

Eads Elementary School Math Standards 6th Grade

MATH STANDARD #1

Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Ref.	Expectation	P	PP	NI	US
6.1.a	Locate fractions, mixed numbers, decimals through thousandths, and percents on the number line.				
6.1.b	Locate integers on the number line.				
6.1.c	Identify subsets of integers.				
6.1.d	Demonstrate the equivalence of commonly-used fractions, decimals, and percents.				
6.1.e	Pictorially, demonstrate the meaning of square roots of perfect square numbers through 100				
6.1.f	Read, write, and order positive rational numbers including fractions and decimals through thousandths.				
6.1.g	Compare positive fractions and decimals using the symbols =, ', <, and >.				
6.1.h	Write the prime factorization of whole numbers in exponential form..				
6.1.i	Write whole numbers in expanded form with powers to ten.				
6.1.j	Write large numbers using scientific notation.				
6.1.k	Demonstrate the divisibility rules for 2, 3, 5, 6, 9, and 10.				
6.1.l	Determine the greatest common factor and least common multiple of a pair of whole numbers.				
6.1.m	Represent fractions, decimals, and percents as ratios.				
6.1.n	Demonstrate the similarities and differences between ratios and fractions.				
6.1.o	Interpret and use ratios in different contexts to show the relative sizes of two quantities using appropriate notations, including $1/b$, a to b , $a : b$.				
6.1.p	Demonstrate multiplication inverses of positive rational numbers.				
6.1.q	Demonstrate that division by zero is undefined.				
6.1.r	Estimate, determine, and justify the reasonableness of solutions to whole numbers problems and the sums and differences of commonly-used fractions and decimals.				

MATH STANDARD #2:

Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.

Ref.	Expectation	P	PP	NI	US
6.2.a	Represent, describe, and analyze patterns for relationships involving positive rational numbers.				
6.2.b	Use variables such as boxes, letters, or other symbols to describe a general rule and to solve problems.				
6.2.c	Solve problems from patterns involving positive rational numbers using tables, graphs, and rules.				

6.2.d.	In any functional relationship describe how a change in one quantity affects the other.				
6.2.e.	Graph discrete linear and nonlinear functions.				
6.2.f.	Graph a continuous linear function for a given situation.				
6.2.g.	Solve problems involving linear relationships in positive rational numbers.				
6.2.h.	Solve simple linear equations with whole number coefficients by informal methods using manipulatives, tables, graphs, or technology.				

MATH STANDARD #3:

Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning and processes using in solving these problems.

Ref.	Expectation	P	PP	NI	US
6.3.a.	Organize and display data using appropriate graphs, such as line, bar, circle, dot plots, frequency tables, and stem-and-leaf, and histograms.				
6.3.b.	Read, interpret, and draw conclusions from various displays of data.				
6.3.c.	Determine the mean of a set of data by using an algorithm.				
6.3.d.	Formally distinguish between mean, median, and mode.				
6.3.e.	Given various displays of the same set of data (above) determine which measure of central tendency is most evident.				
6.3.f.	Recognize a misleading display of data due to scaling.				
6.3.g.	Critically evaluate biased sampling of a survey.				
6.3.h.	Demonstrate the meaning of random sampling and biased versus unbiased samples.				
6.3.i.	Pictorially demonstrate the equivalence of probabilities as either a common fraction, decimal, or percent.				
6.3.j.	Assigns 0% to an impossible event and 100% to a certain event.				
6.3.k.	Performs experiments of independent compound events to estimate probability.				
6.3.l.	Predict the probability of independent compound events, conduct an experiment or simulation to determine the probability, and assign the probability to all possible sums of two number cubes.				
6.3.m.	Demonstrate that the sum of all probabilities of two number cubes equals one.				
6.3.n.	Using two chance devices, such as two number cubes or two spinners, design a fair game, and an unfair game, and write the directions for each.				
6.3.o.	Determine the number of outcomes of independent compound events, such as the sum of tossing two number cubes by making a list or tree diagram.				
6.3.p.	Determine the number of outcomes of independent compound events involving two different chance devices by making a list or tree diagram.				

MATH STANDARD #4:

Students use geometric concepts, properties, and relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Ref.	Expectation	P	PP	NI	US
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6.4.a.	Using a straight edge and a compass, paper folding, or computer software application, demonstrate the geometric construction of an angle bisector.				
6.4.b.	Build models of triangular prisms including their nets.				
6.4.c.	Given a three-dimensional model built with cubes, draw the orthogonal drawings(front, right side, top view) and the foundation drawing, and conversely, given the orthogonal and foundation drawing, build the model.				
6.4.d.	Describe, analyze, and reason about the properties of two-and three-dimensional figures.				
6.4.e.	Describe complementary and supplementary angles.				
6.4.f.	Use correct geometric symbols for parallelism, perpendicularity, and triangles.				
6.4.g.	Reason about the properties (including lines of symmetry) of parallelograms, rhombuses, and triangular prisms.				
6.4.h.	Reason about congruence involving parallelograms, rhombuses, and triangular prisms.				
6.4.i.	Identify the four quadrants of the coordinate plane.				
6.4.j.	Set up a coordinate graph (include axes, origin, and scale) and use it to mark and read coordinate pairs in all four quadrants.				
6.4.k.	Draw a graph from a given scenario.				
6.4.l.	Given a distance, find pairs of points on the coordinate plane separated by that horizontal or vertical distance.				
6.4.m.	Solve problems about perimeter and area of parallelograms and rhombuses.				
6.4.n.	Solve problems involving volume of triangular prisms.				
6.4.o.	Solve problems involving surface area of rectangular prisms.				
6.4.p.	Tile a plane with polygons.				
6.4.q.	Demonstrate clockwise and counterclockwise rotation with 90°, 180°, and 270° turns.				
6.4.r.	Using models, demonstrate the multiple transformations which occur to get from one congruent figure to the other, and given a written explanation of the transformations.				

MATH STANDARD #5:

Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.

Ref.	Expectation	P	PP	NI	US
6.5.a.	Estimate the length of the sides and height of parallelograms and rhombuses.				
6.5.b.	Estimate the perimeter and area of parallelograms and rhombuses.				
6.5.c.	Estimate the volume of triangular prisms.				
6.5.d.	Estimate the surface area of rectangular prisms.				
6.5.e.	Continue to estimate and use capacity, weight, and mass measurements.				
6.5.f.	Estimate measures of angles.				
6.5.g.	Compare the estimates and direct measurements obtained in measurements.				
6.5.h.	Read and interpret scales on number lines, graphs, and maps.				
6.5.i.	Selects the appropriate scale for a given problem.				
6.5.j.	Develop and use formulas for perimeter and area of parallelograms and				

	rhombuses using appropriate unit.				
6.5.k.	Develop and use the formula for volume of triangular prisms using appropriate units.				
6.5.l.	Describe how changes in the base of a triangle affect its area when its height is constant.				
6.5.m.	Describe how changes in one of the dimensions of a rectangular prism affects its volume.				
6.5.n.	Select and use the appropriate units and tools to measure to the degree of accuracy required in a particular problem.				
6.5.o.	Measure the length of the sides and heights of parallelograms and rhombuses to the nearest inch and nearest centimeter.				
6.5.p.	Measure angles and draw complements and supplements, where possible, using a protractor.				

MATH STANDARD #6:

Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving these problems.

Ref.	Expectation	P	PP	NI	US
6.6.a.	Demonstrate the equivalence of fractions, decimals, and percents.				
6.6.b.	Using concrete materials, determine commonly-used percentages in real-world problems.				
6.6.c.	Demonstrate order of operations including exponents with whole numbers.				
6.6.d.	Choose the appropriate representation of the remainder in a division problem.				
6.6.e.	Demonstrate equivalencies of mixed numerals and improper fractions.				
6.6.f.	Simplify fractions.				
6.6.g.	Using paper-and-pencil, demonstrate with proficiency addition and subtraction of fractions including mixed numerals.				
6.6.h.	Using concrete materials, demonstrate multiplication and division of decimals by whole numbers.				
6.6.i..	Demonstrate, by modeling, the inverse relationship of multiplication and division common proper fractions.				
6.6.j.	Count change up to the amount given.				
6.6.k.	Determine from real-world problems whether an estimated or exact answer is acceptable.				
6.6.l.	Use estimation techniques before performing operations.				
6.6.m.	Determine whether information given in a problem-solving situation is sufficient, insufficient, or extraneous.				
6.6.n.	Given a real-world problem-solving situation, use the correct operation and appropriate method to solve the problem.				
6.6.o.	Given a math sentence with sums and differences of common fractions and decimals, create and illustrate a real-world problem.				
6.6.p.	In a problem-solving situation, determine whether the results are reasonable and justify those results with correct computation.				

Adopted Spring 2003