1st Nine Weeks				
Time	**Cluster**	**Standards**	**Learning Targets**	**Lesson Topics/Resources**
1 Week	7.RP.A Analyze proportional relationships and use them to solve real-world and mathematical problems.	7.RP.A.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks ½ mile in each ¼ hour, compute the unit rate as the complex fraction ½ ¼ miles per hour, equivalently 2 miles per hour.	I can compute a unit rate based on ratios expressed as fractions. I can simply a complex fraction.	Unit Rates Ratios Fractions Complex Fractions
2 Weeks	7.RP.A Analyze proportional relationships and use them to solve real-world and mathematical problems.	7.RP.A.2 Recognize and represent proportional relationships between quantities. a) Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. b) Identify whether two quantities of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. c) Represent proportional relationships by equations. For example, if total cost 5 is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t=pn.	I can write and simplify ratios. I can identify proportional relationships by using tables and graphs. I can identify and calculate the constant of proportionality (a unit rate). I can write an equation to represent a proportional relationship. I can use a graph to describe a proportional relationship.	Ratios Rates Constant of Proportionality Identifying and Writing Proportions Solving Proportions

		d) Explain what a point (x,y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.		
1 Week	7.RP.A Analyze proportional relationships and use them to solve real-world and mathematical problems.	7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.	I can solve multistep ratio problems. I can solve multistep percent problems. I can solve for simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase/decrease, and percent error.	Ratios Rates Constant of Proportionality Identifying and Writing Proportions Solving Proportions Fractions, Decimals and Percent Percent of a Number Solving Percent Problems Percent of Change Simple Interest
2 Weeks	7.NS.A Apply and extend previous and understanding of operations with fractions to add,	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.	I can describe situations in which a number and its opposite combine to make 0 (additive inverse).	Numbers and Patterns Order of Operations

		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. 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. 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. d) Apply properties of operations as strategies and subtract rational numbers.	I can understand absolute value as the distance from 0 on the number line. I can add positive and negative numbers. I can describe real-world contexts using integers. I can subtract positive and negative numbers. I can use number properties to perform math operations.	Properties of Numbers Integers Adding Integers Additive Inverse and Absolute Value Subtracting Integers
subtract, multiply, and divide rational numbers.				
2 Weeks	7.NS.A Apply and extend previous and understanding of operations with fractions to add, subtract, multiply, and divide rational numbers.	7.NS.A.2 Apply and extend previous understandings of multiplication and division and 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	I can multiply and divide integers. I can justify why the following is true: -(p/q) = -p/q = p/-q I can describe products and quotients of integers by using real-world situations.	Multiplying and Dividing Integers Multiplying and Dividing Rational Numbers Variables and Algebraic Expressions

		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. 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. c) Apply properties of operations as strategies 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.	I can use the associative and commutative property of multiplication and apply order of operations to multiply and divide integers. I can convert a rational number to a decimal using long division.	Solving Equations Containing Integers
1 Week	7.NS.A Apply and extend previous and understanding of operations with fractions to add, subtract, multiply, and divide rational numbers.	7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)	I can add, subtract, multiply, and divide fractions. I can identify and simplify complex fractions.	Adding and Subtracting Fractions Adding and Subtracting Mixed Numbers Multiplying Fractions and Mixed Numbers Dividing Fractions and Mixed Numbers

2nd Nine Weeks				
Time	**Cluster**	**Standards**	**Learning Targets**	**Lesson Topics/Resources**
2 Weeks	7.EE.A Use properties of operations to generate equivalent expressions.	7.EE.A.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. 7.EE.A.2 Understand that rewriting an expression in different forms in a contextual problem can provide multiple ways of interpreting the problem and how the quantities in it are related. For example, shoes are on sale at a 25% discount. How is the discounted price P related to the original cost C of the shoes? C - .25C=P. In other words, P is 75% of the original cost for C- .25C can be written as .75C.	I can apply properties of operations and work with rational numbers to write equivalent expressions. I can understand the reason for rewriting an expression in terms of a contextual situation.	Translate Words into Math Simplifying Algebraic Expressions
4 Weeks	7.EE.B Solve real-life and mathematical problems using numerical and algebraic expressions and equations and inequalities.	7.EE.B.3 Solve multi- step real-world and mathematical problems posed with positive and negative rational numbers presented in any form (whole numbers, fractions, and decimals). a) Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. b) Assess the reasonableness of answers using mental computation and estimation strategies. 7.EE.B.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.	I can solve multi-step problems using fractions, decimals, and percentages. I can convert between fractions, decimals, and percentages in order to solve a problem. I can solve a two-step equation using inverse operations and explain each step. I can solve a multi-step equation and explain each step (distributive property or combine like	Solving Two-Step equations Solving Multi-Step Equations Solving Equations with Variables on Both Sides Solving for a Variable Inequalities Solving Inequalities by Adding or Subtracting

		a) Solve contextual problems leading to equation 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. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?	terms before using inverse operations). I can solve a two-step inequality and graph the solution. I can solve a multi-step inequality and graph the solution.	Solving Inequalities by Multiplying or Dividing Solving Multi-Step Inequalities
		b) Solve contextual problems leading to inequalities of the form px + q > r or px + q < r are specific rational numbers. Graph the solution set of the inequality on a number line and interpret it in the context of the problem. For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions. (Note that inequalities using >, <, ≤, ≥ are included in this standard).	I can write an equation to model a situation, define the variable, and explain the solution within the context of the problem. I can write an inequality to model a situation, define the variable, and explain the solution within the context of the problem.	
2 Weeks	7.G.A Draw, construct, and describe geometrical figures and describe the relationships between them.	7.G.A.1 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.	I can solve proportions involving scale. I can compute actual lengths and areas from a scale drawing. I can reproduce a scale drawing at a different scale.	Similar Figures and Proportions Using Similar Figures Scale Drawing and Modeling

1 Week	7.G.A Draw, construct, and describe geometrical figures and describe the relationships between them.	7.G.A.2 Draw geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	I can draw geometric shapes within given parameters, including: parallel lines, angles, perpendicular lines, line segments. etc.	Classifying Triangles Classifying Quadrilaterals

3rd Nine Weeks				
Time	**Cluster**	**Standards**	**Learning Targets**	**Lesson Topics/Resources**
2 weeks	7.G.B Solve real life and mathematical problems involving angle measure, area, surface area, and volume.	7.G.B.3 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between circumference and area of a circle. 7.G.B.4 Know and use facts about supplementary, complementary, vertical, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure. 7.G.B.5 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.	I can understand the relationship between the radius and the diameter. I can understand the ratio of circumstance to diameter can be expressed as pi. I can know and apply the formulas for circumference and area of a circle. I can identify supplementary, complementary, vertical, and adjacent angles on a figure. I can write and solve equations based upon angle relationships. I can calculate the area of 2-dimensonial figures such as rectangles and triangles.	Properties of Circles Perimeter and Circumference Area of Circles Lines and Angle Relationships Angles of Polygons Area of Parallelograms Area of Triangles and Trapezoids Volume of Prisms Surface Area of Prisms Volume of Pyramids

			I can understand how to use the area of each face on a 3-dimensional figure to find the surface area. I can determine how to find the volume of a 3-dimensional figure as multiplying the area of the base times the height of the figure.	Surface Area of Pyramids
2 Weeks	7.SP.A Use random sampling to draw inferences about a population.	7.SP.A.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. 7.SP.A.2 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. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.	I can analyze sampling methods and identify potential biases. I can use data from a random sample to draw inferences about a characteristic of a population. I can generate multiple samples to find out the variation in the estimate.	Populations and Samples

2 Weeks	7.SP.B Draw informal comparative inferences about two populations.	7.SP.B.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, on a dot plot, the separation between the two distributions of heights is noticeable. 7.SP.B.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.	I can examine two overlapping sets of data to determine the differences in the mean and the variation. I can find the mean, median, and interquartile range for a set of data. I can draw inferences from two sets of data	Frequency Tables Stem and Leaf Plots Line Plots Mean, Median, Mode, and Range Bow-and-Whisker Plots Scatter Plots
2 Weeks	7.SP.C Investigate chance processes and develop, use, and evaluate probability models.	7.SP.C.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. 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. 7.SP.C.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. For example, when rolling a number cube 600 times, predict	I can determine the likelihood of an event. I can find the experimental probability of an event. I can calculate the theoretical probability of a simple event. I can determine the theoretical probability of an event from a simulation. I can determine the sample space of a compound event	Probability Experimental Probability Sample Spaces Theoretical Probability Making Predictions

		that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.	by using an organized list or a table.	
		7.SP.C.7 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.	I can determine the probability of a compound event based on an organized list or table.	
		a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.	I can determine the sample space of a compound event by using a tree diagram.	
		b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?		
1 Week	7.SP.D Summarize and describe numerical data sets.	7.SP.D.8 Summarize numerical data sets in relation to their context.	I can calculate measures of central tendencies.	Mean, Median, Mode, and Range.
		a. Give quantitative measures of center (median and/or mean) and variability (range and/or interquartile range), as well as describing any overall pattern and any	I can describe deviations from the overall pattern and understand the data in context.	Interquartile Range Box and Whisker Plot

		striking deviations from the overall pattern with reference to the context in which the data were gathered. b. Know and relate the choice of measures of center (median and/or mean) and variability (range and/or interquartile range) to the shape of the data distribution and the context in which the data was gathered.		Outliers

4th Nine Weeks				
Time	**Cluster**	**Standards**	**Learning Targets**	**Lesson Topics/Resources**
1 Week	7.SP.D Summarize and describe numerical data sets.	7.SP.D.8 Summarize numerical data sets in relation to their context. a. Give quantitative measures of center (median and/or mean) and variability (range and/or interquartile range), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. b. Know and relate the choice of measures of center (median and/or mean) and variability (range and/or interquartile range) to the shape of the data distribution and the context in which the data was gathered.	I can calculate measures of central tendencies. I can describe deviations from the overall pattern and understand the data in context.	Mean, Median, Mode, and Range. Interquartile Range Box and Whisker Plot Outliers
2 Weeks	ALL	TN Ready Review of all 7th grade standards.		
2 Weeks	TESTING	TN Ready testing will take place over a 2 week period for all subjects.		

2 Weeks	8.NS.A Know that there are numbers that are not rational, and approximate them by rational numbers.	8.NS.A.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually or terminates, and covert a decimal expansion which repeats eventually or terminates into a rational number. 8.NS.A.2 Use rational approximations of irrational numbers to compare the size of irrational numbers locating them approximately on a number line diagram. Estimate the value of irrational expressions such as π 2 . For example, by truncating the decimal expansion of the square root of 2, show that the square root of 2 is between 1.4 and 1.5, and explain how to continue on to get better approximations.	I can find rational approximations of irrational numbers. I can compare the size of approximations of irrational numbers. I can locate approximations of irrational numbers on a number line. I can estimate the value of expressions of irrational numbers.	Rational Numbers Irrational Numbers Decimals Number Lines
1 Week	7th Grade Review	Review for final Benchmark Exam/Final	2nd Semester	Angles, Area, Volume, Statistics, and Probability
1 Week	Finals	Final Exams		Angles, Area, Volume, Statistics, and Probability