TX-Advanced Math 7		Scope and Sequence
Unit	**Lesson**	**Objectives**
Equivalent Forms of Fractions, Decimals, and Percents		
	Introduction to Percents	
		Identify an equivalent percent, fraction, or decimal represented in multiple forms.
		Create diagrams to solve for a percent in real-world problems.
		Find the percent of a number using the fraction or decimal equivalent form of a percent to write an expression from a diagram.
	Finding a Percent of a Number	
		Solve problems by finding the percent of a number, including amounts of gratuity and tax, by using diagrams and expressions.
		Find the percent of a number when the percent is more than 100.
	Finding a Total Amount	
		Solve for the total amount in gratuity, tax, or commission problems by using diagrams and expressions, understanding that it is a process of adding to the original amount.
		Find the total amount, including discounts, understanding that it is a process of subtracting from the original amount.
	Finding an Original Amount	
		Find the original amount in real-world percent problems involving gratuity, tax, commission, markup, discount, or markdown using diagrams and expressions.
	Simple Interest	
		Calculate simple interest, principal, time, and total using the simple interest formula.
		Apply the simple interest formula in the context of a word problem.
	Percent Increase and Decrease	
		Find the percent change by using the ratio of the change in quantity to the original amount.
		Use percent increase and decrease to solve real-world problems.

TX-Advanced Math 7		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Performance Task: Neighbors Helping Neighbors	
	Unit Test	
Operations with Fractions and Decimals		
	Adding and Subtracting Decimals	
		Use visual representations to add and subtract decimals.
		Apply properties of operations to add and subtract decimals.
		Estimate sums and differences of decimals.
		Describe real-world contexts for adding and subtracting decimals.
	Multiplying Decimals	
		Use the rules of signed numbers to multiply decimals.
		Apply properties of operations to multiply decimals.
		Estimate products of decimals.
		Describe real-world contexts for multiplying decimals.
	Dividing Decimals	
		Use the rules of signed numbers to divide decimals.
		Apply properties of operations to divide decimals.
		Estimate quotients of decimals.
		Describe real-world contexts for dividing decimals.
	Solving Problems Involving Decimals	
		Solve real-world and mathematical problems involving addition, subtraction, multiplication, and division with decimals.

TX-Advanced Math 7		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Adding and Subtracting Fractions	
		Use visual representations to add and subtract fractions.
		Estimate sums and differences of fractions.
		Describe real-world contexts for adding and subtracting fractions.
	Multiplying Fractions	
		Use the rules of signed numbers and visuals to multiply fractions.
		Apply properties of operations to multiply fractions.
		Estimate products of fractions.
		Describe real-world contexts for multiplying fractions.
	Finding a Rule for Dividing Fractions	
		Use the standard algorithm to divide fractions.
	Dividing Fractions	
		Use the rules of signed numbers to divide fractions.
		Apply properties of operations to divide fractions.
		Estimate quotients of fractions.
		Describe real-world contexts for dividing fractions.
	Solving Problems Involving Rational Numbers	
		Solve real-world and mathematical problems involving addition, subtraction, multiplication, and division with rational numbers.
	Unit Test	
Writing Equations for Linear Relationships		

TX-Advanced Math 7		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Proportional Relationships	
		Determine whether a linear function is a direct variation.
		Solve problems involving direct variation.
		Compare proportional and nonproportional linear functions in the form of a table, graph, and equation.
	Finding a Constant of Proportionality	
		Find the constant of proportionality from verbal descriptions, tables, graphs, and diagrams.
	Writing Linear Functions	
		Write a linear equation in slope-intercept form given the slope and a point other than the y-intercept.
		Compare and contrast using point-slope form and the slope-intercept form to get an equation to slope-intercept form.
	Writing Linear Equations Given Two Points	
		Write a linear equation in slope-intercept form given two points.
	Modeling with Variables on Both Sides	
		Use algebra tiles to model one-variable equations with variables on both sides.
		Use algebra tiles to solve one-variable equations with variables on both sides.
	Solving with Variables on Both Sides	
		Determine and apply the steps needed to isolate a variable in a linear equation with variables on both sides.
		Solve equations with variables on both sides and verify the solutions.
	Modeling Real-World Multistep Equations	
		Write multistep linear equations from mathematical problems.
		Write multistep linear equations from real-world scenarios.

TX-Advanced Math 7		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Unit Test	
Real Numbers and The Pythagorean Theorem		
	Introduction to Scientific Notation	
		Convert very small or very large numbers between scientific notation and standard notation.
		Order and estimate products and quotients of numbers written in scientific notation.
	Operations with Scientific Notation	
		Evaluate products and quotients of scientific notation values.
		Recognize scientific notation answers generated by technology and identify the symbols associated with the value.
		Identify proper units of measurement for quantities written in scientific notation.
	Exploring the Pythagorean Theorem	
		Recognize perfect squares.
		Identify sets of Pythagorean triples.
		Apply the Pythagorean theorem using Pythagorean triples as the side lengths.
		Use Pythagorean triples to determine if a triangle is a right triangle.
	Estimating and Comparing Square Roots	
		Estimate square roots without using technology.
		Plot the estimated values of square roots on a number line.
		Make comparative statements involving square roots.
	Finding the Hypotenuse in Right Triangles	
		Use the Pythagorean theorem to find the length of the hypotenuse of a right triangle.

TX-Advanced Math 7		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Approximate the length of the hypotenuse of a right triangle to solve real-world problems.
	Unknown Leg Lengths in Right Triangles	
		Given the length of one leg and the hypotenuse of a right triangle, use the Pythagorean theorem to find the length of the other leg.
		Approximate the length of a leg of a right triangle to solve real-world problems.
	Converse to the Pythagorean Theorem	
		Determine if a triangle is a right triangle by using the converse of the Pythagorean theorem.
	Finding Distance in the Coordinate Plane	
		Apply the Pythagorean theorem to find the distance between two points on the coordinate plane.
		Generate and use the distance formula to find the distance between two points on the coordinate plane.
	Pythagorean Theorem in Three Dimensions	
		Identify diagonals and right triangles within cubes.
		Solve for unknown side lengths of right triangles within a cube.
	Exploring Real Numbers	
		Classify numbers as rational or irrational numbers, and decimals as terminating or repeating.
		Express a repeating decimal with bar notation, and convert it to a fraction.
		Determine sums and products of rational and irrational numbers.
	Unit Test	
Financial Literacy		
	The Cost of Credit	
		Identify and compare types of credit.

TX-Advanced Math 7		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Calculate the total cost of repaying a loan.
		Analyze the impact of interest rate and loan length on the cost of credit.
	Investing	
		Calculate simple interest and compound interest earnings.
		Apply the rule of 72.
		Compare different investment options for saving money.
	Financial Responsibility	
		Describe the advantages and disadvantages of different payment options.
		Identify factors that determine if one is creditworthy.
		Analyze situations to determine if they represent financially responsible decisions.
	Planning for the Cost of College	
		Estimate the total cost and family contribution needed to attend two and four year colleges.
		Determine a savings plan to meet the estimated cost for one year of college.
	Budgeting and Being a Smart Consumer	
		Calculate income tax for earned wages.
		Identify the components of a personal budget, and determine what percentage each category is of the total budget.
		Compare savings from sales, rebates, and coupons.
	Unit Test	
Inequalities		
	Writing Inequalities	
		Write inequalities from words, and vice-versa.

TX-Advanced Math 7		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Write inequalities to represent real-world situations.
	Graphing Inequalities	
		Graph an inequality.
		Write an inequality from a graph.
	Solving Two-Step Inequalities	
		Solve two-step inequalities.
		Solve two-step inequalities in the real world and interpret the results.
	Inequalities in the Real World	
		Write, solve, and graph inequalities to represent real-world situations.
	Unit Test	
Cumulative Exam		
	Cumulative Exam Review	
	Cumulative Exam	
Transformations		
	Congruence	
		Determine the congruence of figures by measuring corresponding sides and angles.
		Identify and write corresponding parts of congruent figures.
	Translations	
		Identify and describe a translation on the coordinate plane.
		Translate figures on the coordinate plane given as an ordered pair and verbal expression.
		Describe a translation using coordinates.

TX-Advanced Math 7		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Reflections	
		Identify and describe a reflection on the coordinate plane.
		Reflect figures on the coordinate plane given the line of reflection.
		Describe a reflected figure using the line of reflection and coordinates.
	Rotations in the Coordinate Plane	
		Rotate figures on the coordinate plane given the degree and direction.
		Describe the rotation of a figure using coordinates.
	Congruence and Transformations	
		Describe a sequence of transformations that shows that a given pre-image is congruent to a transformed figure.
	Dilations in the Coordinate Plane	
		Use the scale factor to graph dilations on the coordinate plane.
		Describe the dilation of a figure on the coordinate plane by the scale factor.
	Effects of Changing the Dimensions of a Figure	
		Identify the effect on other measurements when the dimensions of a shape are changed proportionally.
		Calculate perimeter, area, or volume when the dimensions of a shape are changed proportionally.
	Unit Test	
Similarity		
	Scale Factor	
		Use a given scale factor to find an unknown length on a reduction or enlargement.
		Use a given scale factor to find an unknown length on an original.

TX-Advanced Math 7		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Determining a Scale Factor	
		Identify a scale factor from given dimensions and use it to calculate unknown dimensions.
	Solving Scale Problems Using Proportions	
		Use proportional relationships to solve problems involving scale drawings.
	Scale Drawings and Area	
		Compute areas of figures from scale drawings.
	Changing a Scale	
		Solve problems involving reproducing a scale drawing using a different scale.
	Performance Task: Vacation Adventures	
	Unit Test	
Angle Relationships		
	Angle Relationships	
		Name an angle.
		Identify vertical, adjacent, complementary, and supplementary angles.
		Determine congruence in vertical angle relationships.
		Find missing angle measures using angle relationships.
	Transversals	
		Determine angle relationships created by a transversal line intersecting two nonparallel lines.
		Find unknown angle measures created by a transversal intersecting two or more nonparallel lines.
	Parallel Lines Cut by a Transversal	
		Identify interior angles, exterior angles, alternate interior angles, and alternate exterior angles when a transversal crosses

Unit	Lesson	Objectives
		parallel lines.
		Find missing measurements using angle relationships in a diagram of a transversal crossing parallel lines.
		Determine if two lines cut by a transversal are parallel.
	Sum of Interior Angles of a Triangle	
		Explain that the sum of the interior angles of a triangle is 180 degrees by rearranging the angles to create a straight line.
		Use angle relationships formed from parallel lines cut by transversals to establish facts about the interior angles of a triangle.
		Determine the angle measures of interior angles of a triangle.
	Exterior Angles of a Triangle	
		Identify exterior, adjacent interior, and remote interior angles of a triangle.
		Use angle relationships to establish facts about exterior angles of a triangle.
		Determine angle measures of exterior angles of a triangle and the sum of exterior angles of a triangle.
	Similar Triangles	
		Identify proportionality of side lengths to determine triangle similarity.
		Write similarity statements of similar triangles.
		Analyze and apply third angle theorem and angle-angle criterion in similar triangles.
	Unit Test	
Two- and Three-Dimensional Geometry		
	Circumference	
		Solve problems involving the circumference of a circle.
	Area of a Circle	
		Solve problems involving the area of a circle.

TX-Advanced Math 7		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Describe the relationship between the circumference and area of a circle.
	Area of Composite Figures	
		Solve problems involving the area of composite figures.
	Volume of Pyramids	
	Surface Area of Prisms	
		Calculate surface areas of rectangular and triangular prisms.
	Surface Area of Pyramids	
		Calculate surface area of rectangular and square pyramids.
	Surface Area and Volume of Triangular Pyramids	
		Solve problems involving the volume of triangular pyramids.
		Use a net to calculate the lateral and total surface area of a triangular pyramid.
	Applications with the Volume of a Cone	
		Find unknown dimensions of a cone given its volume.
		Solve a real-world problem utilizing the formula for volume of a cone.
	Surface Area and Volume of Cylinders	
		Solve mathematical and real-world problems involving the volume and surface area of cylinders.
	Spherical and Cubic Volume Applications	
		Apply volume formulas, including those that evaluate perfect cubes, to find unknown measurements.
		Recognize perfect cubes.
		Solve a real-world problem utilizing the formula for volume of a sphere.

TX-Advanced Math 7		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Unit Test	
Probability		
	Understanding Probability	
		Identify an event with a given probability as impossible, unlikely, likely, or certain.
		Describe the probability of an event as a number between 0 and 1, which represents the likelihood of the event.
		Use the fact that the sum of the probabilities of all possible outcomes is 1 to find the probabilities of complementary events.
	Experimental vs. Theoretical Probability	
		Compare experimental results to theoretical probabilities and make conjectures about the results.
		Explain possible sources of discrepancy between the theoretical and experimental probability of an event.
	Compound Events and Sample Space	
		Identify the sample space for an experiment involving compound events.
		Determine outcomes in a sample space that represents a given compound event.
	Probability of Compound Events	
		Find probabilities of independent compound events using organized lists, tables, or tree diagrams.
		Find probabilities of dependent compound events using organized lists, tables, or tree diagrams.
	Simulations to Estimate Probabilities	
		Design a simulation to experimentally determine the probability of compound events.
		Use a simulation to generate frequencies for compound events; e.g., use a coin to simulate the gender of a baby and find the experimental probability of having exactly 1 boy in a family of three children.
	Unit Test	

TX-Advanced Math 7	Scope and Sequence
Unit Lesson	**Objectives**
Drawing Inferences	
Sampling Methods	
	Compare a random sample to a biased sample in a variety of real-world contexts to determine validity.
	Identify and explain the process for choosing a random sample.
Inferences and Predictions	
	Make an inference about the whole population based on a sample by using proportional reasoning.
	Examine sample size and the effect on a prediction using the results of a simulation.
Multiple Samples	
	Use a simulation to generate multiple samples of the same size.
	Compare samples generated from simulations to draw an inference about a population.
Variation in Predictions and Estimates	
	Analyze the results of multiple samples by comparing the means of samples and populations.
	Describe variations in estimates or predictions of multiple samples.
Comparing Populations	
	Recognize the measure of center and variability to use when making comparisons.
	Draw informal comparative inferences using measures of center and variability.
Mean Absolute Deviation	
	Calculate the mean absolute deviation for a set of data.
	Interpret the mean absolute deviation of a set of data.
	Describe the impact of outliers on the mean absolute deviation.
Unit Test	
Cumulative Exam	

TX-Advanced Math 7		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Cumulative Exam Review	
	Cumulative Exam	