7th Grade Benchmarks
Mathematics

Level 5 – Student performance exceeds year-end standard   Level 4 – Student performance meets year-end standard
Level 3 – Student performance approaches year-end standard   Level 2 – Student demonstrates limited performance to year-end standard
Level 1 – Student does not yet evidence understanding or application of skills related to year-end standard
NOTE: MPI and MPII performance levels are determined based on performance expectations at the time of reporting

Student Performance Standard	Level 1 Below	Level 2 Limited	Level 3 Approaches	Level 4 Meets	Level 5 Exceeds
Ratios and Proportional Relationships:					
Analyze proportional relationships and use them to solve real world and mathematical problems.	Identifies direct proportions from tables, graphs, and verbal descriptions with support.	Identifies direct proportions from tables, graphs, and verbal descriptions independently.	Computes whole number proportionality constants and identifies proportional relationships in equations.	Represents and analyzes proportional relationships with fractional unit rates; uses unit rates to solve one-step problems with rational numbers; analyzes a proportional relationship graph to explain its unit rate and uses this rate to solve problems.	Solves real-world problems involving proportional relationships and measurement conversions in a contextual scenario.
The Number System:					
Apply understanding of operations with fractions to rational numbers.	Performs all operations on nonnegative rational numbers with scaffolding.	Performs all operations on nonnegative rational numbers.	Adds and subtracts all rational numbers and uses properties of addition and subtraction to combine opposites; converts between familiar fractions and decimals.	Solves mathematical problems using all operations; converts between fractions and decimals; understands and applies the rules of additive inverses; multiplies and divides signed numbers.	Applies understanding of operations on rational numbers to solve real-world problems.
Expressions and Equations:					
Add, subtract, factor and expand linear expressions.	Adds and subtracts linear expressions with integer coefficients with prompting and	Adds and subtracts linear expressions with integer coefficients by combining like terms.	Adds and subtracts linear expressions with rational coefficients; factors and expands linear	Expands and factors expressions with rational coefficients.; simplifies and rewrites expressions to	Uses all additive and multiplicative properties and simplifies expressions to solve real-world

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	support.		expressions with integer coefficients.	problem-solve in familiar context.	problems.
Solve real world and mathematical problems using numerical and algebraic expressions and equations.	Solves multi-step numerical expressions with integer coefficients with prompting and support.	Solves multi-step numerical expressions with integers and common fractions and decimals to the hundredth place; solves equations and inequalities in slope-intercept form with integer coefficients.	Solves multi-step numerical expressions with rational coefficients; solves equations and inequalities in slope-intercept form with rational coefficients; writes simple equations with scaffolding.	Solves and graphs inequalities in one variable; uses variables to represent and reason real-world and mathematical solutions; creates equations with variables to solve problems.	Writes and solves equations and inequalities to solve real-world problems; constructs inequalities in more than one variable to solve problems.
Geometry:					
Draw, construct and describe geometric figures and relationships between them.	Draws geometric shapes with given conditions by hand, with a ruler and protractor, and by using technology in a scaffolded problem setting.	Draws geometric shapes with given conditions by hand, with a ruler and protractor, and by using technology independently.	Describes geometric figures with given conditions; determines whether a set of three angles or three sides results in one or two triangles, or none at all; finds scale factors to compare and describe relationships between figures.	Computes dimensions of actual shapes from their scaled drawings and reproduces scaled drawings using different scales; describes two-dimensional figures that result from slicing prisms and pyramids by planes that are parallel to a face.	Describes two-dimensional figures that result from slicing cones, spheres, cylinders, and other three-dimensional figures with rectangular or triangular faces by non-parallel planes.
Solve real world and mathematical problems involving angle measure, area, surface area and volume.	Identifies formulas for the area and circumference of a circle, triangle, and rectangle, and the volume of cubes with prompting.	Recalls formulas for area and circumference of a circle; calculates areas of triangles and rectangles and volumes of cubes; classifies pairs of angles as supplementary, complementary, vertical, or adjacent.; measures angles with appropriate tools.	Uses supplementary, complementary, vertical, or adjacent angles to find missing measurements in degrees; calculates the circumference and area of a circle; calculates areas of quadrilaterals and polygons and the volume of right rectangular prisms.	Uses supplementary, complementary, vertical, or adjacent angles to solve two-step problems expressed in degrees; solves problems involving area and circumference of circles; solves problems involving area of polygons and surface area of three-dimensional prisms and pyramids; solves	Solves problems involving surface area and volume of three-dimensional figures with polygonal faces; uses knowledge of angles to solve multi-step problems with angle measures expressed as variables in degrees.

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Statistics and Probability:

Use random sampling to draw comparative inferences about populations.	Identifies representative samples, identifies bias, and uses means with support.	Describes what a representative sample entails and identifies biased and unbiased samples of a population; uses means to compare populations.	Determines whether or not a sample is random and representative and will produce valid results; uses data to draw obvious inferences; uses range and visual overall of two data distributions.	Uses data from a random sample to draw inferences about a population with an unknown characteristic of interest. Informally assesses visual overlap of two data sets; measures the difference between centers in context.	Generates multiple samples of the same size to gauge the variation in estimates or predictions. Measures and uses variability of data sets to draw comparative inferences about two populations.
Investigate chance processes and develop, use and evaluate probability models.	Understands that probabilities are numbers between 0 and 1 and that probability around ½ indicates an event that is as likely as not with guidance.	Determines theoretical probability of a simple event; understands that probabilities are numbers between 0 and 1.	Approximates the probability of an event by collecting data on the chance process that produces it and observes long run relative frequency; predicts approximate relative frequency given the probability.	Finds probabilities of compound events using lists, tables, tree diagrams, and simulation; compares theoretical and experimental results from an experiment.	Designs, describes, and constructs a simulation experiment to generate frequencies of compound events; explains what might account for differences between theoretical and experimental results; evaluates probability models.

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