Alabama Course of Study, Grade 8, Correlated to *Glencoe Pre-Algebra*

Alabama Course of Study, Grade 8	Student Edition Lesson
Number and Operations	
1-0. Use various strategies and operations to solve problems involving real numbers.	
1-1. Use alternative representations of rational numbers.	5-1, 5-2, 6-4
1-2. Apply GCF, LCM, and prime and composite numbers, including justification for the reasonableness of results, when working with rational numbers.	4-3, 4-4, 4-5, 5-3, 5-6, 5-7, 6-1
1-3. Apply proportional reasoning.	6-2, 6-2b, 6-3, 6-5, 9-7
1-4. Use vocabulary associated with sets, including union and intersection.	2-1, 4-4, 9-2
1-5. Determine whether a number is rational or irrational.	9-2
1-6. Demonstrate computational fluency with operations on rational numbers.	5-3, 5-4, 5-5, 5-7, Prerequisite Skills pp. 712-717
2-0. Simplify expressions containing natural number exponents by applying one or more of the laws of exponents.	4-6, 4-7, 4-8
2-1. Write numbers using scientific notation.	4-8
3-0. Use order of operations to evaluate and simplify algebraic expressions.	
3-1. Apply the substitution principle.	1-2, 1-3, 2-1, 2-3, 2-4, 2-5, 4-2
3-2. Apply the properties of operations on rational numbers to evaluate and simplify algebraic expressions.	1-3, 1-4, 3-2, 4-2, 13-2, 13-3, 13-4
Algebra (ALG)	
4-0. Graph linear relations by plotting points or by using the slope and *y*-intercept.	
4-1. Determine slopes and y-intercepts of lines.	8-3, 8-4a, 8-4, 8-5a, 8-5, 8-6
4-2. Calculate the slope of a linear relation given as a table or graph.	8-4, 8-5
4-3. Exhibit conceptual understanding of various uses of variables.	1-3, 1-6, 2-6, 3-6, 3-7, 8-2, 8-3
5-0. Solve problems involving linear functions.	
5-1. Identify functions from information in tables, sets or ordered pairs, equations, graphs, and mappings.	8-2a, 8-2, 8-3, 8-6, 8-7, 8-9
5-2. Determine the rule that defines a function.	8-1, 8-2a, 8-2
5-3. Classify variables in a function as independent or dependent.	8-1a
5-4. Classify relations as linear or nonlinear by examining tables, graphs, or simple equations.	8-1, 8-2, 13-5

6-0. Solve multistep linear equations, including equations requiring the use of the distributive property.*	3-5, 3-6, 7-1a, 7-1, 7-2
Geometry (GEO)	
7-0. Solve problems using the Pythagorean Theorem.*	
7-1. Apply the Triangle Inequality Theorem.	
7-2. Verify the Pythagorean Theorem.	9-5a
7-3. Apply the Pythagorean Theorem to determine if a triangle is a right triangle.*	9-5
7-4. Apply the Pythagorean Theorem to find the missing length of a side of a right triangle.*	9-5
7-5. Calculate distance on the coordinate plane using the Pythagorean Theorem.*	9-6
8-0. Compare quadrilaterals, triangles, and solids, using their properties and characteristics.	
8-1. Develop mathematical arguments about the relationships among types of quadrilaterals and triangles.	9-4, 10-4
8-2. Identify angle bisectors, perpendicular bisectors, congruent angles, and congruent figures.	9-7, 10-1b, 10-2
8-3. Construct congruent and similar polygons, congruent angles, congruent segments, and parallel and perpendicular lines.	10-1b, 10-3b
Measurement (MEA)	
9-0. Determine the measures of special angle pairs, including adjacent, vertical, supplementary, and complementary angles, and angles formed by parallel lines cut by a transversal.	10-1
10-0. Find the perimeter and area of regular and irregular plane figures.*	3-7, 3-7b, 5-2, 5-9, 8-2, 10-5a, 10-5, 10-8
11-0. Determine the surface area and volume of rectangular prisms, cylinders, and pyramids.	
11-1. Estimate surface area and volume of solid figures.	11-2, 11-3
11-2. Determine the appropriate units of measure to describe surface area and volume.	11-2, 11-3, 11-4, 11-5
11-3. Develop formulas for determining surface area and volume of rectangular prisms, cylinders, and pyramids.	11-2, 11-3, 11-4, 11-5
12-0. Determine the lengths of missing sides and measures of angles in similar and congruent figures.*	
12-1. Apply proportional reasoning.	9-7
12-2. Use dilations on the coordinate plane to determine measures of similar figures.	10-3b
12-3. Find the ratios of the perimeters and areas of similar triangles, trapezoids, and parallelograms.	11-6
Data Analysis and Probability (DAP)	
13-0. Interpret data from populations, using given and collected data.	
13-1. Represent the data with the most appropriate graph, including box-and-whisker plot, circle graph, and scatterplot.	12-1, 12-2, 12-3, 12-3b, 12-4, 12-4b, 12-5

* Topic covered on Alabama High School Graduation Exam

13-2. Make predictions by estimating the line of best fit from a scatterplot.	1-7, 1-7b, 8-8, 9-3b
13-3. Compare data sets involving two populations.	12-3, 12-3b, 12-4, 12-4b, 12-5
13-4. Determine the measure of center that is the most appropriate for a given situation.*	5-8a, 5-8,5-8b
14-0. Determine the theoretical probability of an event.*	
14-1. Calculate the probability of complementary events and mutually exclusive events.	12-9
14-2. Compare experimental and theoretical probability.	6-9, 12-9b
14-3. Compute the probability of two independent events and two dependent events.	12-9
14-4. Determine the probability of an event through simulation.	6-9b, 12-9b

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SAT 10 Objectives are addressed by the Alabama Course of Study Standards that are listed above.