

Adopted State of Washington 6-8 Mathematics Standards Condensed Table



April 28, 2008

6TH GRADE MATH STANDARDS

List of Performance Expectations	Core Content #1: <u>Multiplication and Division of Fractions and Decimals</u>	Core Content #2: <u>Mathematical Expressions and Equations</u>	Core Content #3: <u>Ratios, Rates and Percents</u>	Core Content #4: <u>Two- and Three-Dimensional Figures</u>	Core Content #5: <u>Additional Key Content</u>	Core Processes #6: <u>Reasoning, Problem Solving, and Communication</u>
A	Compare and order non-negative fractions, decimals, and integers using the number line, lists, and the symbols $<$, $>$, or $=$. N	Write a mathematical expression or equation with variables to represent information in a table or given situation. A	Identify and write ratios as comparisons of part-to-part and part-to-whole relationships. N	Determine the circumference and area of circles. GM	Use strategies for mental computations with non-negative whole numbers, fractions, and decimals. O	Analyze a problem situation to determine the question(s) to be answered.
B	Represent multiplication and division of non-negative fractions and decimals using area models and the number line, and connect each representation to the related equation. O	Draw a first-quadrant graph in the coordinate plane to represent information in a table or given situation. A	Write ratios to represent a variety of rates. N	Determine the perimeter and area of a composite figure that can be divided into triangles, rectangles, and parts of circles. GM	Locate positive and negative integers on the number line and use integers to represent quantities in various contexts. N	Identify relevant, missing, and extraneous information related to the solution to a problem.
C	Estimate products and quotients of fractions and decimals. O	Evaluate Mathematical expressions when the value for each variable is given. A	Represent percents visually and numerically, and convert between the fractional, decimal, and percent representations of a number. O	Solve single- and multi-step word problems involving the relationships among radius, diameter, circumference, and area of circles, and verify the solutions. GMA	Compare and order positive and negative integers using the number line, lists, and the symbols $<$, $>$, or $=$. N	Analyze and compare mathematical strategies for solving problems, and select and use one or more strategies to solve a problem.
D	Fluently and accurately multiply and divide non-negative fractions and explain the inverse relationship between multiplication and division with fractions. O	Apply the commutative, associative, and distributive properties, and use the order of operations to evaluate mathematical expressions. O	Solve single- and multi-step word problems involving ratios, rates, and percents, and verify the solutions. AO	Recognize and draw two-dimensional representations of three-dimensional figures. GM		Represent a problem situation , describe the process used to solve the problem, and verify the reasonableness of the solution.
E	Multiply and divide whole numbers and decimals by 1000, 100, 10, 1, 0.1, 0.01, and 0.001. O	Solve one-step equations and verify solutions. A	Identify the ratio of the circumference to the diameter of a circle as the constant pi, and recognize $22/7$ and 3.14 as common approximations of pi. GM	Determine the surface area and volume of rectangular prisms using appropriate formulas and explain why the formulas work. GM		Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.
F	Fluently and accurately multiply and divide non-negative decimals. O	Solve word problems using mathematical expressions and equations and verify solutions. A	Determine the experimental probability of a simple event using data collected in an experiment. PS	Determine the surface area of a pyramid. GM		Apply a previously used problem-solving strategy in a new context.
G	Describe the effect of multiplying or dividing a number by one, by zero, by a number between zero and one, and by a number greater than one. O		Determine the theoretical probability of an event and its complement and represent the probability as a fraction or decimal from 0 to 1 or as percent from 0 to 100. PS	Describe and sort polyhedra by their attributes: parallel faces, types of faces, number of faces, edges, and vertices. GM		Extract and organize mathematical information from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.
H	Solve single- and multi-step word problems involving operations with fractions and decimals and verify the solutions. AO					Make and test conjectures based on data (or information) collected from explorations and experiments.

7TH GRADE MATH STANDARDS

List of Performance Expectations	Core Content #1: <u>Rational Numbers and Linear Equations</u>	Core Content #2: <u>Proportionality and Similarity</u>	Core Content#3: <u>Surface Area and Volume</u>	Core Content #4: <u>Probability and Data</u>	Core Content #5: <u>Additional Key Content</u>	Core Processes #6: <u>Reasoning, Problem Solving, and Communication</u>
A	Compare and order rational numbers using the number line, lists, and the symbols <, >, or =. N	Mentally add, subtract, multiply, and divide simple fractions, decimals, and percents. O	Determine the surface area and volume of cylinders using the appropriate formulas and explain why the formulas work. GM	Represent the sample space of probability experiments in multiple ways, including tree diagrams and organized lists. PS	Graph ordered pairs of rational numbers and determine the coordinates of a given point in the coordinate plane. A	Analyze a problem situation to determine the question(s) to be answered.
B	Represent addition, subtraction, multiplication, and division of positive and negative integers visually and numerically. O	Solve single- and multi-step problems involving proportional relationships and verify the solutions. A	Determine the volume of pyramids and cones using formulas. GM	Determine the theoretical probability of a particular event and use theoretical probability to predict experimental outcomes. PS	Write the prime factorization of whole numbers greater than 1, using exponents when appropriate. N	Identify relevant, missing, and extraneous information related to the solution to a problem.
C	Fluently and accurately add, subtract, multiply, and divide rational numbers. O	Describe proportional relationships in similar figures and solve problems involving similar figures. GM	Describe the effect that a change in scale factor on one attribute of a two- or three dimensional figure has on other attributes of the figure, such as the side or edge length, perimeter, area, surface area, or volume of a geometric figure. GM	Describe a data set using measures of center (median, mean, and mode) and variability (maximum, minimum, and range) and evaluate the suitability and limitations of using each measure for different situations. PS		Analyze and compare mathematical strategies for solving problems, and select and use one or more strategies to solve a problem.
D	Define and determine the absolute value of a number. N	Make scale drawings and solve problems related to scale. GMA	Solve single- and multi-step word problems involving surface area or volume and verify the solutions. GMA	Construct and interpret histograms, stem and-leaf plots, and circle graphs. PS		Represent a problem situation , describe the process used to solve the problem, and verify the reasonableness of the solution.
E	Solve two-step linear equations. A	Represent proportional relationships using graphs, tables, and equations, and make connections among the representations. A		Evaluate different displays of the same data for effectiveness and bias, and explain reasoning. PS		Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.
F	Write an equation that corresponds to a given problem situation, and describe a problem situation that corresponds to a given equation. A	Determine the slope of a line corresponding to the graph of a proportional relationship and relate slope to similar triangles. A				Apply a previously used problem-solving strategy in a new context.
G	Solve single- and multi-step word problems involving rational numbers and verify the solutions. AO	Determine the unit rate in a proportional relationship and relate it to the slope of the associated line. A				Extract and organize mathematical information from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.
H		Determine whether or not a relationship is proportional and explain your reasoning. A				Make and test conjectures based on data (or information) collected from explorations and experiments.
I		Solve single- and multi-step problems involving conversions within or between measurement systems and verify the solutions. GMA				

8TH GRADE MATH STANDARDS

List of Performance Expectations	Core Content #1: <u>Linear Functions and Equations</u>	Core Content #2: <u>Properties of Geometric Figures</u>	Core Content #3: <u>Summary and Analysis of Data Sets</u>	Core Content #4: <u>Additional Key Content</u>	Core Processes #5: <u>Reasoning, Problem Solving, and Communication</u>
A	Solve one-variable linear equations. A	Identify pairs of angles as complementary, supplementary, adjacent, or vertical, and use these relationships to determine missing angle measures. GM	Summarize and compare data sets in terms of variability and measures of center. PS	Represent numbers in scientific notation, and translate numbers written in scientific notation into standard form. N	Analyze a problem situation to determine the question(s) to be answered.
B	Solve one- and two-step linear inequalities and graph the solutions on the number line. A	Determine missing angle measures using the relationships among the angles formed by parallel lines and transversals. GM	Select, construct, and analyze data displays, including box-and-whisker plots, to compare two sets of data. PS	Solve problems involving operations with numbers in scientific notation and verify solutions. O	Identify relevant, missing, and extraneous information related to the solution to a problem.
C	Represent a linear function with a verbal description, table, graph, or symbolic expression, and make connections among these representations. A	Demonstrate that the sum of the angle measures in a triangle is 180 degrees, and apply this fact to determine the sum of the angle measures of polygons and to determine unknown angle measures. GM	Create a scatter plot for a two-variable data set, and, when appropriate, sketch and use a trend line to make predictions. PS	Evaluate numerical expressions involving non-negative integer exponents using the laws of exponents and the order of operations. O	Analyze and compare mathematical strategies for solving problems, and select and use one or more strategies to solve a problem.
D	Determine the slope and y-intercept of a linear function described by a symbolic expression, table, or graph. A	Represent and explain the effect of one or more translations, rotations, reflections, or dilations (centered at the origin) of a geometric figure on the coordinate plane. GM	Describe different methods of selecting statistical samples and analyze the strengths and weaknesses of each method. PS	Identify rational and irrational numbers. N	Represent a problem situation , describe the process used to solve the problem, and verify the reasonableness of the solution.
E	Interpret the slope and y-intercept of the graph of a linear function representing a contextual situation. A	Quickly recall the square roots of the perfect squares from 1 through 225 and estimate the square roots of other positive numbers. N	Determine whether conclusions of statistical studies reported in the media are reasonable. PS		Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.
F	Solve single- and multi-step word problems involving linear functions and verify the solutions. A	Demonstrate the Pythagorean Theorem and its converse and apply them to solve problems. GM	Determine probabilities for mutually exclusive, dependent, and independent events for small sample spaces. PS		Apply a previously used problem-solving strategy in a new context.
G	Determine and justify whether a given verbal description, table, graph, or symbolic expression represents a linear relationship. A	Apply the Pythagorean Theorem to determine the distance between two points on the coordinate plane. GM	Solve single- and multi-step problems using counting techniques and Venn diagrams and verify the solutions. PS		Extract and organize mathematical information from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.
H					Make and test conjectures based on data (or information) collected from explorations and experiments.