MATHEMATICAL IDEAS & CONCEPTS:

- Continue to use place value understanding to add/subtract
- Continue to explain why addition/subtraction strategies work
- Demonstrate fluency when adding/subtracting within 20
- Continue to measure and estimate lengths with standard units
- Continue to generate measurement data and use line plots
- Build foundation for fractions by partitioning shapes
- Build foundation for multiplication and/or area

ESSENTIAL QUESTIONS:

1. *How can I be strategic and accurate when adding and subtracting?*
2. *Why is it important to be fluent with my addition/subtraction facts?*
3. *What strategies can I use when solving problems involving larger numbers?*
4. *Why are measurement tools important?*
5. *How can I partition shapes into equal shares?*

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: How can I be strategic and accurate when adding and subtracting?

Numbers within 100

★ **2.OA.A.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
- Represent a strategy with a related equation including a symbol for the unknown number

★ **2.NBT.B.5** Add and subtract within 100 with *computational fluency* using strategies based on *place value*, properties of operations, and the relationship between addition and subtraction *Q4 Expectation: students should be fluent and flexible with strategies and notation for addition/subtraction within 100 both with and without regrouping.*

➔ **2.NBT.B.6** Add up to four two-digit numbers using strategies based on *place value* and properties of operations

★ **2.NBT.B.9** Explain why addition and subtraction strategies work, using *place value* and the properties of operations

Note: 2.NBT.B.9 Explanations could be supported by drawings or objects.

EQ 2: Why is it important to be fluent with my addition/subtraction facts?

★ **2.OA.B.2** *Note: 2.OA.B.2 Fact fluency means that students should have automaticity when recalling these facts.*
- Fluently add and subtract within 20 using mental strategies
- By the end of Grade 2, know from memory all *sums* of two one-digit numbers

EQ 3: What strategies can I use when solving problems involving larger numbers?

Numbers within 1000

★ **2.NBT.B.7** Add and subtract within 1000, using concrete models or drawings and strategies based on *place value*, properties of operations, and the relationship between addition and subtraction; relate the strategy to a written expression or equation. *Students are not expected to have **computational fluency** with addition and subtraction within 1000 until 3rd grade.*

- ➔ **2.NBT.B.8** Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100- 900
- ➔ **2.NBT.A.4** Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols and correct terminology for the symbols to record the results of comparisons
- ➔ **2.NBT.A.1**
  - Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 726 equals 7 hundreds, 2 tens, and 6 ones
  - Understand that 100 can be thought of as a group of ten tens — called a "hundred"
  - Understand that the numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine groups of 100
- ➔ **2.NBT.A.2**
  - Count within 1000
  - Skip-count by 5s, 10s, and 100s beginning at zero
- ➔ **2.NBT.A.3**
  - Read and write numbers to 1000 using base-ten numerals, number names, and a variety of *expanded forms*
  - Model and describe numbers within 1000 as groups of 10 in a variety of ways

★ **2.NBT.B.9** Explain why addition and subtraction strategies work, using *place value* and the properties of operations

Note: 2.NBT.B.9 Explanations could be supported by drawings or objects.

EQ 4: Why are measurement tools important?

★ **2.MD.A.1** Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes

- ➔ **2.MD.A.2**
  - Measure the length of an object twice with two different length units
  - Describe how the two measurements relate to the size of the unit chosen
    For example: A desktop is measured in both centimeters and inches. Student compares the size of the unit of measure and the number of those units
- ➔ **2.MD.A.3** Estimate lengths using units of inches, feet, centimeters, and meters
- ➔ **2.MD.A.4** Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit
- ➔ **2.MD.B.5** Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, and write *equations* with a symbol for the unknown number to represent the problem

★ **2.MD.B.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 solve addition and subtraction problems within 100 on the *number line diagram*
Students should continue to use number lines as a tool in solving addition/subtraction problems within 100, as well as extend their thinking of number lines, making connections to linear measurement.

★ **2.MD.D.9**

Note: 2.MD.D.9 After several experiences with generating data to use, the students can be given data already generated to create the line plot.

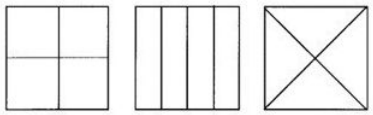
- Generate data by measuring the same *attribute* of similar objects to the nearest whole unit
- Display the measurement data by making a *line plot*, where the horizontal scale is marked off in whole- number units
- Generate data from multiple measurements of the same object
- Make a *line plot*, where the horizontal scale is marked off in whole-number units, to compare precision of measurements

EQ5: How can I partition shapes into equal shares?

★ **2.G.A.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. *This is a foundation for fraction understanding in later grades.*

- ➔ **2.G.A.4** Recognize that equal shares of identical wholes need not have the same shape

Example 2.G.A.4:



Additional Standards:

The following standards build foundational ideas of multiplication and/or area work in 3rd grade:

- ➔ **2.G.A.2** Partition a rectangle into rows and columns of same-size squares and count to find the total number of squares *new this quarter*

- ➔ **2.OA.B.4** *new this quarter*
  - 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

- ➔ **2.OA.B.3** *new this quarter*
  - 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 (up to 20) as a *sum* of two equal addends