STANDARDS Alabama State Course of Study Standards		CURRICULUM & INSTRUCTION		INTERVENTION
Critical Standards		A+ College Ready	SchoolsPLP	i-Ready
Number Systems and Operations				
Understand that the real number system is composed of rational and irrational numbers.	1. Define the real number system as composed of rational and irrational numbers.	1.9 Classifying the Real Number System		
	a. Explain that every number has a decimal expansion; for rational numbers, the decimal expansion repeats or terminates.	1.9 Classifying the Real Number System 1.10 Decimal Representations of Rational Numbers	Lesson 4 Rational Numbers	Expressing Fractions as Decimals* Rational and Irrational Numbers
	b. Convert a decimal expansion that repeats into a rational number.	1.11 Converting from Decimals to Fractions		
	2. Locate rational approximations of irrational numbers on a number line, compare their sizes, and estimate the values of the irrational numbers.	1.3 Approximating Square Roots 1.12 Classifying and Ordering Real Numbers	Lesson 6 Compare Order Rational Numbers	Rational and Irrational Numbers Approximating Irrational Numbers
Algebra and Functions				
Apply concepts of integer exponents and radicals.	3. Develop and apply properties of integer exponents to generate equivalent numerical and algebraic expressions.	11.1 Properties of Exponents		Properties of Integer Exponents
	4. Use square root and cube root symbols to represent solutions to equations.	1.1 Pythagorean Theorem and the Number System 1.7 Applying the Pythagorean Theorem 1.8 Applications of the Pythagorean Theorem		
	a. Evaluate square roots of perfect squares (less than or equal to 225) and cube roots of perfect cubes (less than or equal to 1000).	1.2 Solving Quadratic and Cubic Equations by Inspection 1.5 Practicing the Pythagorean Theorem		Square Roots and Cube Roots
	b. Explain that the square root of a non-perfect square is irrational.			
	5. Estimate and compare very large or very small numbers in scientific notation.	5.2 Scientific Notation		Scientific Notation
	6. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.	11.3 Operations with Numbers in Scientific Notation		
	a. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities.	11.4 Applications of Scientific Notation		Operations with Numbers Expressed in Scientific Notation
	b. Interpret scientific notation that has been generated by technology.	11.5 Scientific Notation in Context		
Analyze the relationship between proportional and non-proportional situations.	7. Determine whether a relationship between two variables is proportional or non-proportional.	3.1 nterpreting Expressions 3.2 Solving Equations 3.3 Matching Equations and Real-World Scenarios 5.1 Proportional Relationships 5.6 Domino Effect 5.7 Stacking Cups		
	8. Graph proportional relationships.			
	a. Interpret the unit rate of a proportional relationship, describing the constant of proportionality as the slope of the graph which goes through the origin and has the equation y = mx where m is the slope.	5.1 Proportional Relationships		Representing Proportional Relationships
	9. Interpret y = mx + b as defining a linear equation whose graph is a line with m as the slope and b as the y-intercept.	5.7 Stacking Cups 5.9 Graphing Full Body Style 5.10 Writing the Equation of a Line in Slope Intercept Form	Lesson 22 Applying Functions Lesson 166 Linear Functions Lesson 167 Linear Function Equation	
	a. Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in a coordinate plane.	5.3 Counting for Slope 5.5 Finding Slope From Two Coordinate Points		Linear Functions* Linear Equations and Slope
	b. Given two distinct points in a coordinate plane, find the slope of the line containing the two points and explain why it will be the same for any two distinct points on the line.	5.2 Introduction to Slope 5.4 Calculating Average Rate of Change 5.5 Finding Slope From Two Coordinate Points 5.10 Writing the Equation of a Line in Slope Intercept Form		
	c. Graph linear relationships, interpreting the slope as the rate of change of the graph and the y-intercept as the initial value.	5.6 Domino Effect 5.7 Stacking Cups 5.8 Graphing with Tables 5.9 Graphing Full Body Style		
	d. Given that the slopes for two different sets of points are equal, demonstrate that the linear equations that include those two sets of points may have different y-intercepts.	5.11 Slopes of Parallel Lines		
	10. Compare proportional and non-proportional linear relationships represented in different ways (algebraically, graphically, numerically in tables, or by verbal descriptions) to solve real-world problems.	5.12 Comparing Linear Functions		
Analyze and solve linear	11. Solve multi-step linear equations in one variable, including rational number coefficients, and equations that require using the distributive property and combining like terms.			Solving Linear Equations with Rational Coefficients
	a. Determine whether linear equations in one variable have one solution, no solution, or infinitely many solutions of the form x = a, a = a, or a = b (where a and b are different numbers).	6.5 One Solution, No Solution, Infinitely Many Solutions		Solving Linear Equations
	b. Represent and solve real-world and mathematical problems with equations and interpret each solution in the context of the problem.	6.2 Solving Equations with Variables on Both Sides 6.3 Solving Equations with Variables on Both Sides 6.4 Structured Practice for Solving Equations with Variables on Both Sides		
	12. Solve systems of two linear equations in two variables by graphing and substitution.		Lesson 15 Ordered Pairs	

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equations and systems of two linear equations.		7.1 Introduction to Systems of Equations 7.2 Teacher Led Instruction: What's the Point? 7.3 Teacher Led Instruction: Solving Systems Graphically 7.4 Introduction to Substitution 7.5 Teacher Led Instruction: Substitution Practice and Solving Equations using the Distributive Property 7.6 Applications of Systems of Equations 7.7 Find the Better Deal		Systems of Linear Equations Solving Systems of Linear Equations Algebraically*
	a. Explain that the solution(s) of systems of two linear equations in two variables corresponds to points of intersection on their graphs because points of intersection satisfy both equations simultaneously.			
	b. Interpret and justify the results of systems of two linear equations in two variables (one solution, no solution, or infinitely many solutions) when applied to real-world and mathematical problems.	7.3 Teacher Led Instruction: Solving Systems Graphically 7.5 Teacher Led Instruction: Substitution Practice and Solving Equations using the Distributive Property 7.6 Applications of Systems of Equations 7.7 Find the Better Deal	Lesson 15 Is It a Solution	Solving Linear Equations with Rational Coefficients
	13. Determine whether a relation is a function, defining a function as a rule that assigns to each input (independent value) exactly one output (dependent value), and given a graph, table, mapping, or set of ordered pairs.	4.1 Function/Not a Function 4.3 Connecting a Verbal Description to Table and Graph 4.5 Use Tables and Graphs to Determine the Better Deal		
Explain, evaluate, and compare functions.	14. Evaluate functions defined by a rule or an equation, given values for the independent variable.	4.5 Use Tables and Graphs to Determine the Better Deal		
	15. Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions.	4.3 Connecting a Verbal Description to Table and Graph 4.4 Rule of 4 4.5 Use Tables and Graphs to Determine the Better Deal	Lesson 168 Compare Linear Function	
	a. Distinguish between linear and non-linear functions.	4.6 Defining Linear and Non-Linear Functions		
	16. Construct a function to model a linear relationship between two variables.	7.1 Introduction to Systems of Equations 4.2 Dependent and Independent Variables		
	a. Interpret the rate of change (slope) and initial value of the linear function from a description of a relationship or from two points in a table or graph.	10.4 Water Tanks and Sand Piles 4.4 Rule of 4		
Use functions to model relationships between quantities.		4.5 Use Tables and Graphs to Determine the Better Deal		
	17. Analyze the relationship (increasing or decreasing, linear or non-linear) between two quantities represented in a graph.	4.6 Defining Linear and Non-Linear Functions 5.13 Water Park 5.14 Qualitative Descriptions 8.5 Analyzing Categorical Data 8.6 Does Gender Make a Difference? 8. 7 Structured Practice: Two Way Tables	Lesson 17 Graphing on a Coordinate Plane Lesson 170 Sketch Graph of Function Lesson 169 Analyzing a Function	Systems of Linear Equations Solving Systems of Linear Equations Algebraically
Data Analysis, Statistics, and Probability				
	18. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities, describing patterns in terms of positive, negative, or no association, linear and non-linear association, clustering, and outliers.	8.1 Teacher Led Instruction: Barbie Bungee -- Introduction to Scatter Plots 8.3 Analyzing Scatterplots 8.4 Monopoly -- Spaces from Go vs. Rent	Topic: Scatter Plots Lesson 160	Scatter Plots
	19. Given a scatter plot that suggests a linear association, informally draw a line to fit the data, and assess the model fit by judging the closeness of the data points to the line.	8.1 Teacher Led Instruction: Barbie Bungee -- Introduction to Scatter Plots 8.3 Analyzing Scatterplots 8.4 Monopoly -- Spaces from Go vs. Rent		Linear Models
Investigate patterns of association in bivariate data.	20. Use a linear model of a real-world situation to solve problems and make predictions.	8.1 Teacher Led Instruction: Barbie Bungee -- Introduction to Scatter Plots 8.3 Analyzing Scatterplots 8.4 Monopoly -- Spaces from Go vs. Rent		
	a. Describe the rate of change and y-intercept in the context of a problem using a linear model of a real-world situation.	8.1 Teacher Led Instruction: Barbie Bungee -- Introduction to Scatter Plots 8.3 Analyzing Scatterplots 8.4 Monopoly -- Spaces from Go vs. Rent		Problem Solving with Linear Models
	21. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects, using relative frequencies calculated for rows or columns to describe possible associations between the two variables.			Associations Between Two Categorical Variables
Geometry and Measurement				
	22. Verify experimentally the properties of rigid motions (rotations, reflections, and translations): lines are taken to lines, and line segments are taken to line segments of the same length; angles are taken to angles of the same measure; and parallel lines are taken to parallel lines.	10.2 Surface Area & Volume	Topic: Transformations Lesson(s): 71-86	Properties of Translations and Reflections Properties of Rotations
	a. Given a pair of two-dimensional figures, determine if a series of rigid motions maps one figure onto the other, recognizing that if such a sequence exists the figures are congruent; describe the transformation sequence that verifies a congruence relationship.	2.1 Introduction to Transformations		Properties of Translations and Reflections Properties of Rotations
Understand congruence and similarity using physical models or technology.	23. Use coordinates to describe the effect of transformations (dilations, translations, rotations, and reflections) on two-dimensional figures.	2.2 Translations & Reflections on the Coordinate Plane 2.3 Reflections on the Coordinate Plane 2.4 Dilations		Properties of Translations and Reflections Properties of Rotations
	24. Given a pair of two-dimensional figures, determine if a series of dilations and rigid motions maps one figure onto the other, recognizing that if such a sequence exists the figures are similar; describe the transformation sequence that exhibits the similarity between them.	2.5 Representing and Combining Transformations		Properties of Dilations
Analyze parallel lines cut by a transversal	25. Analyze and apply properties of parallel lines cut by a transversal to determine missing angle measures.	9.3 Parallel Lines, Transversals and Angles 9.4 Parallel Lines, Transversals and Angles Practice		Geometric Properties involving Angles

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by a transversal.	a. Use informal arguments to establish that the sum of the interior angles of a triangle is 180 degrees.	9.1 Sum of the Interior Angles of a Triangle 9.2 Additional Practice with Angles of a Triangle		The Pythagorean Theorem
	26. Informally justify the Pythagorean Theorem and its converse.	1.4 Discovering the Pythagorean Theorem		The Pythagorean Theorem
Understand and apply the Pythagorean Theorem.	27. Apply the Pythagorean Theorem to find the distance between two points in a coordinate plane.	1.6 Using the Pythagorean Theorem to Find the Distance between Two Points	Lesson 18 Distance Between Points	Applications of the Pythagorean Theorem
	28. Apply the Pythagorean Theorem to determine unknown side lengths of right triangles, including real-world applications	1.5 Practicing the Pythagorean Theorem 1.7 Applying the Pythagorean Theorem 1.8 Applications of the Pythagorean Theorem		The Pythagorean Theorem
Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres. *Note: Students must select and use the appropriate unit for the attribute being measured when determining length, area, angle, time, or volume.*	29. Informally derive the formulas for the volume of cones and spheres by experimentally comparing the volumes of cones and spheres with the same radius and height to a cylinder with the same dimensions.	10.1 Solids of Revolution 10.2 Volumes of Cones, Cylinders, and Spheres		Volume of Cylinders, Cones, and Spheres
	30. Use formulas to calculate the volumes of three-dimensional figures (cylinders, cones, and spheres) to solve real-world problems.	10.1 Solids of Revolution 10.2 Volumes of Cones, Cylinders, and Spheres 10.3 Applications of Volume 10.4 Water Tanks and Sand Piles		Volume of Cylinders, Cones, and Spheres