**

Formative Assessments • See Stepping Stones	**Summative Assessments** • See Stepping Stones
Resources • 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** • See Stepping Stones
Integrations • See Stepping Stones	**Intervention Strategies** • Stepping Stones

Grade One Mathematics

Domain ***Numbers and Operations in Base Ten***	
Cluster ***Use place value understanding and properties of operations to add and subtract***	**Pacing** **Quarter 1:** Modules 1-3 **Quarter 2:** Modules 4-6 **Quarter 3:** Modules 7-9 **Quarter 4:** Modules 10-12
Standards ***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.*** **Learning Targets:** • I can use models or drawings to show my thinking (strategy) based on place value to add a two-digit number and a one-digit number, a two-digit number and a multiple of ten, and a two-digit number and a two-digit number. • I can write and explain the steps I used to show how I added. • I can show multiple sets of ten using number names (two tens is twenty). • I can tell the value of each digit in a 2-digit number. ***5. Given a two-digit number, mentally find 10 more or 10 less than the number without having to count; explain the reasoning used.*** **Learning Targets:** • I can use mental math to find the number that is ten more than any two-digit number. • I can use mental math to find the number that is ten less than any two-digit number.	**Content Elaborations** **Key Advances From Kindergarten** ***Work with numbers 11-19 to gain foundations for place value.*** 1. Compose and decompose numbers from 11-19 into ten ones and some further ones; e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. **Content Progression for Second Grade** ***Understand place value.*** 1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equal 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: 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). 2. Count within 1000; skip-count by 5s, 10s, and 100s. 3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. 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.

• I can tell why the tens digit increases or decreases by one when ten is added or subtracted. 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.*** **Learning Targets:** • I can subtract a multiple of ten from a multiple of ten (90-40). • I can explain my strategy for subtracting a multiple of ten from a multiple of ten. • I can explain how subtracting by a multiple of ten is related to subtracting the tens digits (90-40 is related to 9-4).	***Use place value understanding and properties of operations to add and subtract.*** 5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. 6. Add up to four two-digit numbers using strategies based on place value and properties of operations. 7. Add and subtract within 1000 using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding 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. 8. Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900. 9. Explain why addition and subtraction strategies work using place value and the properties of operations. **<u>Standards of Mathematical Practice</u>** ***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 • subtract • multiple of ten (a two-digit number that ends in 0)	**Academic Vocabulary**
Formative Assessments • See Stepping Stones	**Summative Assessments** • See Stepping Stones

Resources • 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** • See Stepping Stones
Integrations • See Stepping Stones	**Intervention Strategies** • Stepping Stones

Grade One Mathematics

Domain ***Operations and Algebraic Thinking***

Cluster ***Represent and solve problems involving addition and subtraction***

Pacing

Quarter 1: Modules 1-3
Quarter 2: Modules 4-6
Quarter 3: Modules 7-9
Quarter 4: Modules 10-12

Standards

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.***

   Learning Targets:
   - I can show addition and subtraction number stories using objects, drawings, and equations with unknown numbers in different positions.
   - I can solve addition and subtraction number stories using objects, drawings, and number sentences.
   - I can solve number stories with unknown numbers in different positions (e.g., 6+_=8; _+2=8; 6+2=_).

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.***

   Learning Targets:
   - I can show addition and subtraction number stories using objects, drawings, and equations with unknown numbers in different positions.
   - I can add three numbers whose sum is less than or equal to 20. I can solve number stories with three numbers using objects, drawings, and number sentences.

Content Elaborations

Key Advances From Kindergarten

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

1. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
2. Solve addition and subtraction word problems, and add and subtract within 10; e.g., by using objects or drawings to represent the problem.
3. Decompose numbers less than or equal to 10 into pairs in more than one way; e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).
4. For any number from 1 to 9 find the number that makes 10 when added to the given number; e.g., by using objects or drawings, and record the answer with a drawing or equation.
5. Fluently add and subtract within 5.

Content Progression for Second Grade

Represent and solve problems involving addition and subtraction.

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.

	Add and subtract within 20. 2. Fluently add and subtract within 20 using mental strategies. By end of grade 2 know from memory all sums of two one-digit numbers. ***Work with equal groups of objects to gain foundations for multiplication.*** 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. 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. **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 • addition • sum • equation	**Academic Vocabulary**
Formative Assessments • See Stepping Stones	**Summative Assessments** • See Stepping Stones
Resources • 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** • See Stepping Stones
Integrations • Origo Big Books	**Intervention Strategies** • Stepping Stones

Grade One Mathematics

Domain	***Operations and Algebraic Thinking***
Cluster	***Understand and apply properties of operations and the relationship between addition and subtraction***

Pacing

Quarter 1: Modules 1-3
Quarter 2: Modules 4-6
Quarter 3: Modules 7-9
Quarter 4: Modules 10-12

Standards

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).

Learning Targets:

- I can show that adding zero to any number does not change the number (e.g., 4 + 0 = 4).
- I can show that changing the order of the number in a number sentence does not change the sum.
- I can show that when adding three numbers in any order, the sum does not change.
- I can use the properties of operations to add and subtract.

4. Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.

Learning Targets:

- I can show and explain how a subtraction number sentence can be rewritten as an addition number sentence (e.g., 2 + 8 = 10; 10 – 8 = 2; 10 – 2 = 8).
- I can rewrite a subtraction number sentence as an addition number sentence with a missing addend (e.g., 10 – 2 = 8; 2 + _ = 10).

Content Elaborations

Key Advances From Kindergarten

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

1. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
2. Solve addition and subtraction word problems, and add and subtract within 10; e.g., by using objects or drawings to represent the problem.
3. Decompose numbers less than or equal to 10 into pairs in more than one way; e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).
4. For any number from 1 to 9 find the number that makes 10 when added to the given number; e.g., by using objects or drawings, and record the answer with a drawing or equation.
5. Fluently add and subtract within 5.

Content Progression for Second Grade

Represent and solve problems involving addition and subtraction.

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.

	Add and subtract within 20. 2. Fluently add and subtract within 20 using mental strategies. By end of grade 2 know from memory all sums of two one-digit numbers. ***Work with equal groups of objects to gain foundations for multiplication.*** 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. 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. **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 • addition • add • subtraction • subtract • cumulative property of addition • associative property of addition	**Academic Vocabulary**
Formative Assessments • See Stepping Stones	**Summative Assessments** • See Stepping Stones
Resources • Origo Big Books • Ohio Department of Education Model Curriculum • K-8 Standards Progression	**Enrichment Strategies** • See Stepping Stones

• Partnership for the Assessment for Readiness of College and Career www.parcconline.org	
Integrations • See Stepping Stones	**Intervention Strategies** • Stepping Stones

Grade One Mathematics

Domain ***Operations and Algebraic Thinking***

Cluster ***Add and subtract within 20***

Pacing

Quarter 1: Modules 1-3
Quarter 2: Modules 4-6
Quarter 3: Modules 7-9
Quarter 4: Modules 10-12

Standards

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

   Learning Targets:
   - I can add by counting all, counting on, and recognizing that +1 means the next number and +2 means two more.
   - I can subtract by counting back, counting up from (e.g., 10–2 can be determined by counting "hops" up from 2 on the number line) and recognizing that –1 means the number before, and that –2 means the number that is two less.

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 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).***

   Learning Targets:
   - I can fluently add and subtract up to ten.
   - I can add and subtract up to twenty by counting on and making a ten.
   - I can add and subtract up to twenty by using the relationship between addition and subtraction.
   - I can add and subtract up to twenty by using equal but easier numbers (e.g., doubles, doubles plus one, doubles minus one).

Content Elaborations

Key Advances From Kindergarten

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

1. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
2. Solve addition and subtraction word problems, and add and subtract within 10; e.g., by using objects or drawings to represent the problem.
3. Decompose numbers less than or equal to 10 into pairs in more than one way; e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).
4. For any number from 1 to 9 find the number that makes 10 when added to the given number; e.g., by using objects or drawings, and record the answer with a drawing or equation.
5. Fluently add and subtract within 5.

Content Progression for Second Grade

Represent and solve problems involving addition and subtraction.

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.

	Add and subtract within 20. 2. Fluently add and subtract within 20 using mental strategies. By end of grade 2 know from memory all sums of two one-digit numbers. ***Work with equal groups of objects to gain foundations for multiplication.*** 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. 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. **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 • addition • subtraction • count on • count back • make ten	**Academic Vocabulary**
Formative Assessments • See Stepping Stones	**Summative Assessments** • See Stepping Stones
Resources • 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** • See Stepping Stones
Integrations	**Intervention Strategies** • Stepping Stones

Grade One Mathematics

Domain ***Operations and Algebraic Thinking***

Cluster ***Work with addition and subtraction equations***

Pacing

Quarter 1: Modules 1-3
Quarter 2: Modules 4-6
Quarter 3: Modules 7-9
Quarter 4: Modules 10-12

Standards

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.

Learning Targets:

- I can explain that the equal sign means "same as."
- I can compare the value of both sides of a number sentence and determine whether the number sentence is true or false.

8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the following equations: 8 + ? = 11; 5 = ☐ - 3; 6 + 6 = ☐.

Learning Targets:

- I can determine the unknown value in an addition or subtraction number sentence when two out of three of the numbers in the number sentence are given.

Content Elaborations

Key Advances From Kindergarten

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

1. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
2. Solve addition and subtraction word problems, and add and subtract within 10; e.g., by using objects or drawings to represent the problem.
3. Decompose numbers less than or equal to 10 into pairs in more than one way; e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).
4. For any number from 1 to 9 find the number that makes 10 when added to the given number; e.g., by using objects or drawings, and record the answer with a drawing or equation.
5. Fluently add and subtract within 5.

Content Progression for Second Grade

Represent and solve problems involving addition and subtraction.

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.

	Add and subtract within 20. 2. Fluently add and subtract within 20 using mental strategies. By end of grade 2 know from memory all sums of two one-digit numbers. ***Work with equal groups of objects to gain foundations for multiplication.*** 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. 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. **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 • equal sign • equation • true equation • false equation • addition • subtraction • number sentence	**Academic Vocabulary**
Formative Assessments • See Stepping Stones	**Summative Assessments** • See Stepping Stones
Resources • Ohio Department of Education Model Curriculum • K-8 Standards Progression	**Enrichment Strategies** • See Stepping Stones

• Partnership for the Assessment for Readiness of College and Career www.parcconline.org	
Integrations	**Intervention Strategies** • Stepping Stones

Grade One Mathematics

Domain *Geometry*

Cluster *Reason with shapes and their attributes*

Pacing

Quarter 1: Modules 1-3
Quarter 2: Modules 4-6
Quarter 3: Modules 7-9
Quarter 4: Modules 10-12

Standards

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 draws shapes to possess defining attributes.***

   Learning Targets:
   - I can describe the attributes of a shape.
   - I can construct and draw a shape when given its 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.***

   Learning Targets:
   - I can identify two- and three-dimensional shapes.
   - I can create two- and three-dimensional shapes.

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.***

   Learning Targets:
   - I can divide a circle and a rectangle into two and four equal parts.
   - I can describe the equal parts of a circle and rectangle with words (halves, fourths, and quarters).

Content Elaborations

Key Advances From Kindergarten

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

1. Describe objects in the environment using names of shapes and the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
2. Correctly name shapes regardless of their orientations or overall size.
3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). Analyze, compare, create, and compose shapes.
4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).
5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
6. Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"

Content Progression for Second Grade

Reason with shapes and their attributes.

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.

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- I can describe the whole by the number of equal parts (two halves make a whole).
- I can explain the more equal parts a shape has, the smaller the parts (1/8 is smaller than 1/2).

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

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.

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Content Vocabulary

- attributes
- sides
- angles
- faces
- fourths
- quarters
- half
- halves
- half of
- fourth of
- quarter of
- whole

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Academic Vocabulary

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Formative Assessments

- See Stepping Stones

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Summative Assessments

- See Stepping Stones

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