Achievement Level Descriptors

Grade 7 Mathematics

Achievement Levels and Achievement Level Descriptors

With the implementation of the Missouri Learning Standards (MLS) educators have developed four achievement levels to describe student mastery and command of the knowledge and skills outlined in the MLS content expectations. Most students have at least some knowledge of the content described in the content expectations; however, achievement levels succinctly describe how much mastery a student has. Achievement levels give meaning and context to scale scores by describing the knowledge and skills students must demonstrate to achieve each level.

The four achievement levels on MLS are Below Basic, Basic, Proficient and Advanced. The general meaning of each of the four levels is provided below:

Below Basic students **do not yet demonstrate proficiency** in the knowledge and skills necessary at this grade level/course of learning, as specified in the MLS. The students ***need substantial academic support*** to be prepared for the next grade level or course and to be on track for college and career readiness.

Basic students **demonstrate partial proficiency** in the knowledge and skills necessary at this grade level/course of learning, as specified in the MLS. The students ***need additional academic support*** to ensure success in the next grade level or course and to be on track for college and career readiness.

Proficient students **demonstrate proficiency** in the knowledge and skills necessary at this grade level/course of learning, as specified in the MLS. The students ***are prepared*** for the next grade level or course and are on track for college and career readiness.

Advanced students **demonstrate advanced proficiency** in the knowledge and skills necessary at this grade level/course of learning, as specified in the MLS. The students ***are well prepared*** for the next grade level or course and are well prepared for college and career readiness.

More detailed and content-specific concepts and skills are provided for each grade, content area, and course in the **Achievement Level Descriptors** (ALDs). ALDs are narrative descriptions of the knowledge and skills expected at each of the four achievement levels and were developed for each grade level, content area, and course. The ALDs are based on the state-adopted content expectations.

ALDs show a *progression of knowledge and skills* for which students must demonstrate competency across the achievement levels. It is important to understand that a student should demonstrate mastery of the knowledge and skills within his/her achievement level *as well as all content and skills in any achievement levels that precede his/her own, if any*. For example, a Proficient Learner should also possess the knowledge and skills of a Below Basic and Basic student.

Grade 7

ALD	Domain	Below Basic	Basic	Proficient	Advanced
Policy		Below Basic do not yet demonstrate proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in content expectations. These students need substantial academic support to be prepared for the next grade level or course and to be on track for *college and career readiness.*	Basic demonstrate partial proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in content expectations. These students need additional academic support to ensure success in the next grade level or course and to be on track for *college and career readiness.*	Proficient demonstrate proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in content expectations. These students are prepared for the next grade level or course and are on track for *college and career readiness.*	Advanced demonstrate advanced proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in content expectations. These students are well prepared for the next grade level or course and are well prepared for *college and career readiness.*
		A student who achieves at the Below Basic level demonstrates minimal command of the grade-level expectations.	A student who achieves at the Basic level demonstrates partial command of the grade-level expectations.	A student who achieves at the Proficient level demonstrates proficiency of the grade-level expectations.	A student who achieves at the Advanced level demonstrates advanced proficiency of the grade-level expectations.
Range	**Ratios and Proportional Relationships**	Uses unit rates to complete a table of values, and plots points on a Cartesian coordinate plane.	Determines proportional relationships, and calculates a percentage to solve given problems.	Uses unit rates and proportional relationships to solve problems, determines the constant of proportionality to write and graph equations, and solves word problems with percentages.	Analyzes and interprets numeric and symbolic proportional relationships and uses them to solve complex multistep problems by comparing rates and ratios, and communicates the relationship between the unit rate and the graph in a context.
	The Number System	Calculates values using the four operations on positive rational numbers.	Calculates values using the four operations on rational numbers, and converts a fraction to a decimal.	Applies properties as strategies to manipulate rational numbers, and solves word problems involving rational numbers.	Interprets and communicates the properties of negative numbers with respect to the properties of operations on rational numbers.

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ALD	Domain	Below Basic	Basic	Proficient	Advanced
Range	Expressions and Equations	Solves a given single-step equation.	Solves a given two-step equation or inequality with rational numbers.	Creates equivalent expressions, and writes and solves multistep rational number word problems that involve equations and inequalities.	Uses multiple properties of operations to strategize and generate equivalent expressions and to solve complex multistep word problems with rational coefficients, uses variables to represent quantities in complex multistep word problems with equations and inequalities requiring multistep solutions, and interprets solutions in a context.
	Geometry	Draws and describes specific polygons with labeled vertices and identifies their sides and angles; and identifies the vertices, edges, and faces of a rectangular prism.	Constructs a specific geometric figure, such as a line, polygon, circle, or solid, and describes a relationship between its sides and angles; describes the vertices, edges, and faces of a rectangular prism and describes its surface area as the sum of the areas of its six rectangular faces; and calculates the area and circumference of circles given the formulas.	Describes geometric figures and the relationships between them; represents two-dimensional cross sections of three-dimensional figures; and writes and solves mathematical problems involving scale drawings, angle measure, area, surface area, circumference and volume.	Creates and analyzes geometric figures and compares their general properties; and solves complex multistep problems involving plane sections, area, surface area, and volume of composite polygons and solids.
	Statistics and Probability	Distinguishes between populations and samples, understands probability as a number between 0 and 1, and understands samples can be used to gain information about a population.	Calculates simple probability, compares experimental and theoretical probabilities, uses random sampling to draw inferences about a population, and understands likelihood on a continuum of 0 to 1.	Uses random sampling to draw comparative inferences about two populations; explains why samples are used in statistics; develops, uses, and evaluates probability models; and uses a variety of tools to find probabilities of compound events.	Uses multiple samples to draw inferences about a population; draws interpretive comparative inferences about multiple populations; communicates the relationship between experimental and theoretical probabilistic reasoning; interprets the information from a data display; designs simulations to generate frequency data; and develops, uses, and evaluates multiple probability models.