

CHECK LIST FOR SIXTH GRADE MATHEMATICS CHECKS FOR UNDERSTANDING

✓	date	Checks for Understanding
		Standard 1 – Mathematical Processes
		0606.1.1 Recognize different conventions used in calculator and computer spreadsheets (e.g., * for multiplication, ^ for exponent), but use mathematical notation in written work.
		0606.1.2 Recognize when an estimate is more appropriate than an exact answer in a variety of problem situations.
		0606.1.3 Recognize errors generated by rounding.
		0606.1.4 Describe how changes in one quantity or variable result in changes in another.
		0606.1.5 Illustrate properties of operations by showing that two expressions are equivalent in a given context (e.g., using an area model for distributive property, and grouping/set models for commutative and associative properties).
		0606.1.6 Model situations by devising and carrying out experiments and simulations.
		0606.1.7 Formulate questions, design studies, and collect real world data.
		0606.1.8 Determine an appropriate sample to test an hypothesis.
		0606.1.9 Use age-appropriate books, stories, and videos to convey ideas of mathematics.
		0606.1.10 Use various methods (such as dynamic geometry software) to explore properties of triangles and quadrilaterals.
		0606.1.11 Model algebraic expressions with manipulatives, technology, and pencil and paper.
		Standard 2 – Number & Operations
		0606.2.1 Efficiently compare and order fractions, decimals and percents; determine their approximate locations on a number line.
		0606.2.2 Use area models to represent multiplication of fractions.
		0606.2.3 Create and solve contextual problems that lead naturally to division of fractions.
		0606.2.4 Understand ratio as a fraction used to compare two quantities by division.
		0606.2.5 Recognize a:b, a/b, and "a to b" as notations for ratios.
		0606.2.6 Recognize common percentages as ratios based on fractions whose denominators are 2, 3, 4, 5, or 10.
		0606.2.7 Connect ratio and rate to multiplication and division.
		0606.2.8 Recognize that a terminating decimal equals a fraction with a denominator that is a power of ten.
		0606.2.9 Recognize that the decimal form of a rational number either terminates or repeats.
		0606.2.10 Explore contexts that can be described with negative numbers (such as money, elevation, and temperature).
		Standard 3 – Algebra
		0606.3.1 Write and solve two-step linear equations corresponding to given situations (non-negative numbers only).
		0606.3.2 Write and solve one-step inequalities corresponding to given situations (non-negative numbers only).
		0606.3.3 Recognize the use of juxtaposition (such as 3x, ab) to stand for multiplication, and the convention in these cases of writing numbers before letters.
		0606.3.4 Generate data and graph relationships concerning measurement of length, area, volume, weight, time, temperature, money, and information.
		0606.3.5 Use the commutative, associative and distributive properties to show that two expressions are equivalent.
		0606.3.6 Use equations to describe simple relationships shown in a table or graph.
		0606.3.7 Move fluently between different representations (such as verbal, tabular, numerical, algebraic, and graphical) of equations and expressions.
		0606.3.8 Represent patterns using words, graphs, and simple symbolic notation.
		0606.3.9 Write a contextual story modeled by a given graph.
		0606.3.10 Understand that in an ordered pair (x, y), the x represents horizontal location and y represents vertical location.
		0606.3.11 Identify the quadrant of the coordinate system in which a point lies.
		Standard 4 – Geometry & Measurement
		0606.4.1 Investigate the sum of the angles in a triangle and a quadrilateral using various methods.
		0606.4.2 Relate the sum of the angles in a triangle to the sum of the angles in polygons.
		0606.4.3 Verify the basic properties of triangles and quadrilaterals using a protractor and ruler.
		0606.4.4 Classify triangles by side lengths (scalene, isosceles, and equilateral) and angle measure (acute, right, obtuse, isosceles and equiangular).
		0606.4.5 Model and use the Triangle Inequality Theorem.

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	0606.4.6 Use the properties of interior and exterior angles of polygons to solve problems.
	0606.4.7 Work with transformations in a plane and explore their meanings through drawings and manipulatives.
	0606.4.8 Understand scaling, dilation and their relation to similarity.
	0606.4.9 Analyze the differences between congruence and similarity.
	0606.4.10 Describe the effect of a transformation on a 2-dimensional figure and the resulting symmetry.
	0606.4.11 Relate the circumference of a circle with the perimeter of a polygonal figure.
	0606.4.12 Derive the meaning of Pi using concrete models and/or appropriate technology.
	0606.4.13 Understand the relationships among the radius, diameter, circumference and area of a circle, and that the ratio of the circumference to the diameter is the same as the ratio of the area to the square of the radius, and that this ratio is called Pi.
	0606.4.14 Relate the area of a trapezoid to the area of a parallelogram.
	0606.4.15 Find lengths given areas or volumes, and vice versa.
	0606.4.16 Solve contextual problems involving area and circumference of circles, surface areas and volumes of prisms, pyramids, cones, and cylinders.
	0606.4.17 Use manipulatives to discover the volume of a pyramid is one-third the volume of the related prism (the heights and base areas are equal).
	0606.4.18 Use manipulatives to discover the volume of a cone is one-third the volume of the related cylinder (the heights and base areas are equal).
	Standard 5 – Data Analysis, Statistics, & Probability
	0606.5.1 Understand that the probability of an event is a number between zero and one that expresses the likelihood of its occurrence.
	0606.5.2 Identify the probability of an event as the ratio of the number of its actual occurrences to the total number of its possible occurrences.
	0606.5.3 Express probabilities in different ways.
	0606.5.4 Understand the difference between probability and odds.
	0606.5.5 Analyze a situation that involves probability of an independent event.
	0606.5.6 Estimate the probability of simple and compound events through experimentation or simulation.
	0606.5.7 Apply procedures to calculate the probability of complimentary events.
	0606.5.8 Connect data sets and their graphical representations (such as bar graphs, circle, graphs, and stem-and-leaf plots).
	0606.5.9 Determine the sample space for a given situation.
	0606.5.10 Distinguish between a random and nonrandom sample.
	0606.5.11 Select the appropriate measure of center to describe a data set.
	0606.5.12 Predict the characteristics of a population based on the analysis of sample data.