

Essential Standards and Pacing Guide: Mathematics

6th Grade Mathematics

Strand	Standard	Pacing Guide
Number Sense	6.N.1.1* Compare and order positive and negative fractions, decimals, and mixed numbers; place them on a number line.	1 st and 2nd Quarter
	6.N.1.2* Interpret and use ratios in different contexts (batting averages) to show the relative sizes of two quantities, using appropriate notations (a/b , a to b , $a:b$).	2 nd Quarter
	6.N.1.3* Use proportions to solve problems; use cross-multiplication to solve these problems.	2 nd and 3 rd Quarter
	6.N.1.4* Calculate given percentages of quantities; solve problems involving discounts, interest earned, and tips.	3 rd Quarter
	6.N.2.3* Add, subtract, multiply, and divide positive and negative numbers; use combinations of operations to solve problems.	1 st Quarter
	6.N.2.4* Determine <i>least common multiple</i> and <i>greatest common divisor</i> of whole numbers.	1 st and 2 nd Quarter
Algebra and Functions	6.A.1.1* Write and solve one-step linear equations in one variable.	1 st and 2 nd Quarter
	6.A.2.2* Understand that rate is a measure of one quantity per unit value of another quantity.	2 nd Quarter
Measurement and Geometry	6.G.2.2* Use the properties of complementary and supplementary angles, and the sum of the angles of a triangle, to solve problems involving an unknown angle.	3 rd Quarter
Statistics, Data Analysis, and Probability	6.S.2.2* Identify different ways of selecting a sample; state which method is more representative.	3 rd Quarter
	6.S.2.5* Evaluate the validity of a statistical claim.	3 rd Quarter
	6.S.3.1* Represent all possible outcomes for compound events, in an organized way.	3 rd Quarter
	6.S.3.3* Represent probabilities as ratios, proportions, decimals, and percents.	3 rd Quarter
	6.S.3.5* Understand the difference between dependent and independent events.	3 rd Quarter
Mathematical Reasoning		All Year

Pre-Algebra

Strand	Standard	Pacing Guide
Number Sense	7.N.1.2* Add, subtract, multiply, and divide rational numbers; take to whole-number powers.	1 st and 2 nd Quarter
	7.N.1.4* Differentiate between rational and irrational numbers.	2 nd and 3 rd Quarter
	7.N.1.5* Know that every rational number is either a terminating or repeating decimal; convert to fractions.	2 nd and 3 rd Quarter
	7.N.1.7* Solve problems that involve discounts, mark-ups, commissions, and interest.	2 nd Quarter
	7.N.2.2* Add and subtract fractions by factoring to find common denominators.	2 nd Quarter
	7.N.2.3* Multiply, divide, and simplify rational numbers by using exponent rules.	2 nd Quarter
	7.N.2.5* Understand absolute value; determine the absolute value of real numbers.	1 st Quarter
Algebra and Functions	7.A.1.3* Simplify numerical expressions by applying properties of rational numbers.	1 st and 2 nd Quarter
	7.A.3.3* Graph linear functions, and know that the ratio is called the <i>slope</i> of the graph.	3 rd Quarter
	7.A.3.4* Plot the values of quantities with the same ratios, and fit a line to the plot; understand that slope of a line equals the quantities.	3 rd Quarter
	7.A.4.1* Solve two-step linear equations and inequalities in one variable over the rational numbers; interpret the solution and verify the reasonableness of the results.	2 nd Quarter
	7.A.4.2* step problems involving rate, average speed, distance, and time, or a direct variation.	2 nd and 3 rd Quarter
Measurement and Geometry	7.G.1.3* Use measures expressed as rates and products to solve problems; check the reasonableness of answers.	2 nd Quarter
	7.G.3.4* Understand conditions that indicate that two figures are congruent.	3 rd Quarter
	7.G.3.3* Know and understand the Pythagorean Theorem	3 rd Quarter
	7.G.3.6* Identify elements of three-dimensional objects; describe how two or more are related.	3 rd Quarter
Statistics, Data Analysis, and Probability	7.S.1.3* Understand the meaning of, and be able to compute, the minimum, lower quartile, median, upper quartile, and maximum of a data set.	3 rd Quarter
Mathematical Reasoning		All Year

Algebra 1

Strand	Standard	Pacing Guide
Number Properties, Operations, and Linear Equations	Al.2.0* Use operations such as taking the opposite, finding the reciprocal, taking a root, and raising to a fractional power; understand and use the rules of exponents.	All Year
	Al.4.0* Simplify expressions prior to solving linear equations and inequalities in one variable [$3(2x - 5) + 4(x - 2) = 12$].	1 st Quarter
	Al.5.0* Solve multiple-step problems, including word problems, involving linear equations and linear inequalities in one variable; provide justification for each step.	1 st Quarter
Graphing and Systems of Linear Equations	Al.6.0* Graph a linear equation and compute the x- and y-intercepts (graph $2x + 6y = 4$), (2); sketch the region defined by linear inequality ($2x + 6y < 4$).	2 nd Quarter
	Al.7.0* Verify that a point lies on a line, given an equation of the line, (1); derive linear equations using the point-slope formula.	2 nd Quarter
	Al.9.0* Algebraically solve a system of two linear equations in two variables, and interpret the answer graphically; solve a system of two linear inequalities in two variables; sketch the solution sets.	2 nd Quarter
Functions and Rational Expressions	Al.12.0* Simplify fractions with polynomials in the numerator and denominator by factoring both and reducing them to the lowest terms.	3 rd Quarter
	Al.13.0* Add, subtract, multiply, and divide rational expressions and functions.	3 rd Quarter
	Al.15.0* Apply algebraic techniques to solve rate, work, and percent mixture problems.	3 rd Quarter
Quadratics and Polynomials	Al.10.0* Add, subtract, multiply, and divide monomials and polynomials; solve multiple-step problems, including word problems, by using these techniques.	All Year
	Al.14.0* Solve a quadratic equation by factoring or completing the square.	3 rd Quarter
	Al.19.0* Know the quadratic formula and be familiar with its proof by completing the square.	3 rd Quarter
	Al.20.0* Use the quadratic formula to find the roots of a second-degree polynomial; solve quadratic equations.	3 rd Quarter
	Al.21.0* Graph quadratic functions; know that their roots are the x-intercepts.	3 rd Quarter
	Al.23.0* Apply quadratic equations to physical problems, such as the motion of an object under the force of gravity.	3 rd Quarter