Pre Algebra

Strand	State Standard Area/Description	Unit Name	Course Topic Description
8.1. Core Content: Linear functions and equations (Algebra)	8.1.A Solve one-variable linear equations.	Equations	Solving Simple Equations
	8.1.B Solve one- and two-step linear inequalities and graph the solutions on the number line.		
	8.1.C Represent a linear function with a verbal description, table, graph, or symbolic expression, and make connections among these representations.	Equations	Linear Equations
	8.1.D Determine the slope and y-intercept of a linear function described by a symbolic expression, table, or graph.	Equations	Linear Equations
	8.1.E Interpret the slope and y-intercept of the graph of a linear function representing a contextual situation.	Equations	Linear Equations
	8.1.F Solve single- and multi-step word problems involving linear functions and verify the solutions.	Equations	Linear Equations
	8.1.G Determine and justify whether a given verbal description, table, graph, or symbolic expression represents a linear relationship.	Equations	Linear Equations
8.2. Core Content: Properties of geometric figures (Numbers, Geometry/Measurement)	8.2.A Identify pairs of angles as complementary, supplementary, adjacent, or vertical, and use these relationships to determine missing angle measures.		
	8.2.B Determine missing angle measures using the relationships among the angles formed by parallel lines and transversals.		
	8.2.C Demonstrate that the sum of the angle measures in a triangle is 180 degrees, and	Basic Geometry	Geometric Formulas

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	apply this fact to determine the sum of the angle measures of polygons and to determine unknown angle measures.		
	8.2.D Represent and explain the effect of one or more translations, rotations, reflections, or dilations (centered at the origin) of a geometric figure on the coordinate plane.	Geometric Concepts	Geometric Concepts
	8.2.E Quickly recall the square roots of the perfect squares from 1 through 225 and estimate the square roots of other positive numbers.	Basics	Exponents
	8.2.F Demonstrate the Pythagorean Theorem and its converse and apply them to solve problems.	Basic Geometry	Geometric Formulas
	8.2.G Apply the Pythagorean Theorem to determine the distance between two points on the coordinate plane.	Basic Geometry	Geometric Formulas
8.3. Core Content: Summary and analysis of data sets (Algebra, Data/Statistics/Probability)	8.3.A Summarize and compare data sets in terms of variability and measures of center.	Probability and Data Analysis	Probability
	8.3.B Select, construct, and analyze data displays, including box-and-whisker plots, to compare two sets of data.	Probability and Data Analysis	Probability
	8.3.C Create a scatterplot for a two-variable data set, and, when appropriate, sketch and use a trend line to make predictions.	Probability and Data Analysis	Probability
	8.3.D Describe different methods of selecting statistical samples and analyze the strengths and weaknesses of each method.	Probability and Data Analysis	Probability
	8.3.E Determine whether conclusions of statistical studies reported in the media are reasonable.		

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	8.3.F Determine probabilities for mutually exclusive, dependent, and independent events for small sample spaces.	Probability and Data Analysis	Probability
	8.3.G Solve single- and multi-step problems using counting techniques and Venn diagrams and verify the solutions		
8.4. Additional Key Content (Numbers, Operations)	8.4.A Represent numbers in scientific notation, and translate numbers written in scientific notation into standard form.	Decimals and Percents	Decimals
	8.4.B Solve problems involving operations with numbers in scientific notation and verify solutions.	Decimals and Percents	Decimals
	8.4.C Evaluate numerical expressions involving non-negative integer exponents using the laws of exponents and the order of operations.	Basics	Exponents
	8.4.D Identify rational and irrational numbers.		
8.5. Core Processes: Reasoning, problem solving, and communication	8.5.A Analyze a problem situation to determine the question(s) to be answered.	Word Problems	Strategies
	8.5.B Identify relevant, missing, and extraneous information related to the solution to a problem.	Word Problems	Strategies
	8.5.C Analyze and compare mathematical strategies for solving problems, and select and use one or more strategies to solve a problem.	Word Problems	Strategies
	8.5.D Represent a problem situation, describe the process used to solve the problem, and verify the reasonableness of the solution.	Word Problems	Translating English to Math
	8.5.E Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and	Word Problems	Translating English to Math

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	formal mathematical language.		
	8.5.F Apply a previously used problem-solving strategy in a new context.	Word Problems	Strategies
	8.5.G Extract and organize mathematical information from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.	Word Problems	Translating English to Math
	8.5.H Make and test conjectures based on data (or information) collected from explorations and experiments.	Probability and Data Analysis	Data Analysis Projects