Performance Level Descriptors

Mathematics

Grade 7

DATA RECOGNITION
DRC
CORPORATION

Performance Level Descriptors (PLDs)

	Level 1	Level 2	Level 3	Level 4
Policy Statement	The student has a minimal understanding of grade-level standards and needs additional support at this level of learning as described in the Alabama Course of Study.	The student has a partial understanding of grade-level standards and is likely to need some additional support at this level of learning as described in the Alabama Course of Study.	The student has a strong understanding of grade-level standards and demonstrates the knowledge and skills at this level of learning as described in the Alabama Course of Study.	The student has an advanced understanding of grade-level standards and exceedingly demonstrates the knowledge and skills at this level of learning as described in the Alabama Course of Study.

The performance level descriptors describe what a typical student scoring at each performance level can do. A student who scores at a level would be expected to also be able to demonstrate the skills described in previous levels. A student would not necessarily demonstrate all the skills listed at a particular performance level on a particular test in order to score at that level.

Proportional Reasoning

| 7.PR.1 7.PR.2 7.PR.2a 7.PR.2b 7.PR.2c 7.PR.3 | **A student at this level**

• determines whether two quantities are in a proportional relationship. | **A student at this level**

• calculates unit rates that include ratios or fractions,

• identifies specified points on the graph of a proportional relationship and interprets their meaning, and

• uses proportional reasoning to solve simple percent problems. | **A student at this level**

• identifies the constant of proportionality (unit rate) in context and expresses it using multiple representations,

• explains the meaning of the points $(0, 0)$ and $(1, r)$ on the graph of a proportional relationship where r is the unit rate, and

• uses proportional reasoning to solve multi-step percent problems. | **A student at this level**

• understands that proportional relationships can have different constants of proportionality and

• analyzes and interprets numerical and symbolic proportional relationships. |

Number Systems and Operations

| 7.NSO.4
7.NSO.4a
7.NSO.4b
7.NSO.4c
7.NSO.4d
7.NSO.4e
7.NSO.4f
7.NSO.4g
7.NSO.5 | **A student at this level**

• understands that a number and its opposite have a sum of 0. | **A student at this level**

• adds and subtracts integers using a number line,

• multiplies and divides integers, and

• uses addition, subtraction, multiplication, and division to solve real-world and mathematical problems involving positive fractions and decimals. | **A student at this level**

• applies properties to add and subtract rational numbers and interprets sums of rational numbers in real-world contexts;

• applies properties to multiply and divide rational numbers and interprets products and quotients of rational numbers in real-world contexts;

• converts a rational number to a decimal using long division; and

• uses addition, subtraction, multiplication, and division to solve real-world and mathematical problems involving rational numbers. | **A student at this level**

• applies understanding of all four operations with rational numbers to solve multi-step real-world problems, using fractions and decimals interchangeably, including translating among multiple representations of rational numbers. |

Algebra and Functions

7.AF.6 7.AF.7 7.AF.8 7.AF.9 7.AF.9a 7.AF.9b	**A student at this level** • identifies when expressions with integer coefficients are equivalent.	**A student at this level** • uses properties of operations to generate equivalent expressions with integer coefficients, • writes and solves multi-step, one-variable equations involving integers, and • writes and solves multi-step, one-variable inequalities involving integers and graphs the solution set on a number line.	**A student at this level** • uses properties of operations to generate equivalent expressions with rational coefficients, • writes and solves multi-step, one-variable equations involving rational numbers, and • writes and solves multi-step, one-variable inequalities involving rational numbers and graphs the solution set on a number line.	**A student at this level** • uses multiple properties of operations to strategize and generate equivalent expressions with rational coefficients and • uses variables to represent quantities in multi-step word problems, knowing when to use an equation or inequality to represent a solution.

Data Analysis, Statistics, and Probability				
7.DSP.10 7.DSP.10a 7.DSP.10b 7.DSP.10c 7.DSP.10d 7.DSP.10e 7.DSP.11 7.DSP.12 7.DSP.13 7.DSP.14 7.DSP.14a 7.DSP.14b 7.DSP.15 7.DSP.15a 7.DSP.16 7.DSP.16a 7.DSP.16b 7.DSP.16c	**A student at this level** • differentiates between populations and samples; • distinguishes between valid and invalid samples; • understands probability as quantifiable between 0 and 1; and • understands that the probability of a compound event is a fraction of desired outcomes in the sample space.	**A student at this level** • uses data from a random sample to generalize information about a population, • approximates simple probability, and • represents a sample space for compound events using various methods.	**A student at this level** • uses data from a random sample and numeric measures (including mean absolute deviation) to draw comparative inferences about two populations, • develops a probability model, uses it to find or approximate probabilities of events, and compares the model to observed frequencies, and • determines probabilities of compound events.	**A student at this level** • develops, uses, and evaluates multiple probability models and • designs and uses a simulation to generate frequencies for compound events.

Geometry and Measurement

7.GM.17 7.GM.18 7.GM.19 7.GM.20 7.GM.20a 7.GM.20b 7.GM.21 7.GM.22	A student at this level	A student at this level	A student at this level	A student at this level
	• identifies the scale factor of a model;	• solves problems involving length with scale drawings;	• solves problems involving length and area with scale drawings and reproduces a scale drawing at a different scale;	• interprets a scale drawing as a proportional relationship and a scale factor as a constant of proportionality and
			• understands when given angle measures and/or side lengths determine a unique triangle, more than one triangle, or no triangle;	
		• describes two-dimensional plane sections of geometric figures that are parallel or perpendicular to bases;	• describes two-dimensional plane sections of geometric figures;	
	• identifies the center, radius, diameter, and circumference of a circle;	• uses formulas to find the exact (using π) or approximate (using 3.14) area and circumference of a circle;	• solves real-world and mathematical problems using the area and circumference of a circle;	• interprets the relationship between the circumference and diameter of a circle as a proportional relationship and π as the constant of proportionality.
	• identifies complementary, supplementary, vertical, and adjacent angles; and	• knows properties of complementary, supplementary, vertical, and adjacent angles; and	• solves multi-step problems involving complementary, supplementary, vertical, and adjacent angles, including writing and solving equations for an unknown angle; and	

	• calculates the area of already-decomposed two-dimensional objects.	• calculates the surface area and volume of already-decomposed three-dimensional objects.	• solves real-world and mathematical problems involving the area, volume, and surface area of two- and three-dimensional objects.	