2014 Mathematics Grade 3 Performance Level Descriptors

Level	Basic	Proficient	Advanced
Policy Level Descriptors	Marginal academic performance, work approaching, but not yet reaching, satisfactory performance, indicating partial understanding and limited display of the knowledge and skills included in the Wyoming Content and Performance Standards.	Satisfactory academic performance indicating a solid understanding and display of the knowledge and skills included in the Wyoming Content and Performance Standards.	Superior academic performance indicating an in-depth understanding and exemplary display of the knowledge and skills included in the Wyoming Content and Performance Standards.
Domain	**Operations and Algebraic Thinking**		
Range PLD: Cluster A - Represent and solve problems involving multiplication and division.	Basic students interpret products and quotients of whole numbers (2, 5, 10) using a pictorial representation (3.OA.1, 3.OA.2);	Proficient students interpret products and quotients of whole numbers in mathematical and real-world contexts (3.OA.1);	Advanced students write products and quotients in mathematical and real-world contexts;
	Basic students use multiplication within 100 to solve and represent word problems provided a pictorial representation (3.OA.3);	Proficient students use multiplication and division within 100 to solve and represent word problems provided a pictorial representation (3.OA.3);	Advanced students use multiplication and division within 100 to solve and represent word problems (3.OA.3);
	Basic students determine the product or quotient in an equation given one of the factors to be 2, 5, or 10 (3.OA.4).	Proficient students determine the unknown whole number in a multiplication or division equation given the other two facts (3.OA.4).	Advanced students interpret two or more equations each with an unknown number in a multiplication or division equation (3.OA.4).
Range PLD: Cluster B - Understand properties of multiplication and the relationship between multiplication and division.	Basic students use the commutative property of multiplication to find the product of familiar numbers, e.g. 1, 2, 5, and 10 (3.OA.5);	Proficient students use the associative property to multiply two or more numbers (3.OA.5);	Advanced students use the distributive property to multiply two numbers (3.OA.5);
	Basic students use multiplication to find a missing factor in a division equation (3.OA.6).	Proficient students use division to find a missing factor in a multiplication equation (3.OA.6).	Advanced students use division to find unknown factors given a verbal context (3.OA.6).
Range PLD: Cluster C - Multiply and divide within 100.	Basic students multiply with factors of 2, 5, and 10 and divide with divisors of 2 or 5 within 50 (3.OA.7);	Proficient students fluently multiply two numbers with factors of 10 or less and divide two numbers with both the divisor and quotient being 10 or less (3.OA.7);	Advanced students fluently multiply two numbers within 100 with one factor greater than 10 and one factor less than 10 and divide two numbers within 100 with either a divisor or quotient greater than 10 (3.OA.7);
	Basic students identify the relationship between multiplication and division in a mathematical context (3.OA.7).	Proficient students describe the relationship between multiplication and division (3.OA.7).	Advanced students justify the relationship between multiplication and division (3.OA.7).
Range PLD: Cluster D - Solve problems involving the four operations and identify and explain patterns in arithmetic.	Basic students solve two-step word problems involving only addition and subtraction (3.OA.8);	Proficient students solve and represent as an equation a two-step real-world or mathematical problem using the four operations (3.OA.8);	Advanced students solve and represent as an equation a two-step real-world or mathematical problem involving the four operations and assess the reasonableness of answers (3.OA.8);
	Basic students predict the next term of a pattern described by an addition or a subtraction rule (3.OA.9).	Proficient students predict any term of a pattern and create a rule to describe the pattern (3.OA.9).	Advanced students identify a characteristic of a pattern that is not explicitly given (3.OA.9).

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Domain	**Number and Operations-Base Ten**		
Range PLD: Cluster E - Use place value understanding and properties of arithmetic to perform multi-digit arithmetic.	Basic students round to the nearest 10 (3.NBT.1);	Proficient students round to the nearest 100 (3.NBT.1);	Advanced students round to the nearest 1,000;
	Basic students add/subtract within 100 (3.NBT.2);	Proficient students add/subtract two or more whole numbers whose sum or difference is less than 1,000 using strategies and algorithms based on place value and properties of operations (3.NBT.2);	Advanced students add/subtract two or more whole numbers whose sum or difference is greater than 1,000 using the relationship between addition and subtraction, place value, or properties of operations (3.NBT.2);
	Basic students multiply one digit (2 or 5) by multiples of 10 (3.NBT.3).	Proficient students multiply one digit whole numbers by multiples of 10 in the range of 10-90 (3.NBT.3).	Advanced students multiply 2-digit whole numbers (less than 20) by multiples of 10.
Domain	**Number and Operations-Fractions**		
Range PLD: Cluster F - Develop understanding of fractions as numbers.	Basic students identify a fraction in the form of a/b given a and b (3.NF.1);	Proficient students understand a fraction $1/b$ as a quantity formed by one part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$ (3.NF.1);	Advanced students represent either a fractional model or a fraction as the sum of unit fractions (3.NF.1);
	Basic students identify and represent fractions with denominators of 2 or 4 on a number line (3.NF.2);	Proficient students identify and represent fractions with denominators of 3, 6, or 8 on a number line (3.NF.2);	Advanced students explain that each part on a number line has a size of $1/b$ and that each interval has the same size (3.NF.2);
	Basic students identify two fractions as equivalent given the same numerators and same denominators (3.NF.3);	Proficient students identify equivalent fractions provided a model or point(s) on a number line (3.NF.3);	Advanced students explain that two fractions are not equivalent because the fractions compare different wholes; determine if two fractions are equivalent (3.NF.3);
	Basic students identify a fraction in the form a/a that is equivalent to 1 (3.NF.3);	Proficient students represent a whole number and a fraction as equivalent; identify a fraction in the form $a/1$ that is equivalent to a (3.NF.3);	Advanced students understand that a/b is a whole number if a is a multiple of b when a does not equal b (3.NF.3);
	Basic students compare, using words, two fractions with a common numerator or denominator provided a model of each fraction (3.NF.3).	Proficient students, given a model, compare two fractions with a common numerator or denominator using the symbols (<, >, or =) (3.NF.3).	Advanced students justify the comparison of two fractions with common numerators or denominators (3.NF.3).

Level	Basic	Proficient	Advanced
Domain	**Measurement and Data**		
Range PLD: Cluster G - Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	Basic students identify the time from an analog/digital clock to the nearest five minutes (3.MD.1);	Proficient students solve real-world or mathematical problems with addition/subtraction involving elapsed time to the nearest minute (3.MD.1);	Advanced students solve addition/subtraction real-world or mathematical problems of elapsed time involving "regrouping" (3.MD.1);
	Basic students solve one-step problems involving liquid volumes and masses using addition and subtraction (3.MD.2).	Proficient students estimate and solve one-step problems involving liquid volumes and masses using the four operations (3.MD.2).	Advanced students solve one-step problems involving liquid measures and masses using the four operations requiring reading a measurement off of a scaled measurement tool (3.MD.2).
Range PLD: Cluster H - Represent and interpret data.	Basic students read data from a picture graph or bar graph (3.MD.3);	Proficient students interpret data from a picture graph or bar graph and solve problems (3.MD.3);	Advanced students compare data from a picture graph or bar graph to solve multi-step problems (3.MD.3);
	Basic students identify an appropriate line plot using only whole numbers given data (3.MD.4).		Advanced students create a line plot using a fraction scale.
Range PLD: Cluster I - Geometric measurement: understand the concepts of area and relate area to multiplication and to addition.	Basic students recognize that a square labeled with 1 square unit can be used to measure area (3.MD.5);	Proficient students determine the area of a rectangle by counting unit squares in a tiled rectangle (3.MD.6);	
		Proficient students determine the area of a rectangle by multiplying length times width in both mathematical and real-world contexts (3.MD.7);	Advanced students solve for the side of a rectangle by dividing the area by the other side; use area models to show that $a\,(b+c)=(a \times b)+(a \times c)$ (3.MD.7);
	Basic students recognize that two rectangles can fit into a larger rectangle (3.MD.7).	Proficient students solve for the area of a figure by decomposing the figure into two non-overlapping rectangles (3.MD.7).	Advanced students solve for the area of a figure by decomposing the figure into three or more non-overlapping rectangles (3.MD.7).
Range PLD J - Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	Basic students solve for the perimeter of a polygon given all of the side lengths (3.MD.8).	Proficient students solve for the perimeter of a rectangle given the length and width; find one unknown side length of a polygon when given the perimeter in mathematical or real-world contexts (3.MD.8).	Advanced students compare the perimeters and areas of rectangles (3.MD.8).

Level	Basic	Proficient	Advanced
Domain	**Geometry**		
Range PLD: Cluster K - Reason with shapes and their attributes.	Basic students identify a rectangle or square as a quadrilateral (3.G.1).	Proficient students identify a category for a quadrilateral given its attributes (3.G.1);	Advanced students compare two or more quadrilaterals according to their shared attributes (3.G.1);
		Proficient students identify a figure partitioned into equal parts and represent each part as a unit fraction (3.G.2).	Advanced students compare partitioned figures (3.G.2).