Performance Level Descriptors – Grade 5 Mathematics

PLD	Domain	Below Basic	Basic	Proficient	Advanced
Reporting		**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. 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 demonstrate partial proficiency in the knowledge and skills** necessary at this grade level/course of learning, as specified in content expectations. 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 demonstrate proficiency in the knowledge and skills** necessary at this grade level/course of learning, as specified in content expectations, and uses clear and precise language when communicating mathematical understanding. The 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. The students are well prepared for the next grade level or course and are well prepared for *college and career readiness.*
		A student who performs at the **Below Basic** level demonstrates minimal command of the grade-level expectations.	A student who performs at the **Basic** level demonstrates partial command of the grade-level expectations.	A student who performs at the **Proficient** level demonstrates proficiency of the grade-level expectations.	A student who performs at the **Advanced** level demonstrates advanced proficiency of the grade-level expectations.
Range	**Relationships and Algebraic Thinking**	Represents and describes a numeric pattern; Solves one-step problems involving whole numbers.	Evaluates numeric expressions; generates a numeric pattern from a given rule; connects written expressions with algebraic expressions; Graphs numeric patterns; Solves one-step problems involving whole numbers, fractions and/or decimals.	Evaluates and interprets numeric expressions using order of operations; represents situations with algebraic expressions; compares two numeric patterns in tables and by graphing; describes the relationship between two numeric patterns; solves and justifies multi-step problems involving whole numbers, fractions and/or decimals; determines the reasonableness of solutions in problems involving variables	Reason abstractly and quantitatively when analyzing numeric and algebraic expressions; construct and analyze arguments based on a generated rule from a numeric pattern; critique the reasoning of solutions generated in multi-step problems;

	Number and Operations In Base Ten	Identifies and rounds numbers from millions to hundredths using place value understanding; Identifies powers of ten using whole number exponents; finds sums, differences, and products of whole numbers	Reads, writes, and rounds numbers from billions to thousandths using place value understanding; compares numbers from billions to thousandths; represents powers of ten using whole number exponents; finds sums, differences, products, and quotients (single digit divisors) of multi-digit numbers.	Reasons quantitatively about the directional characteristics of place value (a digit represents 1/10times what it would represent in the place to its left); reasons both contextually and abstractly when comparing and rounding numbers from billions to thousandths valuates powers of ten using whole number exponents through repeated reasoning; justifies sums, differences, products, and quotients of multi-digit numbers.	Generates and analyzes multiple equivalent representations with multi-digit numbers; uses repeated reasoning to make relationship conjectures about number quantities involving exponents; analyzes rounding errors.

Range	**Number and Operations In Fractions**	Compare fractions and/or decimals; represents equivalency between fractions and decimals when given a model; adds and subtracts fractions and mixed numbers when given visual fraction models and/or equations; calculates products by multiplying fractions.	Order fractions and/or decimals; connects fractions and decimals using part to whole relationship; adds, subtracts and multiplies fractions using visual fraction models and equations; solves one-step problems with fractions; calculates and estimates products by multiplying fractions by a whole number	Justify the ordering of fractions and/or decimals; converts between fractions and decimals using part to whole relationship; performs operations and solves problems with fractions and decimals using mathematical models; solves problems involving addition and subtraction of fractions with unlike denominators and justifies the reasonableness of solutions; calculate and interpret products of fractions; solves problems with areas of rectangles with fractional side lengths; demonstrates the relationship of multiplication and division of fractions versus whole number operations; represents the division of fractions by dividing unit fractions by whole numbers and dividing whole numbers by unit fractions using visual fraction models and equations.	Analyzes the reasoning of others by interpreting operations of fractions and decimals; Calculates and compares the areas of rectangles with fractional side lengths; justifies the mathematical reasoning of others by interpreting division of fractions by dividing unit fractions by whole numbers and dividing whole numbers by unit fractions.

	Geometry and Measurement	Calculates one-step conversions from a larger unit to a smaller unit; recognizes the differences between perimeter, area, and volume; plots points on the Cartesian coordinate plane and identifies two- dimensional figures; identifies the properties of prisms and pyramids.	Calculates one-step conversions within a system; calculates the volume of rectangular prisms; creates shapes based on properties using the Cartesian coordinate plane; classifies shapes according to their attributes; describes the properties of prisms and pyramids.	Makes sense of multi-step problems by reasoning abstractly and quantitatively when applying conversions within a system; calculates and represents and volume as an attribute of three-dimensional objects; generates and uses a first quadrant Cartesian coordinate plane to solve problems; determines common attributes and categorize figures by hierarchy based on properties; analyzes the properties of prisms and pyramids.	Compares the volume of three-dimensional figures to justify solutions; reasons abstractly and quantitatively to find missing side lengths with a given volume; interprets information presented on a Cartesian coordinate plane in the context of real-world applications; analyzes hierarchies to organize figures in multiple ways; compares properties of prisms and pyramids.
	Data and Statistics	Distinguishes between a line plot and line graph; recognizes outliers given a line plot.	Creates line plots and line graphs; analyzes line graphs to make predictions; recognizes outliers and median.	Reasons abstractly and quantitatively to analyze data and to explain relationships in line plots and line graphs; generates outliers and median to answer questions and solve problems.	Critiques the reasoning of others' representations of data and data use in making decisions; analyzes multiple characteristics of line plots and line graphs.