**Virginia Standards of Learning Assessment**

**Grade 4 Mathematics Performance Level Descriptors**

| **Fail/Below Basic** | **Fail/Basic** | **Pass/Proficient** | **Pass/Advanced** |
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| A student performing at this level should be able to:*Reporting Category 1: Number and Number Sense** identify whole numbers, fractions, and decimals using concrete materials
* name comparison symbols (<, >, =)
* round a whole number to the greatest place value

*Reporting Category 2: Computation and Estimation** add and subtract aligned whole numbers and decimals without regrouping
* add fractions with like denominators

*Reporting Category 3: Measurement and Geometry** recognize units of measure
* identify time on a digital and an analog clock
* determine the perimeter or area of a rectangle given a figure with measurements
* identify concrete models of cubes, cones, cylinders, points, lines, line segments, rays, and angles
* identify figures that are squares and figures that are not squares

*Reporting Category 4: Probability, Statistics, Patterns, Functions, and Algebra** identify events that are "certain" and "impossible" to occur
* identify a bar graph and a line graph
* identify repeating patterns using models or concrete materials
* identify that an equation must have an equal sign
 | A student performing at this level should be able to:*Reporting Category 1: Number and Number Sense** identify place and value of digits in whole numbers and decimals
* round and compare whole numbers
* use models to compare decimals or fractions
* identify the fraction bar as a division symbol

*Reporting Category 2: Computation and Estimation** recall basic multiplication facts up to 10x10
* add and subtract decimals that are aligned
* determine factors and multiples of a number
* add and subtract fractions with like denominators

*Reporting Category 3: Measurement and Geometry** measure objects for length, weight, mass, and liquid volume
* determine elapsed time in hours given beginning and ending times
* identify squares and rectangles
* determine perimeter or area of a given square or rectangle with measurements
* identify solid geometric figures, points, lines, line segments, rays, and angles from pictures
* identify parallel, perpendicular, and intersecting lines

*Reporting Category 4: Probability, Statistics, Patterns, Functions, and Algebra** identify an event’s likelihood
* match a probability event represented in a picture to its fraction
* equate "0" with an impossible event and "1" with a certain event
* construct and display data in bar graphs and line graphs
* match data to graphs
* identify and extend repeating patterns using models
* determine if two numerical expressions are equal
 | A student performing at this level should be able to:*Reporting Category 1: Number and Number Sense** read, write, round, compare, and order:
	+ whole numbers,
	+ decimals,
	+ fractions, and
	+ mixed numbers
* represent fraction/fraction and fraction/decimal equivalence
* relate fractions to division

*Reporting Category 2: Computation and Estimation** recall basic multiplication and division facts
* add, subtract, multiply, and divide whole numbers to estimate and solve single-step and multistep practical problems
* add and subtract decimals to estimate and solve single-step and multistep practical problems
* add and subtract fractions to estimate and solve single-step and multistep practical problems
* find common multiples and factors of two numbers, including:
	+ least common multiple and
	+ greatest common factor

*Reporting Category 3: Measurement and Geometry** find area and perimeter of rectangles and squares
* estimate measures
* measure objects
* solve practical problems given unit measure involving:
	+ length,
	+ weight,
	+ mass, and
	+ liquid volume
* find elapsed time in hours and minutes
* describe and contrast characteristics of solid and plane geometric figures
* classify quadrilaterals

*Reporting Category 4: Probability, Statistics, Patterns, Functions, and Algebra** describe outcomes of events

represent probability using: * + words,
	+ fractions,
	+ number lines, and
	+ models
* construct, organize, and interpret bar graphs and line graphs
* compare representations of the same data
* recognize and extend numerical and pictorial patterns
* demonstrate equality in equations
 | A student performing at this level should be able to:*Reporting Category 1: Number and Number Sense** apply place value relationships and fraction and decimal equivalence to solve problems involving:
	+ rounding,
	+ comparing, and
	+ ordering

with:* whole numbers,
* decimals,
* fractions, and
* mixed numbers
* use fraction/decimal and fraction/fraction equivalence to solve problems
* use division statements and fractions interchangeably to:
	+ create,
	+ represent, and
	+ solve problems

*Reporting Category 2: Computation and Estimation** apply mathematical properties to create and solve single-and multistep practical problems with:
	+ whole numbers,
	+ decimals, and
	+ fractions
* find least common multiple and greatest common factor of a set of numbers

*Reporting Category 3: Measurement and Geometry** solve practical area and perimeter problems
* apply equivalent measures to solve practical problems involving:
	+ length,
	+ weight,
	+ mass, and
	+ liquid volume
* solve practical problems involving elapsed time
* compare, contrast, and create representations of solid and plane figures
* compare and contrast quadrilaterals

*Reporting Category 4: Probability, Statistics, Patterns, Functions, and Algebra** evaluate experiments to determine and represent probability using:
	+ likelihood,
	+ fractions,
	+ number lines,
	+ models, and
	+ practical problems
* analyze different representations of the same data to solve problems
* analyze and extend numerical patterns
* represent equivalent relationships in equations
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