Achievement Level Descriptors

Grade 4 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.

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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	**Operations and Algebraic Thinking**	Solves given single-step problems by adding, subtracting, and multiplying; finds factor pairs to 24; and identifies the next number or shape in a pattern.	Solves given problems involving the four operations, finds all factor pairs to 48, and generates a number or shape pattern.	Solves word problems that involve variables and the four operations, interprets remainders in the context of the problem, finds all factor pairs and identifies prime and composite numbers to 100, and generates the rule for a number and shape patterns.	Interprets multiplication as a comparison and distinguishes it from addition comparisons, assesses the reasonableness of solutions in multiple ways, recognizes that composite numbers are built from the products of primes, and analyzes patterns.
	Number and Operations – Base Ten	Uses place value to read and write numbers, adds and subtracts up to three digit numbers, and multiplies a four-digit number by a one-digit number.	Compares numbers, adds and subtracts multi-digit numbers, and finds products and quotients.	Explains the place value system, compares numbers with appropriate symbols, uses place value to round numbers, and uses place value and properties of operations to explain the four operations on whole numbers.	Interprets the four operations on whole numbers with equations and visual models.

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ALD	Domain	Below Basic	Basic	Proficient	Advanced
Range	Number and Operations – Fractions	Multiplies fractions, and uses decimal notation for fractions with denominator of 10 or 100.	Decomposes fractions based on unit fractions, and multiplies fractions by whole numbers.	Understands and uses fraction equivalence, compares fractions, adds and subtracts fractions and mixed numbers with like denominators, solves word problems with fractions and mixed numbers, and compares decimals to the hundredths.	Interprets fractional equivalence based on the same whole, uses visual models to represent operations on fractions, and finds equivalent fractions with denominators 10 and 100.
	Measurement and Data	Knows the relative sizes of measurement units, identifies data from line plots in whole-number units, and recognizes angles.	Converts units of measurement using multiplication, solves one step problems with units, calculates the area and perimeter of rectangles, draws line plots to represent data in whole-number units, and measures angles in degrees.	Solves multi-step problems in measurement conversion using the four operations and the application of formulas, draws line plots to represent data in fractions of a unit, solves two-step problems involving interpretation of data, constructs angles, and solves addition and subtraction word problems involving angles.	Interprets the reasons for converting measurement units in a context, relates the use and measurement of angles to the circle, and solves multistep problems involving interpretation of data.
	Geometry	Identifies two-dimensional shapes, and recognizes shapes with symmetry.	Draws points, lines, and angles and identifies them in two-dimensional shapes; and recognizes lines of symmetry.	Constructs points, lines, line segments, rays, angles, and parallel and perpendicular lines and identifies them in two-dimensional shapes; classifies two-dimensional shapes based on the presence of geometric characteristics; identifies right triangles; identifies symmetry in two-dimensional shapes; and draws lines of symmetry.	Defines, and interprets points, lines, line segments, rays, angles, and parallel and perpendicular lines and represents them in two-dimensional shapes; and uses symmetry to analyze two dimensional shapes.