MATHEMATICAL IDEAS & CONCEPTS:

- Continue to represent and solve problems involving addition and subtraction
- Continue to understand and apply properties of operations and the relationship between addition and subtraction
- Continue to add and subtract within 20; demonstrating computational fluency within 10
- Continue to use place value understanding and properties of operation to add and subtract
- Continue to measure lengths indirectly and by iterating length units
- Continue to represent and interpret data
- Continue to reason with shapes and their attributes

ESSENTIAL QUESTIONS:

1. *Why do I need a variety of strategies for problem solving?*
1. *Why does my addition or subtraction strategy work?*
2. *What are the important things to remember when I measure?*
3. *How does a part (share) relate to its whole?*

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: Why do I need a variety of strategies for problem solving?

★ **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.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*) *Note: 1.OA.B.3 Students need not use formal terms for these properties.*
- ➔ **1.OA.B.4** Understand subtraction as an unknown-addend problem. *For example:* Subtract 10 - 8 by finding the number that makes 10 when added to 8

★ **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. Q4 Expectation: Students demonstrate computational fluency within 10; use a variety of strategies to work within 20.

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)
- 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.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*) *Note: 1.OA.B.3 Students need not use formal terms for these properties.*
- ➔ **1.OA.B.4** Understand subtraction as an unknown-addend problem. *For example:* Subtract 10 - 8 by finding the number that makes 10 when added to 8

EQ 1: Why do I need a variety of strategies for problem solving? continued…

★ **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 = __

EQ 2: Why does my addition or subtraction strategy work?

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

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

★ **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 *Q4 Expectation: Students should be able to explain their reasoning*

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

★ **1.NBT.C.5** Mentally find 10 more or 10 less than a given two-digit number, without having to count

Note: 1.NBT.C.5 Students should be able to explain the reasoning used.

★ **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 *Q4 Expectation: Students should be able to explain their reasoning*

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: What are the important things to remember when I measure?

★ **1.MD.A.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

Note: 1.MD.A.2 Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps

EQ 4: How does a part (share) relate to its whole?

★ **1.G.A.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

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.

➔ **1.MD.C.6** *This standard is not an instructional focus in math this quarter, but it directly connects to Science 1-ESS1-2 in making observations about the amount of daylight hours (recording sunrise/sunset and hours of daylight each day) and is still scored on the report card.*

- 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