

Grade 2

[C] Communication	[PS] Problem Solving
[CN] Connections	[R] Reasoning
[ME] Mental Mathematics and Estimation	[T] Technology
	[V] Visualization

Strand:
Number

General Outcome:
Develop number sense.

Specific Outcomes

It is expected that students will:

Achievement Indicators

*The following set of indicators **may** be used to determine whether students have met the corresponding specific outcome.*

- 2.N.1. Say the number sequence from 0 to 100 by
- 2s, 5s, and 10s, forward and backward, using starting points that are multiples of 2, 5, and 10 respectively
 - 10s using starting points from 1 to 9
 - 2s starting from 1
- [C, CN, ME, R]

- Extend a skip-counting sequence by 2s, 5s, or 10s forward and backward.
- Skip-count by 10s, given any number from 1 to 9 as a starting point.
- Count by 2s starting from 1 or from any odd number.
- Identify and correct errors and omissions in a skip-counting sequence.
- Count a sum of money with pennies, nickels, or dimes (to 100¢).
- Count quantity using groups of 2s, 5s, or 10s and counting on.

- 2.N.2. Demonstrate if a number (up to 100) is even or odd.
- [C, CN, PS, R]

- Determine if a number is even or odd by using concrete materials or pictorial representations.
- Identify even and odd numbers in a sequence, such as in a hundred chart.
- Sort a set of numbers into even and odd.

- 2.N.3. Describe order or relative position using ordinal numbers.
- [C, CN, R]

- Indicate the position of an object in a sequence by using ordinal numbers.
- Compare the relative position of an object in two different sequences.

- 2.N.4. Represent and describe numbers to 100, concretely, pictorially, and symbolically.
- [C, CN, V]

- Represent a number using concrete materials, such as ten frames and base-10 materials.
- Represent a number using coins (pennies, nickels, dimes, and quarters).
- Represent a number using tallies.
- Represent a number pictorially.
- Represent a number using expressions (e.g., $24 + 6$, $15 + 15$, $40 - 10$).
- Read a number (0–100) in symbolic or word form.
- Record a number (0–20) in words.
- Determine compatible number pairs for 20 or 50.

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Strand:
Number (*continued*)

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Develop number sense.

Specific Outcomes

It is expected that students will:

Achievement Indicators

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2.N.5. Compare and order numbers up to 100.
[C, CN, R, V]

- Order a set of numbers in ascending or descending order, and verify the result using a hundred chart, number line, ten frames, or by making reference to place value.
- Identify errors in an ordered sequence.
- Identify missing numbers in a hundred chart.
- Identify errors in a hundred chart.

2.N.6. Estimate quantities to 100 using referents.
[C, ME, PS, R]

- Estimate a quantity by comparing it to a referent (known quantity).
- Estimate the number of groups of 10 in a quantity using 10 as a referent.
- Select between two possible estimates for a quantity, and explain the choice.

2.N.7. Illustrate, concretely and pictorially, the meaning of place value for numbers to 100.
[C, CN, R, V]

- Explain and show with counters the meaning of each digit for a 2-digit numeral with both digits the same (e.g., for the numeral 22, the first digit represents two tens [twenty counters] and the second digit represents two ones [two counters]).
- Count the number of objects in a set using groups of 10s and 1s, and record the result as a 2-digit numeral under the headings of 10s and 1s.
- Describe a 2-digit numeral in at least two ways (e.g., 24 as two tens and four ones, twenty and four, two groups of ten and four left over, and twenty-four ones).
- Illustrate using 10 frames and diagrams that a numeral consists of a certain number of groups of 10 and a certain number of 1s.
- Illustrate using proportional base-10 materials that a numeral consists of a certain number of tens and a certain number of ones.
- Explain why the value of a digit depends on its placement within a numeral.

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Strand:
Number (*continued*)

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Develop number sense.

Specific Outcomes

It is expected that students will:

Achievement Indicators

*The following set of indicators **may** be used to determine whether students have met the corresponding specific outcome.*

2.N.8. Demonstrate and explain the effect of adding zero to or subtracting zero from any number.
[C, R]

- Add zero to a number and explain why the sum is the same as the addend.
- Subtract zero from a number and explain why the difference is the same as the number.

2.N.9. Demonstrate an understanding of addition (limited to 1- and 2-digit numerals) with answers to 100 and the corresponding subtraction by

- using personal strategies for adding and subtracting with and without the support of manipulatives
- creating and solving problems that involve addition and subtraction
- explaining that the order in which numbers are added does not affect the sum
- explaining that the order in which numbers are subtracted may affect the difference

[C, CN, ME, PS, R, V]

- Model addition and subtraction using concrete materials or visual representations, and record the process symbolically.
- Create an addition or a subtraction number sentence and a story problem for a solution.
- Solve a problem involving a missing addend, and describe the strategy used.
- Solve a problem involving a missing minuend or subtrahend, and describe the strategy used.
- Match a number sentence to a missing addend problem.
- Match a number sentence to a missing subtrahend or minuend problem.
- Add a set of numbers in two different ways, and explain that the sum is the same (e.g., $2 + 5 + 3 + 8 = 2 + 3 + 5 + 8$ or $5 + 3 + 8 + 2$).

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Strand:
Number (*continued*)

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Develop number sense.

Specific Outcomes

It is expected that students will:

Achievement Indicators

*The following set of indicators **may** be used to determine whether students have met the corresponding specific outcome.*

2.N.10. Apply mental mathematics strategies, including

- using doubles
- making 10
- using one more, one less
- using two more, two less
- building on a known double
- using addition for subtraction

to develop recall of basic addition facts to 18 and related subtraction facts.

[C, CN, ME, R, V]

- Explain the mental mathematics strategy that could be used to determine an addition or subtraction fact, such as
 - using doubles (e.g., for $4 + 6$, think $5 + 5$)
 - using doubles plus one (e.g., for $4 + 5$, think $4 + 4 + 1$)
 - using doubles take away one (e.g., for $4 + 5$, think $5 + 5 - 1$)
 - using doubles plus two (e.g., for $4 + 6$, think $4 + 4 + 2$)
 - using doubles take away two (e.g., for $4 + 6$, think $6 + 6 - 2$)
 - making 10 (e.g., for $7 + 5$, think $7 + 3 + 2$)
 - building on a known double (e.g., $6 + 6 = 12$, so $6 + 7 = 12 + 1 = 13$)
 - using addition for subtraction (e.g., for $7 - 3$, think $3 + ? = 7$)
- Use and describe a personal strategy for determining a sum to 18 and the corresponding subtraction.

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Strand:
Patterns and Relations (Patterns)

General Outcome:
Use patterns to describe the world and solve problems.

Specific Outcomes

It is expected that students will:

Achievement Indicators

*The following set of indicators **may** be used to determine whether students have met the corresponding specific outcome.*

2.PR.1. Predict an element in a repeating pattern using a variety of strategies.

[C, CN, PS, R, V]

- Identify the core of a repeating pattern.
- Describe and extend a pattern with two attributes.
- Explain the rule used to create a repeating non-numerical pattern.
- Predict an element in a repeating pattern using a variety of strategies.
- Predict an element of a repeating pattern, and extend the pattern to verify the prediction.

2.PR.2. Demonstrate an understanding of increasing patterns by

- describing
- reproducing
- extending
- creating

patterns using manipulatives, diagrams, sounds, and actions (numbers to 100).

[C, CN, PS, R, V]

- Identify and describe increasing patterns in a variety of contexts (e.g., hundred chart, number line, addition tables, calendar, a tiling pattern, or drawings).
- Represent an increasing pattern concretely and pictorially.
- Identify errors in an increasing pattern.
- Explain the rule used to create an increasing pattern.
- Create an increasing pattern and explain the pattern rule.
- Represent an increasing pattern using another mode (e.g., colour to shape).
- Solve a problem using increasing patterns.
- Identify and describe increasing patterns in the environment (e.g., house/room numbers, flower petals, book pages, calendar, pine cones, leap years).
- Determine missing elements in a concrete, pictorial, or symbolic increasing pattern, and explain the reasoning.

[C] Communication	[PS] Problem Solving
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[ME] Mental Mathematics and Estimation	[T] Technology
	[V] Visualization

Strand: Patterns and Relations (Variables and Equations)	General Outcome: Represent algebraic expressions in multiple ways.
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Specific Outcomes
It is expected that students will:

Achievement Indicators
*The following set of indicators **may** be used to determine whether students have met the corresponding specific outcome.*

<p>2.PR.3. Demonstrate and explain the meaning of equality and inequality by using manipulatives and diagrams (0 to 100). [C, CN, R, V]</p>	<ul style="list-style-type: none"> ■ Determine whether two quantities of the same object (same shape and mass) are equal by using a balance scale. ■ Construct and draw two unequal sets using the same object (same shape and mass), and explain the reasoning. ■ Demonstrate how to change two sets, equal in number, to create inequality. ■ Choose from three or more sets the one that does not have a quantity equal to the others, and explain why.
<p>2.PR.4. Record equalities and inequalities symbolically using the equal symbol or the not-equal symbol. [C, CN, R, V]</p>	<ul style="list-style-type: none"> ■ Determine whether two sides of a number sentence are equal (=) or not equal (≠). Write the appropriate symbol and justify the answer. ■ Model equalities using a variety of concrete representations, and record. ■ Model inequalities using a variety of concrete representations, and record symbolically.

Grade 2

[C] Communication	[PS] Problem Solving
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Strand: Shape and Space (Measurement)	General Outcome: Use direct or indirect measurement to solve problems.
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Specific Outcomes <i>It is expected that students will:</i>	Achievement Indicators <i>The following set of indicators may be used to determine whether students have met the corresponding specific outcome.</i>
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<p>2.SS.1. Relate the number of days to a week and the number of months to a year in a problem-solving context. [C, CN, PS, R]</p>	<ul style="list-style-type: none"> ■ Read a date on a calendar. ■ Name and order the days of the week. ■ Identify the day of the week and the month of the year for an identified calendar date. ■ State that there are seven days in a week and twelve months in a year. ■ Determine whether a set of days is more or less than a week. ■ Identify yesterday's/tomorrow's date. ■ Identify the month that comes before and the month that comes after a given month. ■ Name and order the months of the year. ■ Solve a problem involving time that is limited to the number of days in a week and the number of months in a year.
<p>2.SS.2. Relate the size of a unit of measure to the number of units (limited to non-standard units) used to measure length and mass (weight). [C, CN, ME, R, V]</p>	<ul style="list-style-type: none"> ■ Explain why one of two non-standard units may be a better choice for measuring the length of an object. ■ Explain why one of two non-standard units may be a better choice for measuring the mass of an object. ■ Select a non-standard unit for measuring the length or mass of an object, and explain why it was chosen. ■ Estimate the number of non-standard units needed for a measurement task. ■ Explain why the number of units of a measurement will vary depending upon the unit of measure used.
<p>2.SS.3. Compare and order objects by length, height, distance around, and mass (weight) using non-standard units, and make statements of comparison. [C, CN, ME, R, V]</p>	<ul style="list-style-type: none"> ■ Estimate, measure, and record the length, height, distance around, or mass (weight) of an object using non-standard units. ■ Compare and order the measure of two or more objects in ascending or descending order, and explain the method of ordering.

[C]	Communication	[PS]	Problem Solving
[CN]	Connections	[R]	Reasoning
[ME]	Mental Mathematics and Estimation	[T]	Technology
		[V]	Visualization

Strand:
Shape and Space (Measurement) *(continued)*

General Outcome:
Use direct or indirect measurement to solve problems.

Specific Outcomes

It is expected that students will:

Achievement Indicators

*The following set of indicators **may** be used to determine whether students have met the corresponding specific outcome.*

- 2.SS.4. Measure length to the nearest non-standard unit by
- using multiple copies of a unit
 - using a single copy of a unit (iteration process)
- [C, ME, R, V]

- Explain why overlapping or leaving gaps does not result in accurate measures.
- Count the number of non-standard units required to measure the length of an object using a single copy or multiple copies of the same unit of measure.
- Estimate and measure an object using multiple copies of a non-standard unit and using a single copy of the same unit many times, and explain the results.
- Estimate and measure, using non-standard units, a length that is not a straight line.
- Create different rulers, using non-standard units of measure, and use these rulers to measure length.

- 2.SS.5. Demonstrate that changing the orientation of an object does not alter the measurements of its attributes.
- [C, R, V]

- Measure an object, change the orientation, re-measure, and explain the results.

Grade 2

[C] Communication	[PS] Problem Solving
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Strand: Shape and Space (3-D Objects and 2-D Shapes)	General Outcome: Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.
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Specific Outcomes <i>It is expected that students will:</i>	Achievement Indicators <i>The following set of indicators may be used to determine whether students have met the corresponding specific outcome.</i>
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2.SS.6. Sort 2-D shapes and 3-D objects using two attributes, and explain the sorting rule. [C, CN, R, V]	<ul style="list-style-type: none">■ Determine the differences between two pre-sorted sets, and explain the sorting rule.■ Identify and name two common attributes of items within a sorted group.■ Sort a set of 2-D shapes (regular and irregular) according to two attributes, and explain the sorting rule.■ Sort a set of 3-D objects according to two attributes, and explain the sorting rule.
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2.SS.7. Describe, compare, and construct 3-D objects, including <ul style="list-style-type: none">■ cubes■ spheres■ cones■ cylinders■ prisms■ pyramids [C, CN, R, V]	<ul style="list-style-type: none">■ Sort a set of 3-D objects, and explain the sorting rule.■ Identify common attributes of cubes, spheres, cones, cylinders, prisms, or pyramids from sets of the same 3-D objects.■ Identify and describe 3-D objects with different dimensions.■ Identify and describe 3-D objects with different orientations.■ Create and describe a representation of a 3-D object using materials such as modelling clay.■ Identify examples of cubes, spheres, cones, cylinders, prisms, or pyramids found in the environment.
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	[V] Visualization

Strand:

Shape and Space
(3-D Objects and 2-D Shapes) *(continued)*

General Outcome:

Describe the characteristics of 3-D objects and 2-D shapes,
and analyze the relationships among them.

Specific Outcomes

It is expected that students will:

Achievement Indicators

*The following set of indicators **may** be used to determine whether students
have met the corresponding specific outcome.*

2.SS.8. Describe, compare, and construct 2-D shapes, including

- triangles
- squares
- rectangles
- circles

[C, CN, R, V]

- Sort a set of 2-D shapes, and explain the sorting rule.
- Identify common attributes of triangles, squares, rectangles, or circles from sets of the same type of 2-D shapes.
- Identify 2-D shapes with different dimensions.
- Identify 2-D shapes with different orientations.
- Create a model to represent a 2-D shape.
- Create a pictorial representation of a 2-D shape.

2.SS.9. Identify 2-D shapes as parts of 3-D objects in the environment.

[C, CN, R, V]

- Compare and match a 2-D shape, such as a triangle, square, rectangle, or circle, to the faces of 3-D objects in the environment.
- Name the 2-D faces of a 3-D object.

[C] Communication	[PS] Problem Solving
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Strand: Statistics and Probability (Data Analysis)	General Outcome: Collect, display, and analyze data to solve problems.
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Specific Outcomes <i>It is expected that students will:</i>	Achievement Indicators <i>The following set of indicators may be used to determine whether students have met the corresponding specific outcome.</i>
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<p>2.SP.1. Gather and record data about self and others to answer questions. [C, CN, PS, V]</p>	<ul style="list-style-type: none"> ■ Formulate a question that can be answered by gathering information about self and others. ■ Organize data as it is collected using concrete objects, tallies, checkmarks, charts, or lists. ■ Answer questions using collected data.
<p>2.SP.2. Construct and interpret concrete graphs and pictographs to solve problems. [C, CN, PS, R, V]</p>	<ul style="list-style-type: none"> ■ Determine the common attributes of concrete graphs by comparing a set of concrete graphs. ■ Determine the common attributes of pictographs by comparing a set of pictographs. ■ Answer questions pertaining to a concrete graph or pictograph. ■ Create a concrete graph to display a set of data and draw conclusions. ■ Create a pictograph to represent a set of data using one-to-one correspondence. ■ Solve a problem by constructing and interpreting a concrete graph or pictograph.