

**MATHEMATICAL IDEAS & CONCEPTS:**

- Continue to represent and solve problems involving addition and subtraction
- Understand and apply properties of operations and the relationship between addition and subtraction *new this quarter*
- Continue to add and subtract within 20
- Use place value understanding and properties of operation to add and subtract *new this quarter*
- Continue to represent and interpret data
- Continue to reason with shapes and their attributes
- Continue to work with money

ESSENTIAL QUESTIONS:

1. *What strategies can I use when solving addition/subtraction problems?*
2. *What do the digits in a number represent?*
3. *How can I interpret the information found in charts and graphs?*
4. *How can defining attributes help me create shapes?*

STANDARDS:

Aligned to Essential Questions; Big Idea/Concept Standard (★) with supporting standards (→) connected below

Notes in gray font are from the AR Mathematics standards; RPS instructional pacing notes are in red font

EQ 1: What strategies can I use when solving addition/subtraction problems?

- ★ **1.OA.A.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)
 - **1.OA.A.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)
 - **1.OA.B.3** Apply properties of operations as strategies to add and subtract. *For example:* 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*) *new this quarter* *Note: 1.OA.B.3 Students need not use formal terms for these properties.*
 - **1.OA.C.5** Relate counting to addition and subtraction (e.g., by *counting on* 2 to add 2)
- ★ **1.OA.D.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? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, or $4 + 1 = 5 + 2$.
 - **1.OA.D.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 *equations* $8 + ? = 11$ $5 = _ - 3$ and $6 + 6 = _$ *new this quarter*

Standards associated with this essential standard continue on next page...



EQ 1: What strategies can I use when solving addition/subtraction problems? continued...

- ★ **1.OA.C.6** Add and subtract within 20, demonstrating *computational fluency* for addition and subtraction within 10

Note: 1.OA.C.6 Computational fluency is demonstrating the method of student choice. Students should understand the strategy he/she selected and be able to explain how it can efficiently produce accurate answers. Q2 Focus: Students extend work within 10 to work within 20 by making ten and decomposing a number leading to a ten

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 $8 + 4 = 12$, one knows $12 - 8 = 4$)
- Creating equivalent but easier or known *sums* (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$)

→ **1.OA.C.5** Relate counting to addition and subtraction (e.g., by *counting on* 2 to add 2)

→ **1.OA.B.3** Apply properties of operations as strategies to add and subtract. *For example: 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) new this quarter* *Note: 1.OA.B.3 Students need not use formal terms for these properties.*

EQ 2: What do the digits in a number represent?

- ★ **1.NBT.B.2** Understand that the two digits of a two-digit number represent amounts of tens and ones *new this quarter*

Understand the following as special cases:

- 10 can be thought of as a bundle of ten ones — called a "ten"
- The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones
- 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

→ **1.MD.B.5** Count collections of **like** coins (pennies, nickels, and dimes) *new this quarter; Only includes collections of LIKE coins - make connections to base ten/place value work - use as manipulatives for base ten work (pennies-ones; dimes-tens)*

- ★ **1.NBT.C.4** Add within 100 using concrete models or drawings, relate the strategy used to a written expression or equation, and be able to explain the reasoning *new this quarter; Q2 Expectation: Use concrete models or drawings when adding within 100*

Note: 1.NBT.C.4 Strategies should be based on place-value, properties of operations, and the relationship between addition and subtraction.

→ **1.OA.B.3** Apply properties of operations as strategies to add and subtract. *For example: 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) new this quarter*

Note: 1.OA.B.3 Students need not use formal terms for these properties.

- ★ **1.NBT.C.6** Subtract multiples of 10 from multiples of 10 (both in the range of 10-90) using concrete models or drawings, relate the strategy to a written method, and explain the reasoning used *new this quarter; Q2 Expectation: Subtract using concrete models or drawings when working with multiples of 10*

Note: 1.NBT.C.6 Strategies should be based on place value, properties of operations, and the relationship between addition and subtraction. Differences should be zero or positive. This is the only NBT standard that refers to subtraction.



EQ 3: How can I interpret the information found in charts and graphs?

- ★ **1.MD.C.6** *Q2 focus: interpret data/information found in charts and graphs. This standard directly connects to the year-long data collection for Science 1-ESS1-2 in making observations about the amount of daylight hours (recording sunrise/sunset and hours of daylight each day).*
- Organize, represent, and interpret data with up to three categories, using tally tables, picture graphs and bar graphs
 - Ask and answer questions about the total number represented, how many in each category, and how many more or less are in one category than in another *Q2 focus: interpreting data*
- **1.OA.A.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)

EQ 4: How can defining attributes help me create shapes?

- ★ **1.G.A.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*. *Q2 focus: building and drawing shapes with specified attributes*
- **1.G.A.2** Compose two-dimensional shapes (e.g., rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (e.g., cubes, right *rectangular prisms*, right circular cones, and right circular cylinders) to create a composite shape *new this quarter*
- Note: 1.G.A.2 Students do not need to learn formal names such as “right rectangular prism”.*
- Q2 focus: compose two-dimensional shapes. Work with 3-D shapes not formally assessed until third quarter.*
- **1.MD.A.1** Order three objects by length; compare the lengths of two objects indirectly by using a third object *new this quarter; length is a defining attribute*

Additional Standards:

- **1.NBT.A.1** *Students need to be able to count forwards beyond 120 (in order to understand crossing decade numbers) and backwards from 120.*
- 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.