

**MATHEMATICAL IDEAS & CONCEPTS:**

- Represent and solve problems involving multiplication and division
- Solve two-step word problems involving addition and subtraction
- Add and subtract within 1000
- Begin to develop understanding of fractions
- Tell time to the minute

**ESSENTIAL QUESTIONS:**

1. *What is multiplication/division and how does it relate to addition/subtraction?*
2. *What strategies can I use when solving addition/subtraction problems with larger numbers?*
3. *What is a fraction?*

**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*

- ★ **3.OA.D.8** Solve two-step word problems using the four operations, and be able to:
  - Represent these problems using *equations* with a letter standing for unknown quantity
  - Assess the reasonableness of answers using mental computation and estimation strategies including rounding

*Q1 Focus: primarily addition and subtraction*

*Note: 3.OA.D.8 This standard is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in conventional order when there are no parentheses to specify a particular order (Order of Operations).*

*\*\*This standard is not listed with a specific essential question because it should be embedded throughout all aspects of their mathematical work this year.*

**EQ 1: What is multiplication/division and how does it relate to addition/subtraction?**

- ★ **3.OA.A.3** Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities (e.g., by using drawings and *equations* with a symbol for the unknown number to represent the problem)
  - **3.OA.A.1** Interpret *products* of *whole numbers* (e.g., interpret  $5 \times 7$  as the total number of objects in 5 groups of 7 objects each)  
*For example:* Describe a context in which a total number of objects can be expressed as  $5 \times 7$ .
  - **3.OA.A.2** Interpret whole-number *quotients* of *whole numbers* (e.g., interpret  $56 \div 8$  as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each)  
*For example:* Describe a context in which a number of shares or a number of groups can be expressed as  $56 \div 8$
- Q1 Focus: equal groups multiplication/division situations. Students should be able to determine what each number represents (number of groups, number in each group, and total).*
- ★ **3.OA.C.7** *Q1 Expectation: fluency with 2, 10, 5 facts. These facts are foundational to building other facts throughout the year.*
  - Using *computational fluency*, multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that  $8 \times 5 = 40$ , one knows  $40 \div 5 = 8$ ) or properties of operations
  - By the end of Grade 3, automatically (*fact fluency*) recall all *products* of two one-digit numbers

*Note: 3.OA.C.7 Computational fluency is defined as a student's ability to efficiently and accurately solve a problem with some degree of flexibility with their strategies*



## EQ 2: What strategies can I use when solving addition/subtraction problems with larger numbers?

- ★ **3.NBT.A.2** Using *computational fluency*, add and subtract within 1000 using strategies and *algorithms* based on *place value*, properties of operations, and the relationship between addition and subtraction.

*Note: 3.NBT.A.2 Computational fluency is defined as a student's ability to efficiently and accurately solve a problem with some degree of flexibility with their strategies.*

*2nd grade worked with sums within 1000 using concrete and pictorial representations.*

→ **3.NBT.A.1** Use *place value* understanding to round *whole numbers* to the nearest 10 or 100.

## EQ 3: What is a fraction?

*Note: Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8*

- ★ **3.NF.A.1**

- Understand a *fraction*  $1/b$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts. *For example:* Unit fractions are fractions with a numerator of 1 derived from a whole partitioned into equal parts and having 1 of those equal parts ( $\frac{1}{4}$  is 1 part of 4 equal parts).
- Understand a *fraction*  $a/b$  as the quantity formed by  $a$  parts of size  $1/b$ . *For example:* Unit fractions can be joined together to make non-unit fractions ( $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4}$ ).

→ **3.G.A.2**

- Partition shapes into parts with equal areas
- Express the area of each part as a *unit fraction* of the whole. *For example:* Partition a shape into 4 parts with equal area, and describe the area of each part as  $1/4$  of the area of the shape.

## Additional Standards:

→ **3.MD.A.1** *Q1 focus: telling and writing time to the nearest minute*

- Tell time using the terms quarter and half as related to the hour (e.g., quarter-past 3:00, half-past 4:00, and quarter till 3:00)
- Tell and write time to the nearest minute and measure time intervals in minutes
- Solve word problems involving addition and subtraction of time intervals in minutes (e.g., by representing the problem on a *number line diagram*)