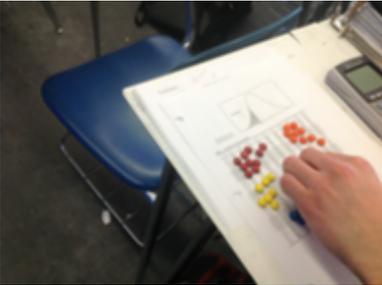
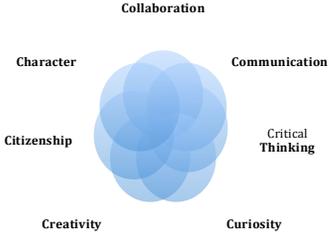


Content Area: Mathematics	Course: Math	Grade Level: Seventh
	<p>R14 The Seven Cs of Learning</p> 	
Unit Titles	Length of Unit	
<ul style="list-style-type: none"> Operating with Rational Numbers 	7 weeks	
<ul style="list-style-type: none"> Proportional Relationships 	6 weeks	
<ul style="list-style-type: none"> Algebraic Reasoning 	8 weeks	
<ul style="list-style-type: none"> Geometry 	8 weeks	
<ul style="list-style-type: none"> Statistical Inferences and Probability 	7 weeks	



Strands	Course Level Expectations
Ratios and Proportional Relationships	<ul style="list-style-type: none"> • Students use their understanding of ratios and proportionality to solve a wide variety of percent problems, • Students graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope • Distinguish proportional relationships from other relationships.
The Number System	<ul style="list-style-type: none"> • Develop a unified understanding of number, recognizing fractions, decimals (that have a finite or a repeating decimal representation), and percents as different representations of rational numbers. • Apply properties of operations to add, subtract, multiply, and divide rational numbers • Solve real-world and mathematical problems involving the four operations with rational numbers. •
Expressions & Equations	<ul style="list-style-type: none"> • Formulate expressions and equations in one variable and use these equations to solve problems. • 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. • Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. • Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
Geometry	<ul style="list-style-type: none"> • Analyze and interpret the relationship between two-dimensional and three-dimensional figures • Solve problems involving scale drawings of geometric figures • Solve real-life and mathematical problems involving angle measure, area, surface area, and volume • Construct geometric shapes with given conditions.
Statistics & Probability	<ul style="list-style-type: none"> • Use random sampling to draw inferences about a population. • Draw informal comparative inferences about two populations. • Investigate chance processes and develop, use, and evaluate probability models. • Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

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Unit Title	Operating with Rational Numbers	Length of Unit	7 weeks
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Inquiry Questions (Engaging & Debatable)	<ul style="list-style-type: none"> • What is the relationship between positive and negative numbers? • What strategies are most efficient for operating with rational numbers? • How are positive and negative quantities represented in the real world?
Standards	The Number System: 7. NS.A.1, 7. NS.A.2, 7. NS.A.3
Unit Strands & Concepts	<ul style="list-style-type: none"> • Properties of operations • Rational numbers • Equivalence
Key Vocabulary	Rational numbers, Integer, Additive inverse, Finite decimal, Infinite Decimal

Unit Title	Operating with Rational Numbers	Length of Unit	7 weeks
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Critical Content: My students will Know...	Key Skills: My students will be able to (Do)...
<ul style="list-style-type: none"> • Adding a negative number is equivalent to subtracting its positive opposite • Multiplying by a given number is equivalent to dividing by its reciprocal • The sum of any number and its opposite is zero • Properties of operations extend to all rational numbers • The rules for multiplying rational numbers allow for the distributive property to be extended to all rational numbers • Integers can be divided, provided that the divisor is not zero • Every quotient of integers (with non-zero divisor) is a rational number. (i.e $-(p/q) = (-p)/1 = p/(-q)$) • The decimal form of a rational decimal either terminates in zeros or eventually repeats 	<ul style="list-style-type: none"> • Add and subtract rational numbers, using equations and number lines • Interpret sums of rational numbers by describing real-world contexts. • Apply properties of operations as strategies to add, subtract, multiply, and divide rational numbers. • Describe situations in which opposite quantities sum to zero • Relate subtracting rational numbers to finding a missing addend • 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. • Interpret products and quotients of rational numbers by describing real-world contexts. • Solve problems involving complex fractions • Convert a rational number to a decimal

Assessments:	Performance task focused on strategies for adding subtracting, multiplying, and dividing rational numbers, properties of operations, solving mathematical and real world problems involving rational numbers.
Teacher Resources:	Glencoe Math, Engage NY, 3 Act Task Bank, CCSS aligned anchor tasks, Illustrative Mathematics, Georgia Department of Education CCSS aligned tasks, North Carolina Department of Instruction, CCSS aligned tasks.

Unit Title	Proportional Relationships	Length of Unit	6 weeks
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Inquiry Questions (Engaging & Debatable)	<ul style="list-style-type: none"> • How are proportional relationships represented? • What strategies and methods are most efficient in solving for an unknown in a proportional relationship? • How is percent represented in mathematical and real world contexts?
Standards	Ratios and Proportional Relationships: 7.RP.A.1, & RP.A2, 7.RP.A3
Unit Strands & Concepts	<ul style="list-style-type: none"> • Multiplicative reasoning • Equivalence • Proportional relationships • Relationship between percent and fractions, decimals, and ratios
Key Vocabulary	Unit rates, ratios, proportional relationships, proportions, constant of proportionality, complex fractions, percent, simple interest, rate, principal, tax, discount, markup, markdown, gratuity, commissions, fees, percent of error

Unit Title	Proportional Relationships	Length of Unit	6 weeks
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Critical Content: My students will Know ...	Key Skills: My students will be able to (Do) ...
<ul style="list-style-type: none"> • Graphs that are not lines through the origin and tables in which there is not a constant ratio in the entries do not represent proportional relationships • cross multiplying can be used to solve a proportion represented by an equation through connecting the process with their prior work with unit rates and equivalent fractions • Percentages can also be used in making comparisons between two quantities 	<ul style="list-style-type: none"> • Compute unit rates associated with ratios of fractions • Represent and analyze proportional relationships • Represent proportional relationships with equations • Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. • Use proportional relationships to solve multistep ratio and percent problems

Assessments:	Performance task focused on proportional reasoning, ways to representing and solving proportional relationships, equivalence, and strategies for solving mathematical and real world problems involving percent
Teacher Resources:	Glencoe Math Engage NY, 3 Act Task Bank, CCSS aligned anchor tasks, Illustrative Mathematics, Georgia Department of Education CCSS aligned tasks, North Carolina Department of Instruction, CCSS aligned tasks.

Unit Title	Algebraic Reasoning	Length of Unit	8 weeks
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Inquiry Questions (Engaging & Debatable)	<ul style="list-style-type: none"> • How can algebraic expressions be represented? • How are the properties of operations helpful in working with equations and inequalities? • How are rational numbers used to represent real life problem situations?
Standards	Expressions & Equations 7.EE.A.1, 7.EE.A.2, 7.EE.B.3, 7.EE.B.4
Unit Strands & Concepts	<ul style="list-style-type: none"> • Properties of operations • Structure of equations, inequalities, and expressions • Equivalence • Representations of rational numbers
Key Vocabulary	Coefficients, like terms, distributive property, factor, numeric expressions, algebraic expressions, maximum, minimum

Unit Title	Algebraic Reasoning	Length of Unit	8 weeks
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Critical Content: My students will Know ...	Key Skills: My students will be able to (Do) ...
<ul style="list-style-type: none"> • Different ways of writing expressions can serve different purposes and provide different ways of seeing a problem. • Whole numbers, integers, and positive and negative fractions belong to a single system of rational numbers • Recognize the ways in which the process of solving an inequality is similar to the process of solving linear equations: • Multiplying or dividing both sides of an inequality by a negative number reverses the order of the comparison it represents. 	<ul style="list-style-type: none"> • Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. • Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), • Use mental computation and estimation to assess the reasonableness of solutions • Apply properties of operations to calculate with numbers in any form; and convert between forms as appropriate • Compare arithmetical and algebraic solutions to word problems • Use variables to represent quantities in a real-world or mathematical problem • Construct simple equations and inequalities to solve problems • Graph the solution set of an inequality and interpret it in the context of the problem.

Assessments:	Performance task focused on applying the properties of operations to work with equations and inequalities, equivalence, representing and operating with rational numbers, and solving real world and mathematical problems involving linear equations and inequalities
Teacher Resources:	Glencoe Math Engage NY, 3 Act Task Bank, CCSS aligned anchor tasks, Illustrative Mathematics, Georgia Department of Education CCSS aligned tasks, North Carolina Department of Instruction, CCSS aligned tasks.

Unit Title	Geometry	Length of Unit	8 weeks
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Inquiry Questions (Engaging & Debatable)	<ul style="list-style-type: none"> • What conditions impact the possible constructions of a figure? • How are scale drawings useful in real world contexts? • What is the relationship between two and three-dimensional figures? • How can we find the area of a circle?
Standards	Geometry: 7.G.A.1, 7.G.A.2,7, G.A.3, 7.G.B.4, 7.G.B.5, 7.G.B.6
Concepts	<ul style="list-style-type: none"> • Proportionality • Spatial reasoning • Geometric Attributes • Two and three-dimensional space • Similarity and congruence • Geometric composition/decomposition
Key Vocabulary	scale drawing, dimensions, scale factor, plane sections, right rectangular prism, right rectangular pyramids, parallel, perpendicular, scalene triangle, obtuse triangle, equilateral triangle, right triangle, inscribed, circumference, radius, diameter, pi,, supplementary, vertical, adjacent, complementary, pyramids, face, base

Unit Title	Geometry	Length of Unit	8 weeks
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Critical Content: My students will Know...	Key Skills: My students will be able to (Do)...
<ul style="list-style-type: none"> Any cross-section of a prism cut by a plane parallel to the original planes is a copy of the base. The relationship between the diameter and circumference of a circle Relationship between radius and diameter of a circle Relationship between circumference and area of a circle When conditions involving given side lengths or angle measures result in the construction of a unique triangle, more than one triangle, or no triangle 	<ul style="list-style-type: none"> Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. Compare and contrast scale drawings to their original counterpart Describe the two-dimensional figures that result from slicing three-dimensional figures Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. Apply the formulas for the area and circumference of a circle to solve problems Apply understanding of supplementary, complementary, vertical, and adjacent angles to solve multi-step problems as well as to write and solve simple equations for an unknown angle in a figure.

Assessments:	Performance task focused on the calculation and application of the area and circumference of circles, geometric composition/decomposition, calculation and application of surface area , area and volume of three-dimensional figures in context, constructing geometric shapes given conditions, applying understanding of different types of angles to solve multi-step problems, and computing lengths and areas from scale drawings.
Teacher Resources:	Glencoe, Engage NY, 3 Act Task Bank, CCSS aligned anchor tasks, Illustrative Mathematics, Georgia Department of Education CCSS aligned tasks, North Carolina Department of Instruction, CCSS aligned tasks.

Unit Title	Statistical Inferences and Probability	Length of Unit	7 weeks
Inquiry Questions (Engaging & Debatable)	<ul style="list-style-type: none"> • How can the likelihood of a given event be determined? • How can data from a representative sample be used to make inferences about a given population? • How can differences in observed frequency and theoretical probability be explained? 		
Standards	Statistics & Probability: 7.SP.A.1, 7.SP.A.2, 7.SP.B.4, 7.SP.B.5, 7.SP.C.6, 7.SP.C.7, 7.SP.C.8,		
Unit Strands & Concepts	<ul style="list-style-type: none"> • Variability • Central Tendency • Statistical Inferencing • Sampling • Relative frequency • Theoretical probability 		
Key Vocabulary	random sampling, population, representative sample, inferences, variation/variability, distribution, measures of center, measures of variability, sample spaces, probability, simple event, compound event, relative frequency		

Unit Title	Statistical Inferences and Probability	Length of Unit	7 weeks
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Critical Content: My students will Know...	Key Skills: My students will be able to (Do)...
<ul style="list-style-type: none"> ● Probability as the relative frequency of a chance event ● A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. ● The connection between observed relative frequency and theoretical probability ● As the number of trials increase, the experimental probability approaches the theoretical probability. ● Multiplication can be useful in finite situations when counting outcomes for chance events ● A statistic computed from a random sample, such as the mean of the sample, can be used as an estimate of that same characteristic of the population from which the sample was selected. ● Statistics can be used to gain information about a population by examining a sample of the population ● Random sampling tends to produce a representative sample and support valid inferences ● There will be some degree of variability between a sample statistic and the target population 	<ul style="list-style-type: none"> ● Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency ● Predict the approximate relative frequency given the probability ● Develop a probability model and use it to find probabilities of events. ● Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. ● Find probabilities of compound events using strategies such as organized lists, tables, tree diagrams, and simulation. ● Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. ● Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. ● Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities ● Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.

Assessments:	Performance task focused on developing, testing, and interpreting models of probability in comparison to observed frequencies, Applying strategies to compute compound probabilities, using measures of center and variability from random samples to draw inferences about two populations
Teacher Resources:	Engage NY, 3 Act Task Bank, CCSS aligned anchor tasks, Illustrative Mathematics, Georgia Department of Education CCSS aligned tasks, North Carolina Department of Instruction, CCSS aligned tasks.