# CAR Unit Template

## Unit Title: Mathematics Operations with Rational Numbers – Unit 1 – Module A

**Grade level: Grade 7**

**Timeframe:**

## Essential Questions

## Standards

### Standards (Taught and Assessed):

**7.NS.A.1** Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

a. Describe situations in which opposite quantities combine to make 0. *For example, in the first round of a game, Maria scored 20 points. In the second round of the same game, she lost 20 points. What is her score at the end of the second round?*

**7.NS.A.1** Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

b. Understand *p* + *q* as the number located a distance |*q*| from *p*, in the positive or negative direction depending on whether *q* is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.

**7.NS.A.1** Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

c. Understand subtraction of rational numbers as adding the additive inverse, *p* − *q* = *p* + (-*q*). Show that the distance between two rational numbers on the number line is the absolute value of their difference and apply this principle in real-world contexts.

**7.NS.A.1** Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

d. Apply properties of operations as strategies to add and subtract rational numbers.

**7.NS.A.2** Apply and extend previous understandings of multiplication and division of fractions to multiply and divide rational numbers.

a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.

**7.NS.A.2** Apply and extend previous understandings of multiplication and division of fractions to multiply and divide rational numbers.

b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If *p* and *q* are integers, then -(*p*/*q*) = (-*p*)/*q* = *p*/(-*q*). Interpret quotients of rational numbers by describing real world contexts.

**7.NS.A.2** Apply and extend previous understandings of multiplication and division of fractions to multiply and divide rational numbers.

c. Apply properties of operations as strategies to multiply and divide rational numbers.

**7.NS.A.2** Apply and extend previous understandings of multiplication and division of fractions to multiply and divide rational numbers.

d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.

**7.NS.A.3** Solve real-world and mathematical problems involving the four operations with rational numbers.

**Key**: Major Cluster Supporting Cluster Additional Cluster

### Highlighted Career Ready Practices and 21st Century Themes/Skills

### Social-Emotional Learning Competencies

## Instructional Plan

Pre-Assessment and Reflection

| **Pre-Assessment** | **Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections** |
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Student Learning Objectives (SLO), Strategies, Formative Assessment, Activities and Resources (add rows as needed)

| **SLO – WALT****We are learning to/that** | **Student Strategies** | **Formative Assessment** | **Activities and Resources** | **Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections** |
| --- | --- | --- | --- | --- |
| **7.NS.A.1 – WALT** apply previous understandings of addition to add rational numbers |  |  |  |  |
| **7.NS.A.1a. – WALT** describe situations in which opposites combine to make zero |  |  |  |  |
| **7.NS.A.1a. – WALT** show by modeling, a number and its opposite have a sum of zero (additive inverse) |  |  |  |  |
| **7.NS.A.1b. – WALT** *p* + *q* is the number located a distance |*q*| from *p*, in the positive or negative direction depending on whether *q* is positive or negative (e.g. 5 + -4 is 4 units in the negative direction from 5 and, similarly, 5 + 4 is also 4 units away in the positive direction) |  |  |  |  |
| **7.NS.A.1 – WALT** represent addition and subtraction of signed rational numbers on a vertical or horizontal number line |  |  |  |  |
| **7.NS.A.1b. – WALT** interpret sums of rational numbers in real world situations |  |  |  |  |
| **7.NS.A.1 – WALT** apply previous understandings of subtraction to subtract rational numbers |  |  |  |  |
| **7.NS.A.1c. – WALT** subtraction of rational numbers is the same as adding the additive inverse, *p* − *q* = *p* + (-*q*) |  |  |  |  |
| **7.NS.A.1c. – WALT** show by modeling on a number line that the distance between two rational numbers is the absolute value of their differences and apply the concept in real world contexts |  |  |  |  |
| **7.NS.A.1d. – WALT** apply properties of operations as strategies to add and subtract rational numbers |  |  |  |  |
| **7.NS.A.2 – WALT** apply previous understandings of multiplication of fractions to multiply signed rational numbers |  |  |  |  |
| **7.NS.A.2a. – WALT** operations on signed rational numbers continue to satisfy the properties of operations |  |  |  |  |
| **7.NS.A.2a. – WALT** the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers |  |  |  |  |
| **7.NS.A.2a. – WALT** interpret the products of signed rational numbers in real world situations |  |  |  |  |
| **7.NS.A.2 – WALT** apply previous understandings of division of fractions to divide signed rational numbers |  |  |  |  |
| **7.NS.A.2b. – WALT** integers can be divided as long as the divisor is not zero |  |  |  |  |
| **7.NS.A.2b. – WALT** division of integers results in a signed rational number |  |  |  |  |
| **7.NS.A.2b. – WALT** If *p* and *q* are integers, then -(*p*/*q*) = (-*p*)/*q* = *p*/(-*q*) |  |  |  |  |
| **7.NS.A.2b. – WALT** interpret quotients of signed rational numbers by describing real world contexts |  |  |  |  |
| **7.NS.A.2c. – WALT** apply properties of operations as strategies to multiply and divide signed rational numbers |  |  |  |  |
| **7.NS.A.2d. – WALT** convert a rational number to a decimal using long division |  |  |  |  |
| **7.NS.A.2d. – WALT** the decimal form of a rational number terminates in zeros or eventually repeats |  |  |  |  |
| **7.NS.A.3 – WALT** solve real-world and mathematical problems involving the four operations with rational numbers in fraction form |  |  |  |  |
| **7.NS.A.3 – WALT** solve real-world and mathematical problems involving the four operations with rational numbers in decimal form |  |  |  |  |

Benchmark Assessment 1

| **Benchmark Assessment** | **Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections**  |
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Benchmark Assessment 2

| **Benchmark Assessment**  | **Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections** |
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Summative Assessments (add rows as needed)

| **Summative Assessment**  | **Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections** |
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Interdisciplinary Connections

| **Interdisciplinary Connections** | **Modifications (ELL, Special Education, Gifted, At-risk of Failure, 504) and Reflections** |
| --- | --- |
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