**E.Q. What strategies are most useful in helping me develop algorithms for adding, subtracting, multiplying, and dividing positive and negative rational numbers?**

Enduring understandings

* Computation with positive and negative numbers is often necessary to determine relationships between quantities.
* Models, diagrams, manipulatives and patterns are useful in developing and remembering algorithms for computing with positive and negative numbers.
* Properties of real numbers hold for all rational numbers.
* Positive and negative numbers are often used to solve problems in everyday life.

*Assessments*

*A Poster*

*Unit 1 Assessment*

**Concept**

Solve real-world problems using all operations for rational numbers.

**Standards:** MCC7.NS.3

**Lesson E.Q.’s**:

-How do I use positive and negative numbers to represent quantities in real-world contexts?

Vocabulary

**Concept**

Multiply & divide rational numbers

**Standards:** MCC7.NS.2 a,b,c,d

**Lesson E.Q.’s**:

-What strategies are most useful in helping me develop algorithms for multiplying, & dividing, positive and negative rational numbers?

-How do I convert a rational number to a decimal using long division?

**Vocabulary**

Multiplicative Inverse

Long Division

Repeating Decimals

Terminating Decimals

**Concept**

Add and subtract rational numbers.

**Standards:** MCC7.NS1a,b,c,d

**Lesson E.Q.’s**:

-What models can be used to show addition and subtraction of positive and negative rational numbers?

-What strategies are most useful in helping me develop algorithms for adding, & subtracting, positive and negative rational numbers?

-How can I use models to prove that opposites combine to 0?

-What real life situations combine to make 0?

-How do I use a number line to model addition or subtraction of rational numbers?

**Vocabulary**

Additive Inverse

Opposite numbers

Zero Pair

**Concept \*(transition)**

Understand signs of numbers in ordered pairs as locations in quadrants in the coordinate plane and their relationships across axis.

**Standards:** MCC6.NS.6b, 6c, G3

**Lesson E.Q.’s**:

-Why is graphing on the coordinate plane helpful?

-How can I use coordinates to find the distances between points?

**Vocabulary**

Coordinates

Ordered pair

Origin

X-axis

X-coordinate

Y-axis

Y-coordinate

**Concept \*(transition)**

Understand ordering and absolute value of rational numbers.

**Standards:** MCC6NS.7a-7d

**Lesson E.Q.’s**:

-How can I use absolute value to find the lengths of the sides of polygons on the coordinate plane?

**Vocabulary**

Absolute value

Inequality

**Concept\* (transition)**

Understand that positive and negative numbers are used to describe opposite directions or values.

**Standards:** MCC6.NS.5 MCC6.NS.6a

**Lesson E.Q.’s**:

-When are negative numbers used and why are they important?

-How do I use positive and negative numbers in everyday life?

-Where do I place positive and negative rational numbers on the number line?

-How do I use positive and negative numbers to represent quantities in real-world contexts?

**Vocabulary**

Integers -Natural Numbers- Negative numbers- Postitive numbers- Rational numbers