

Subject	Grade Seven – Standard Math
Nine Week	First Nine Weeks
Standard	<p>7.NS.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.</p> <p>a. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.</p> <p>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.</p> <p>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.</p> <p>d. Apply properties of operations as strategies to add and subtract rational numbers.</p> <p>7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p>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.</p> <p>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.</p> <p>c. Apply properties of operations as strategies to multiply and divide rational numbers.</p> <p>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.</p> <p>7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers.</p> <p>7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p>7.EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.</p> <p>7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation</p> <p>7.EE.4 Use variables to represent quantities in a real world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p>

	<p>a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.</p> <p>b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.</p>
<p>Objectives</p>	<p>7.NS.1</p> <ul style="list-style-type: none"> • Describe situations in which opposite quantities combine to make 0. • Represent and explain how a number and its opposite have a sum of 0 and are additive inverses. • Demonstrate and explain how adding two numbers, $p + q$, if q is positive, the sum of p and q will be q spaces to the right of p on the number line. • Demonstrate and explain how adding two numbers, $p + q$, if q is negative, the sum of p and q will be q spaces to the left of p on the number line. • Identify subtraction of rational numbers as adding the additive inverse property to subtract rational numbers, $p - q = p + (-q)$. • Identifies properties of addition and subtraction when adding and subtracting rational numbers. • Apply and extend previous understanding to represent addition and subtraction problems of rational numbers with a horizontal or vertical number line • Interpret sums of rational numbers by describing real-world contexts. • Explain and justify why the sum of $p + q$ is located a distance of q in the positive or negative direction from p on a number line. • Represent the distance between two rational numbers on a number line is the absolute value of their difference and apply this principle in real-world contexts. • Apply the principle of subtracting rational numbers in real-world contexts. • Apply properties of operations as strategies to add and subtract rational numbers. <p>7.NS.2</p> <ul style="list-style-type: none"> • Recognize that the process for multiplying fractions can be used to multiply rational numbers including integers. • Know and describe the rules when multiplying signed numbers. • Apply the properties of operations, particularly distributive property, to multiply rational numbers. Interpret the products of rational numbers by describing real-world contexts. • Explain why integers can be divided except when the divisor is 0. • Describe why the quotient is always a rational number. • Know and describe the rules when dividing signed numbers, integers. • Recognize that $-(p/q) = -p/q = p/-q$. • Interpret the quotient of rational numbers by describing real-world contexts. • Identify how properties of operations can be used to multiply and divide rational numbers (such as distributive property, multiplicative inverse property, multiplicative identity, commutative property for multiplication, associative property for multiplication, etc.) • Apply properties of operations as strategies to multiply and divide rational numbers.

	<ul style="list-style-type: none"> • Convert a rational number to a decimal using long division. • Explain that the decimal form of a rational number terminates (stops) in zeroes or repeats. <p>7.NS.3</p> <ul style="list-style-type: none"> • Write an expression or equation from a word problem using a letter as the variable (unknown number). • Use order of operations to solve multi-step expressions. Explore and state common money, time, calendar, measurement, and geometric properties characteristics, equivalencies, and formulas. • Model and solve real world problems with computation of rational numbers. • Model and define complex fractions as division of ANY rational expression, term, or number. • Write and model the steps to problem solving explaining my own thought processes. <p>7.EE.1</p> <ul style="list-style-type: none"> • Combine like terms with rational coefficients. • Factor and expand linear expressions with rational coefficients using the distributive property. • Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. <p>7.EE.2</p> <ul style="list-style-type: none"> • Write expressions using real world situations. • Write multiple representations of expressions for the same situation. • Explain and model how using the properties of equality and the properties of operations helps write multiple representations of expressions for the same situation. <p>7.EE.3</p> <ul style="list-style-type: none"> • Change a fraction to a decimal, a decimal to a fraction, a fraction to a percent, a percent to a fraction, a decimal to a percent, and a percent to a decimal. • Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. • Apply properties of operations to calculate with numbers in any form. • Assess the reasonableness of answers using mental computation and estimation strategies. <p>7.EE.4</p> <ul style="list-style-type: none"> • Change a fraction to a decimal, a decimal to a fraction, a fraction to a percent, a percent to a fraction, a decimal to a percent, and a percent to a decimal. • Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. • Apply properties of operations to calculate with numbers in any form. • Assess the reasonableness of answers using mental computation and estimation strategies.
--	---

Topics	<p>Adding Integers with the Same Sign Adding Integers with Different Signs Subtracting Integers Applying Addition and Subtraction of Integers</p> <p>Multiplying Integers Dividing Integers Applying Integer Operations</p> <p>Rational Numbers and Decimals Adding Rational Numbers Subtracting Rational Numbers Multiplying Rational Numbers Dividing Rational Numbers Applying Rational Number Operations</p> <p>Applying Rational Number Operations Rewriting Percent Expressions</p> <p>Algebraic Expressions One-Step Equations with Rational Coefficients Writing Two-Step Equations Solving Two-Step Equations</p> <p>Writing and Solving One-Step Inequalities Writing Two-Step Inequalities Solving Two-Step Inequalities</p>
Major Assignment/s	Integer Learning Menu (Late August)
Instructional Materials	<p>Go Math Video Absolute Value, Real Numbers Flocabulary Video (Keep Flip Change) Learn Zillion Tutorials and study pages Integers, Fractions, Expressions Khan Academy Video- Combining Like Terms Integer Cards Vocabulary 4 Square Pages Integer Chips Number Lines EngageNY module 2 Fraction Manipulative (Fraction Circles, Fraction Bars, Fraction Blocks)</p>

Assessment(s)	Diagnostic Assessment (Part A and Part B) Integer Formative Assessment Equation Formative Assessments Common Assessment 1 –Part A- (NS. EE. RP Standards) End Of Unit Assessment (7.NS.A.1, 7.NS.A.2, 7.NS.A.3, 7.EE.A.2) Exit Slip daily formative assessments Bell work formative assessment
Field Trip/s	N/A