



Alabama Achievement Level Descriptors

Grade 7 – Mathematics

The descriptions below provide a brief summary of typical performance for each level. The skills identified in each descriptor represent, but are not all-inclusive of, the skills a student should be able to demonstrate at each achievement level.

	Level 1: Emerging Learner	Level 2: Developing Learner	Level 3: Proficient Learner	Level 4: Distinguished Learner
Ratios and Proportional Relationships	<ul style="list-style-type: none"> ▪ Recognizes that proportional relationships are relationships between two equal ratios. ▪ Computes simple unit rates. ▪ Determines whether two quantities are in a proportional relationship from a graph. ▪ Determines the unit rate for data presented in a table. 	<ul style="list-style-type: none"> ▪ Solves simple problems in context, given the equation of the proportional relationship that models the situation. ▪ Determines whether two quantities are in a proportional relationship from a graph or equation. ▪ Determines the constant of proportionality from tables, diagrams, and/or graphs. 	<ul style="list-style-type: none"> ▪ Computes unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units. ▪ Determines whether two quantities are in a proportional relationship and represents proportional relationships with equations. ▪ Identifies the constant of proportionality in tables, graphs, diagrams, and descriptions of scenarios. ▪ Explains 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. 	<ul style="list-style-type: none"> ▪ Uses proportional relationships to solve problems, including those involving rates, discounts, and finding percentages and justifies conclusions. ▪ Makes sense of quantities and their relationships. ▪ Creates equivalent proportional equations that could be used to solve the same ratio/percent problem in context.

Alabama Achievement Level Descriptors

Grade 7 – Mathematics



The descriptions below provide a brief summary of typical performance for each level. The skills identified in each descriptor represent, but are not all-inclusive of, the skills a student should be able to demonstrate at each achievement level.

	Level 1: Emerging Learner	Level 2: Developing Learner	Level 3: Proficient Learner	Level 4: Distinguished Learner
Ratios and Proportional Relationships			<ul style="list-style-type: none"> ▪ Solves multi-step problems in contexts that require creating an equation to model the situation, including those involving proportions, ratios, and percentages. 	<ul style="list-style-type: none"> ▪ Makes sense of problems and perseveres in solving multi-step problems and justifies conclusions.



Alabama Achievement Level Descriptors

Grade 7 – Mathematics

The descriptions below provide a brief summary of typical performance for each level. The skills identified in each descriptor represent, but are not all-inclusive of, the skills a student should be able to demonstrate at each achievement level.

	Level 1: Emerging Learner	Level 2: Developing Learner	Level 3: Proficient Learner	Level 4: Distinguished Learner
The Number System	<ul style="list-style-type: none"> ▪ Uses a number line to model addition and subtraction with negative and positive whole numbers. ▪ Multiplies or divides rational numbers using a number line. 	<ul style="list-style-type: none"> ▪ Describes real-world situations that involve positive and negative rational quantities. ▪ Recognizes that the sum of a number and its opposite equals zero. ▪ Uses a number line to model addition and subtraction with negative and positive rational numbers. ▪ Solves mathematical problems involving the four operations with rational numbers using a number line or other manipulatives. 	<ul style="list-style-type: none"> ▪ Adds and subtracts rational numbers, using the standard algorithm representing addition and subtraction on number lines and justifying solutions. ▪ Describes scenarios where opposites combine to make 0. ▪ Interprets sums of rational numbers by describing real-world contexts. ▪ Recognizes subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. ▪ Solves multi-step real-world problems involving all four operations with rational numbers, including negative numbers. 	<ul style="list-style-type: none"> ▪ Uses the properties of rational numbers to explain and defend their mathematical thinking. ▪ Solves problems involving operations with rational numbers, including those requiring the use of algebraic formulas. ▪ Explains and demonstrates the steps involved to rewrite expressions using the properties of operations including the distributive property. ▪ Creates a story problem that models a given expression or equation.



Alabama Achievement Level Descriptors

Grade 7 – Mathematics

The descriptions below provide a brief summary of typical performance for each level. The skills identified in each descriptor represent, but are not all-inclusive of, the skills a student should be able to demonstrate at each achievement level.

	Level 1: Emerging Learner	Level 2: Developing Learner	Level 3: Proficient Learner	Level 4: Distinguished Learner
The Number System			<ul style="list-style-type: none"> ▪ Explains that the distance between two rational numbers on the number line is the absolute value of their difference. ▪ Recognizes that If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$ and interprets quotients of rational numbers by describing real-world contexts. ▪ Applies the properties of operations to problems involving all four operations with rational numbers in mathematical and real-world problems. 	<ul style="list-style-type: none"> ▪ Interprets products and quotients of rational numbers in a real-world context and justifies conclusions.



Alabama Achievement Level Descriptors

Grade 7 – Mathematics

The descriptions below provide a brief summary of typical performance for each level. The skills identified in each descriptor represent, but are not all-inclusive of, the skills a student should be able to demonstrate at each achievement level.

	Level 1: Emerging Learner	Level 2: Developing Learner	Level 3: Proficient Learner	Level 4: Distinguished Learner
Expressions and Equations	<ul style="list-style-type: none"> ▪ Solves one-step algebraic equations with whole numbers. ▪ Recognizes and uses the structure of algebraic equations to solve simple equations using inverse operations. ▪ Identifies some equivalent expressions. 	<ul style="list-style-type: none"> ▪ Solves one-step algebraic equations posed with fractions. ▪ Rewrites some expressions in a different form. ▪ Identifies equivalent expressions. 	<ul style="list-style-type: none"> ▪ Adds, subtracts, factors, and expands linear expressions with rational coefficients. ▪ Recognizes that rewriting an expression in different forms can assist in solving the problem and shows how the quantities in it are related. ▪ Solves multi-step algebraic equations posed with integers, fractions, and decimals. ▪ Uses variables to represent quantities in a real-world or mathematical problem, and constructs simple equations and inequalities to solve problems. ▪ Solves word problems leading to two-step equations and inequalities. 	<ul style="list-style-type: none"> ▪ Analyzes errors in a problem with a real-world context. ▪ Reasons quantitatively by making sense of quantities and considering the units involved. ▪ Decontextualizes by selecting an inequality that represents a situation symbolically. ▪ Creates equivalent expressions and explains the key terms and factors of the problem for each expression.



Alabama Achievement Level Descriptors

Grade 7 – Mathematics

The descriptions below provide a brief summary of typical performance for each level. The skills identified in each descriptor represent, but are not all-inclusive of, the skills a student should be able to demonstrate at each achievement level.

	Level 1: Emerging Learner	Level 2: Developing Learner	Level 3: Proficient Learner	Level 4: Distinguished Learner
Geometry	<ul style="list-style-type: none"> ▪ Identifies two-dimensional figures that result from slicing three-dimensional figures given a visual model. ▪ Sets up simple proportions to solve problems involving scaled lengths and actual lengths. ▪ Selects, sketches, or draws freehand, geometric figures with given conditions. ▪ Determines the area of a rectangle. ▪ Identifies right prisms. 	<ul style="list-style-type: none"> ▪ Recognizes some quadrilaterals from a description of their characteristics. ▪ Recognizes the difference between area and perimeter/circumference. ▪ Determines the volume of a rectangular prism. ▪ Recognizes the structure of quadrilaterals. ▪ Makes sense of characteristics of quadrilaterals and circles (area, circumference, and perimeter). ▪ Uses knowledge about supplementary, complementary, vertical, and adjacent angles to solve simple problems without writing equations. 	<ul style="list-style-type: none"> ▪ Solves problems involving scale drawings. ▪ Draws geometric shapes with given conditions. ▪ Constructs triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. ▪ Describes the two-dimensional figures that result from slicing three-dimensional figures. ▪ Solves real-life and mathematical problems involving angle measure, area, surface area, and volume. ▪ Uses knowledge about supplementary, complementary, vertical, and adjacent angles to solve multi-step problems and write equations to solve for an unknown angle. 	<ul style="list-style-type: none"> ▪ Uses properties of interior angles for polygons to determine unknown angle measures. ▪ Solves real-world and word problems involving the area and circumference of a circle, and area of irregular figures composed of rectangles in a scale drawing. ▪ Solves multi-step problems involving surface area and volume. ▪ Solves geometric problems involving area and volume when extraneous information is given.



Alabama Achievement Level Descriptors

Grade 7 – Mathematics

The descriptions below provide a brief summary of typical performance for each level. The skills identified in each descriptor represent, but are not all-inclusive of, the skills a student should be able to demonstrate at each achievement level.

	Level 1: Emerging Learner	Level 2: Developing Learner	Level 3: Proficient Learner	Level 4: Distinguished Learner
Geometry			<ul style="list-style-type: none">▪ Solves problems involving the area and circumference of a circle and area of parallelograms, trapezoids, and triangles.▪ Determines the surface area of a rectangular prism.▪ Uses formulas to model area, circumference, surface area, and volume.	<ul style="list-style-type: none">▪ Uses the properties of a rectangular prism to determine the length of a side, given its surface area.▪ Shows a range of ability in explaining or arguing how to determine the surface area and volume of any right prism.▪ Uses the structure of composite geometric shapes to see that they are composed of several shapes.



Alabama Achievement Level Descriptors

Grade 7 – Mathematics

The descriptions below provide a brief summary of typical performance for each level. The skills identified in each descriptor represent, but are not all-inclusive of, the skills a student should be able to demonstrate at each achievement level.

	Level 1: Emerging Learner	Level 2: Developing Learner	Level 3: Proficient Learner	Level 4: Distinguished Learner
Statistics and Probability	<ul style="list-style-type: none"> ▪ Recognizes that the probability of a chance event is between 0 and 1, with larger numbers indicating greater likelihood. ▪ Approximates probabilities of simple events. ▪ Determines the sample space for compound events. ▪ Draws simple conclusions from data. 	<ul style="list-style-type: none"> ▪ Recognizes that a random sample produces the most valid representation of the entire population. ▪ Draws inferences and makes predictions about a population from data. ▪ Examines a frequency summary to determine the approximate probability of defined outcomes. ▪ Uses basic measures of central tendency to compare two different populations. ▪ Identifies the probability of a chance event as likely, equally likely, or unlikely. 	<ul style="list-style-type: none"> ▪ Uses random sampling to draw inferences about a population. ▪ Recognizes that random sampling tends to produce representative samples and support valid inferences. ▪ Informally assesses the degree of visual overlap between two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. ▪ Uses measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. ▪ Recognizes that probability is a number between 0 and 1 and that it expresses likelihood. 	<ul style="list-style-type: none"> ▪ Compares and contrasts probabilities from a frequency model with theoretical and experimental probability for the event. ▪ Calculates probability for 2-step experiments with and without replacement or repetition of values. ▪ Makes predictions about conclusions that can be made by sampling particular populations and justifies predictions. ▪ Draws conclusions from random sampling about a population or two populations. ▪ Develops and uses probability models.

Alabama Achievement Level Descriptors

Grade 7 – Mathematics



The descriptions below provide a brief summary of typical performance for each level. The skills identified in each descriptor represent, but are not all-inclusive of, the skills a student should be able to demonstrate at each achievement level.

	Level 1: Emerging Learner	Level 2: Developing Learner	Level 3: Proficient Learner	Level 4: Distinguished Learner
Statistics and Probability			<ul style="list-style-type: none"> ▪ Approximates the probability by collecting data and observing long-run frequencies. ▪ Compares the probabilities of two or more events. ▪ Develops probability models and use to determine probabilities. ▪ Uses a tree diagram to find the probability of compound events. ▪ Recognizes the difference between experimental and theoretical probability. 	<ul style="list-style-type: none"> ▪ Compares the probabilities of two or more events and justifies the likelihood of each event. ▪ Compares and connects the relative frequency of an event to the theoretical probability of the event.