

**Classroom Jeopardy!® Pre-Algebra and Algebra (Middle School)  
Standards and Correlation Document**

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Topic	Games/Categories	Source of Standard	Standard
Problem solving skills and real-world problems	<i>Given a real-world situation, determines a ratio</i> • Pre-Algebra Game 1: Student to Teacher	NCTM Principles and Standards for School Mathematics, Problem Solving Standards for Grades 6-8	• solve problems that arise in mathematics and in other contexts
	<i>Computes the cost of an item including tax</i> • Pre-Algebra Game 1, Final Jeopardy!  <i>Translates a word phrase into a variable expression</i> • Algebra Game 2: “Very Able” Expressions • Algebra Game 2: Expressions with “Y”	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 1, Level III (Grade 6-8)	<b>Benchmark 4</b> Formulates a problem, determines information required to solve the problem, chooses methods for obtaining this information, and sets limits for acceptable solutions <b>Benchmark 5</b> Represents problem situations in and translates among oral, written, concrete, pictorial, and graphical forms
	• Algebra Game 3: Age-Old Expressions	California State Board of Education K-12 Content Standards, Grade 6 and Grade 7 Mathematics, Mathematical Reasoning	1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.
		Texas Essential Knowledge and Skills, 111.22 Mathematics, Grade 6, Patterns, relationships, and algebraic thinking	(5) The student uses letters to represent an unknown in an equation. The student is expected to formulate an equation from a problem situation.
		Florida Dept. of Education Sunshine State Standards, Mathematics, Sixth Grade, Algebraic thinking	• translates simple algebraic expressions, equations or formulas representing real-world relationships into verbal expressions or sentences.
		Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7, Number, operation, and quantitative reasoning	2 (F) <i>select and use appropriate operations to solve problems and justify the selections</i>
		Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7 and Grade 8, Underlying processes and mathematical tools	13 (A)/ 14 (A) identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics
		Texas Essential Knowledge and Skills, 111.24 Mathematics, Grade 8, Number, operation, and quantitative reasoning	2 (A) <i>select and use appropriate operations to solve problems and justify the selections</i>
		Florida Dept. of Education Sunshine State Standards, Mathematics, Eighth Grade, Number sense, concepts and operations	• knows the appropriate operations to solve real-world problems involving integers, ratios, rates, proportions, numbers expressed as percents, decimals, and fractions. • solves real-world problems involving integers, ratios, proportions, numbers expressed as percents, decimals, and fractions in two- or three-step problems. • knows the relationships among fractions, decimals, and percents given a real-world context.

Mathematical symbols and language	<p><i>Understands vocabulary related to operations and numbers</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 1: “O” My Math</li> <li>• Pre-Algebra Game 2: Double-Duty Words</li> </ul>	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 1, Level III (Grade 6-8)	<p><b>Benchmark 5</b> Represents problem situations in and translates among oral, written, concrete, pictorial, and graphical forms</p> <p><b>Benchmark 8</b> Understands the role of written symbols in representing mathematical ideas and the use of precise language in conjunction with the special symbols of mathematics</p>
	<p><i>Understands vocabulary related to operations, fractions powers and radicals</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Spot the “Not”</li> </ul>	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 2, Level III (Grade 6-8)	<p><b>Benchmark 1 Vocabulary Terms</b> equivalent representation, whole number, positive, negative, fraction, ratio, decimal, percent, scientific notation, exponential, integer</p> <p><b>Benchmark 7 Vocabulary Terms</b> ratio, proportion, percent, rate</p>
	<p><i>Translates a word phrase into numerals and mathematical symbols</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 1: Final Jeopardy!</li> </ul>	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 3, Level III (Grade 6-8)	<p><b>Benchmark 2 Vocabulary Terms</b> exponentiation, exponent, rational number, root extraction, square number, square root, cube number, cube root</p>
		NCTM Principles and Standards for School Mathematics, Communication Standards for Grades 6-8	<ul style="list-style-type: none"> <li>• use the language of mathematics to express mathematical ideas precisely.</li> </ul>
		California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Mathematical Reasoning	2.5 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.
Powers and square roots	<p><i>Understands vocabulary related to powers and square roots</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Double-Duty Words</li> </ul>	NCTM Principles and Standards for School Mathematics, Number and Operations Standards for Grades 6-8	<ul style="list-style-type: none"> <li>• understand and use the inverse relationships of addition and subtraction, multiplication and division, and squaring and finding square roots to simplify computations and solve problems.</li> </ul>
	<p><i>Translates repeated multiplication as positive whole-number powers</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 1: Exponent Express</li> </ul>	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 2, Level III (Grade 6-8)	<p><b>Benchmark 5</b> Understands the characteristics and uses of exponents and scientific notation</p>
	<p><i>Translates repeated multiplication as positive and negative whole-number powers</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 2: Exponent Express</li> </ul>	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 3, Level III (Grade 6-8)	<p><b>Benchmark 2</b> Understands exponentiation of rational numbers and root-extraction (e.g., squares and square roots, cubes and cube roots)</p>
	<p><i>Computes the value of a number to the second power</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 1: Square It</li> </ul> <p><i>Computes the value of a number to the third power</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 1: Cube It</li> </ul>	California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Number Sense	<p>1.2 Add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers.</p> <p>2.1 Understand negative whole-number exponents. Multiply and divide expressions involving exponents with a common base.</p> <p>2.4 Use the inverse relationship between raising to a power and extracting the root of a perfect square integer; for an integer that is not square, determine without a calculator the two integers between which its square root lies and explain why.</p>

	<p><i>Identifies the square root of a number</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Square Roots</li> </ul>	California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Algebra and Functions	<p>2.1 Interpret positive whole-number powers as repeated multiplication and negative whole-number powers as repeated division or multiplication by the multiplicative inverse. Simplify and evaluate expressions that include exponents.</p> <p>2.2 Multiply and divide monomials; extend the process of taking powers and extracting roots to monomials when the latter results in a monomial with an integer exponent.</p>
	<p><i>Identifies the cube root of a number</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Cube Roots</li> </ul>		
	<p><i>Computes the value of powers up to the fourth power and negative powers</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Power Up</li> </ul>	Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7, Number, operation, and quantitative reasoning	1 (C) represent squares and square roots using geometric models.
	<p><i>Understands rules for working with exponents, including adding and multiplying powers and the relationship between powers and roots</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 2: Make It Simple</li> <li>• Algebra Game 3: Power Properties</li> </ul>	Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Number sense, concepts and operations	<ul style="list-style-type: none"> <li>• reads and writes whole numbers and decimals in expanded form, including exponential notation.</li> <li>• expresses whole numbers in exponential notation (for example, <math>36 = 6^2</math>) and evaluates numerical expressions that contain exponential notation.</li> </ul>
	<p><i>Finds the value of a number given its square or cube</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 2: Power Equations</li> </ul>	Florida Dept. of Education Sunshine State Standards, Mathematics, Eighth Grade, Number sense, concepts and operations	<ul style="list-style-type: none"> <li>• simplifies expressions using integers, exponents, and radicals.</li> <li>• expresses rational numbers in exponential notation including negative exponents (for example, <math>2^{-3} = 1/2^3 = 1/8</math>).</li> <li>• evaluates numerical or algebraic expressions that contain exponential notation.</li> </ul>
	<p><i>Finds the value of a number given its square or cube root</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 3: Root for Me</li> </ul>	California State Board of Education K-12 Content Standards, Grade 8-12 Mathematics, Algebra I	<b>2.0</b> Students understand and use such operations as taking the opposite, finding the reciprocal, taking a root, and raising to a fractional power. They understand and use the rules of exponents.
Scientific notation	<p><i>Given a number in standard notation, expresses it scientific notation</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Scientific Notation</li> </ul>	NCTM Principles and Standards for School Mathematics, Number and Operations Standards for Grades 6-8	<ul style="list-style-type: none"> <li>• develop an understanding of large numbers and recognize and appropriately use exponential, scientific, and calculator notation</li> </ul>
	<p><i>Finds the sum of two numbers less than 0 and expresses it in scientific notation</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Final Jeopardy!</li> </ul>	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 2, Level III (Grade 6-8)	<p><b>Benchmark 1</b> Understands the relationships among equivalent number representations (e.g., whole numbers, positive and negative integers, fractions, ratios, decimals, percents, scientific notation, exponentials) and the advantages and disadvantages of each type of representation</p> <p><b>Benchmark 5</b> Understands the characteristics and uses of exponents and scientific notation</p>

		California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Number Sense	1.1 Read, write, and compare rational numbers in scientific notation (positive and negative powers of 10) with approximate numbers using scientific notation.
		Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Number sense, concepts and operations	<ul style="list-style-type: none"> <li>knows word names and standard numerals for integers, fractions, decimals, ratios, numbers expressed as percents, numbers with exponents, numbers expressed in scientific notation, and numbers expressed using the square root radical.</li> <li>expresses numbers greater than one in scientific notation.</li> </ul>
		Texas Essential Knowledge and Skills, 111.24 Mathematics, Grade 8, Number, operation, and quantitative reasoning	1 (D) express numbers in scientific notation, including negative exponents, in appropriate problem situations using a calculator
		Florida Dept. of Education Sunshine State Standards, Mathematics, Eighth Grade, Number sense, concepts and operations	<ul style="list-style-type: none"> <li>knows equivalent forms of large and small numbers in scientific and standard notation.</li> <li>expresses numbers in scientific or standard notation including decimals between 0 and 1.</li> </ul>
Integers	<i>Orders positive and negative integers from smallest to largest</i> <ul style="list-style-type: none"> <li>Pre-Algebra Game 1: Think Small</li> </ul>	NCTM Principles and Standards for School Mathematics, Number and Operations Standards for Grades 6-8	<ul style="list-style-type: none"> <li>develop meaning for integers and represent and compare quantities with them.</li> <li>understand the meaning and effects of arithmetic operations with fractions, decimals, and integers</li> </ul>
	<i>Understands characteristics of negative and positive integers and the effects of operations on them</i> <ul style="list-style-type: none"> <li>Pre-Algebra Game 2: Negative or Positive?</li> </ul>	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 2, Level III (Grade 6-8)	<p><b>Benchmark 2</b> Understands the characteristics and properties (e.g., order relations, relative magnitude, base-ten place values) of the set of rational numbers and its subsets (e.g., whole numbers, fractions, decimals, integers)</p> <p><b>Benchmark 3</b> Understands the role of positive and negative integers in the number system</p>
	<i>Knows the inverse relationship of positive and negative integers</i> <ul style="list-style-type: none"> <li>Pre-Algebra Game 1: “O” My Math</li> </ul>	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 3, Level III (Grade 6-8)	<b>Benchmark 1</b> Adds, subtracts, multiplies, and divides whole numbers, fractions, decimals, integers, and rational numbers
	<i>Solves multiplication problems with negative integers</i> <ul style="list-style-type: none"> <li>Pre-Algebra Game 2: Integer Times</li> </ul>	California State Board of Education K-12 Content Standards, Grade 6 Mathematics, Number Sense	2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations, that use positive and negative integers and combinations of these operations.
	<i>Identifies the opposite of a number or variable:</i> <ul style="list-style-type: none"> <li>Algebra Game 1: Its Opposite</li> </ul>	Florida Dept. of Education Sunshine State Standards, Mathematics, Sixth Grade, Number Sense, Concepts and Operations	<ul style="list-style-type: none"> <li>uses concrete models and real-world examples to explore the inverse relationship of positive and negative numbers.</li> </ul>
	<i>Solves equations with negative numbers:</i> <ul style="list-style-type: none"> <li>Algebra Game 2: “A” Take-Away</li> </ul>	California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Number Sense	1.2 Add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers.
	<i>Solves addition and subtraction problems with positive and negative integers</i> <ul style="list-style-type: none"> <li>Pre-Algebra Game 1: Integer Arithmetic</li> </ul>		

	<p><i>Solves multiplication problems with positive and negative integers</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Integer Times</li> </ul>	<p>Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7, Number, operation, and quantitative reasoning</p> <p>Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade and Eighth Grade, Number sense, concepts and operations</p> <p>Florida Dept. of Education Sunshine State Standards, Mathematics, Eighth Grade, Number sense, concepts and operations</p>	<p>1 (A) compare and order integers and positive rational numbers 2 (C) use models to add, subtract, multiply, and divide integers and connect the actions to algorithms</p> <ul style="list-style-type: none"> <li>• knows the inverse relationship of positive and negative numbers.</li> <li>• simplifies expressions using integers, exponents, and radicals.</li> <li>• knows the effects of the four basic operations on whole numbers, fractions, mixed numbers, decimals, and integers.</li> </ul>
Absolute value	<p><i>Identifies the absolute value of an integer</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Absolutely!</li> </ul> <p><i>Identifies the absolute value of an integer or variable</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 3: It's Absolute</li> </ul>	<p>California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Number Sense</p> <p>Florida Dept. of Education Sunshine State Standards, Mathematics, Eighth Grade, Number sense, concepts and operations</p> <p>Florida Dept. of Education Sunshine State Standards, Mathematics, Eighth Grade, Number sense, concepts and operations</p> <p>California State Board of Education K-12 Content Standards, Grade 8-12 Mathematics, Algebra I</p>	<p>2.5 Understand the meaning of the absolute value of a number; interpret the absolute value as the distance of the number from zero on a number line; and determine the absolute value of real numbers.</p> <ul style="list-style-type: none"> <li>• compares and orders numbers expressed in absolute value, scientific notation, integers, percents, numbers with exponents, fractions, decimals, radicals, and ratios.</li> <li>• identifies and explains the absolute value of a number.</li> </ul> <p><b>3.0</b> Students solve equations and inequalities involving absolute values.</p>
Roman numerals	<p><i>Identifies the value of numbers written in Roman numerals</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 1: When in Rome</li> </ul>	<p>McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 2, Level III (Grade 6-8)</p> <p>Florida Dept. of Education Sunshine State Standards, Mathematics, Sixth Grade, Number Sense, Concepts and Operations</p> <p>Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Number sense, concepts and operations</p>	<p><b>Benchmark 6</b> Understands the structure of numeration systems that are based on numbers other than 10 (e.g., base 60 for telling time and measuring angles, Roman numerals for dates and clock faces)</p> <ul style="list-style-type: none"> <li>• compares the decimal number system to systems that do not use place value (for example, Roman numeral, ancient Egyptian).</li> <li>• applies knowledge of the decimal number system and of non-place-value systems.</li> </ul>

Compare and order numbers, including fractions, decimals, percents, and positive and negative numbers	<p><i>Orders numbers, including fractions, decimals, percents and negative numbers, from smallest to largest</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 1: Think Small</li> </ul> <p><i>Orders numbers, including fractions, decimals, percents and negative numbers and irrational numbers, from smallest to largest</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Small to Large</li> </ul>	NCTM Principles and Standards for School Mathematics, Number and Operations Standards for Grades 6-8	<ul style="list-style-type: none"> <li>• compare and order fractions, decimals, and percents efficiently and find their approximate locations on a number line</li> </ul>
		California State Board of Education K-12 Content Standards, Grade 6 Mathematics, Number Sense	1.1 Compare and order positive and negative fractions, decimals, and mixed numbers and place them on a number line.
		Texas Essential Knowledge and Skills, 111.22 Mathematics, Grade 6, Number, operation, and quantitative reasoning	1 (A) compare and order non-negative rational numbers
		Florida Dept. of Education Sunshine State Standards, Mathematics, Sixth Grade, Number Sense, Concepts and Operations	<ul style="list-style-type: none"> <li>• compares and orders fractions, decimals, and common percents using graphic models, number lines, and symbols.</li> </ul>
		Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7, Number, operation, and quantitative reasoning	1 (A) compare and order integers and positive rational numbers
		Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Number sense, concepts and operations	<ul style="list-style-type: none"> <li>• compares and orders integers, fractions, decimals, numbers with exponents, and numbers expressed as percents or in scientific notation, including ordering on a number line.</li> </ul>
		Texas Essential Knowledge and Skills, 111.24 Mathematics, Grade 8, Number, operation, and quantitative reasoning	1 A) compare and order rational numbers in various forms including integers, percents, and positive and negative fractions and decimals
		Florida Dept. of Education Sunshine State Standards, Mathematics, Eighth Grade, Number sense, concepts and operations	<ul style="list-style-type: none"> <li>• compares and orders fractions, decimals, integers, and radicals using graphic models, number lines, and symbols.</li> <li>• compares and orders numbers expressed in absolute value, scientific notation, integers, percents, numbers with exponents, fractions, decimals, radicals, and ratios.</li> </ul>
Convert fractions, decimals, and percents	<p><i>Given an equivalent decimal/fraction pair, identifies the equivalent percent</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 1: Name that Percent</li> </ul> <p><i>Expresses decimals as percents:</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 1: Percent Express</li> </ul>	NCTM Principles and Standards for School Mathematics, Number and Operations Standards for Grades 6-8	<ul style="list-style-type: none"> <li>• work flexibly with fractions, decimals, and percents to solve problems</li> </ul>
		McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 2, Level III (Grade 6-8)	<p><b>Benchmark 1</b></p> <p>Understands the relationships among equivalent number representations (e.g., whole numbers, positive and negative integers, fractions, ratios, decimals, percents, scientific notation, exponentials) and the advantages and disadvantages of each type of representation</p>
		Florida Dept. of Education Sunshine State Standards, Mathematics, Sixth Grade, Number Sense, Concepts and Operations	<ul style="list-style-type: none"> <li>• knows the relationships among fractions, decimals, and percents and expresses a given quantity in a variety of ways, such as fractions, decimals, or numbers expressed as percents.</li> </ul>
		Texas Essential Knowledge and Skills, 111.22 Mathematics, Grade 6, Number, operation, and quantitative reasoning	1 (B) generate equivalent forms of rational numbers including whole numbers, fractions, and decimals

		California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Number Sense	1.3 Convert fractions to decimals and percents and use these representations in estimations, computations, and applications. 1.5 Know that every rational number is either a terminating or repeating decimal and be able to convert terminating decimals into reduced fractions.
		Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7, Number, operation, and quantitative reasoning	1 (B) convert between fractions, decimals, whole numbers, and percents mentally, on paper, or with a calculator
		Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Number sense, concepts and operations	<ul style="list-style-type: none"> <li>• knows the relationships among fractions, decimals, and percents.</li> <li>• expresses a given quantity in a variety of ways (for example, integers, fractions, decimals, numbers expressed as a percent, numbers expressed in scientific notation, ratios).</li> </ul>
Percents	<i>Solves real-world problems involving percents</i> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 1: Percents in Action</li> </ul> <i>Computes the cost of an item including tax</i> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 1: Final Jeopardy!</li> </ul> <i>Finds the product of a percent and a whole number, fraction or percent</i> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Finding Percents</li> </ul>	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 2, Level III (Grade 6-8)	<b>Benchmark 7</b> Understands the concepts of ratio, proportion, and percent and the relationships among them
		McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 3, Level III (Grade 6-8)	<b>Benchmark 5</b> Uses proportional reasoning to solve mathematical and real-world problems (e.g., involving equivalent fractions, equal ratios, constant rate of change, proportions, percents)
		California State Board of Education K-12 Content Standards, Grade 6 Mathematics, Number Sense	1.4 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.
		Texas Essential Knowledge and Skills, 111.22 Mathematics, Grade 6, Patterns, relationships, and algebraic thinking	3 (B) represent ratios and percents with concrete models, fractions, and decimals
		California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Number Sense	1.6 Calculate the percentage of increases and decreases of a quantity. 1.7 Solve problems that involve discounts, markups, commissions, and profit and compute simple and compound interest.
		Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7, Number, operation, and quantitative reasoning	3 (A) estimate and find solutions to application problems involving percent

		Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Number sense, concepts and operations	<ul style="list-style-type: none"> <li>solves real-world problems involving percents (for example, discounts, simple interest, taxes, tips).</li> </ul>
		Texas Essential Knowledge and Skills, 111.24 Mathematics, Grade 8, Patterns, relationships, and algebraic thinking	3 (B) estimate and find solutions to application problems involving percents and proportional relationships such as similarity and rates.
Ratios and proportions	<p><i>Given a real-world situation, determines a ratio</i></p> <ul style="list-style-type: none"> <li>Pre-Algebra Game 1: Student to Teacher</li> </ul> <p><i>Find the value of a variable in an equation with ratios</i></p> <ul style="list-style-type: none"> <li>Algebra Game 1: Right Ratios</li> </ul>	NCTM Principles and Standards for School Mathematics, Number and Operations Standards for Grades 6-8	<ul style="list-style-type: none"> <li>understand and use ratios and proportions to represent quantitative relationships</li> <li>develop, analyze, and explain methods for solving problems involving proportions, such as scaling and finding equivalent ratios.</li> </ul>
		McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 2, Level III (Grade 6-8)	<b>Benchmark 7</b> Understands the concepts of ratio, proportion, and percent and the relationships among them
		McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 3, Level III (Grade 6-8)	<b>Benchmark 5</b> Uses proportional reasoning to solve mathematical and real-world problems (e.g., involving equivalent fractions, equal ratios, constant rate of change, proportions, percents)
		California State Board of Education K-12 Content Standards, Grade 6 Mathematics, Number Sense	1.2 Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations ( $a/b$ , $a$ to $b$ , $a:b$ ). 1.3 Use proportions to solve problems (e.g., determine the value of $N$ if $4/7 = N/21$ , find the length of a side of a polygon similar to a known polygon). Use cross-multiplication as a method for solving such problems, understanding it as the multiplication of both sides of an equation by a multiplicative inverse.
		Texas Essential Knowledge and Skills, 111.22 Mathematics, Grade 6, Number, operation, and quantitative reasoning	2 (C) use multiplication and division of whole numbers to solve problems including situations involving equivalent ratios and rates
		Texas Essential Knowledge and Skills, 111.22 Mathematics, Grade 6, Patterns, relationships, and algebraic thinking	3 (A) use ratios to describe proportional situations 3 (B) represent ratios and percents with concrete models, fractions, and decimals
		Florida Dept. of Education Sunshine State Standards, Mathematics, Sixth Grade, Number Sense, Concepts and Operations	<ul style="list-style-type: none"> <li>knows proportional relationships and describes such relationships in words, tables, or graphs.</li> </ul>
		Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7, Number, operation, and quantitative reasoning	2 (D) use division to find unit rates and ratios in proportional relationships such as speed, density, price, recipes, and student-teacher ratio 3 (B) estimate and find solutions to application problems involving proportional relationships such as similarity, scaling, unit costs, and related measurement units.

		Texas Essential Knowledge and Skills, 111.24 Mathematics, Grade 8, Number, operation, and quantitative reasoning	1 (B) select and use appropriate forms of rational numbers to solve real-life problems including those involving proportional relationships
		Texas Essential Knowledge and Skills, 111.24 Mathematics, Grade 8, Patterns, relationships, and algebraic thinking	3 (B) estimate and find solutions to application problems involving percents and proportional relationships such as similarity and rates.
Rates	<i>Understands vocabulary related to rates</i> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Double-Duty Words</li> </ul> <i>Computes unit rates</i> <ul style="list-style-type: none"> <li>• Algebra Game 1: Great Rates</li> <li>• Algebra Game 2: Right Rates</li> </ul>	NCTM Principles and Standards for School Mathematics, Measurement Standards for Grades 6-8	<ul style="list-style-type: none"> <li>• solve simple problems involving rates and derived measurements for such attributes as velocity and density.</li> </ul>
		McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 4, Level III (Grade 6-8)	<b>Benchmark 1</b> Understands the basic concept of rate as a measure (e.g., miles per gallon)
		California State Board of Education K-12 Content Standards, Grade 6 Mathematics, Number Sense	1.2 Interpret and use ratios in different contexts (e.g., batting averages, miles per hour) to show the relative sizes of two quantities, using appropriate notations ( $a/b$ , $a$ to $b$ , $a:b$ ).
		California State Board of Education K-12 Content Standards, Grade 6 Mathematics, Algebra and Functions	2.2 Demonstrate an understanding that <i>rate</i> is a measure of one quantity per unit value of another quantity. 2.3 Solve problems involving rates, average speed, distance, and time.
		Texas Essential Knowledge and Skills, 111.22 Mathematics, Grade 6, Number, operation, and quantitative reasoning	2 (C) use multiplication and division of whole numbers to solve problems including situations involving equivalent ratios and rates
		California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Algebra and Functions	4.2 Solve multistep problems involving rate, average speed, distance, and time or a direct variation.
		California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Measurement and Geometry	<ul style="list-style-type: none"> <li>• 1.3 Use measures expressed as rates (e.g., speed, density) and measures expressed as products (e.g., person-days) to solve problems; check the units of the solutions; and use dimensional analysis to check the reasonableness of the answer.</li> </ul>
		Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7, Number, operation, and quantitative reasoning	2 (D) use division to find unit rates and ratios in proportional relationships such as speed, density, price, recipes, and student-teacher ratio
		Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Measurement	<ul style="list-style-type: none"> <li>• develops and uses the distance formula in solving real-world problems (<math>d = rt</math>).</li> </ul>
		Texas Essential Knowledge and Skills, 111.24 Mathematics, Grade 8, Patterns, relationships, and algebraic thinking	3 (B) estimate and find solutions to application problems involving percents and proportional relationships such as similarity and rates.

		Florida Dept. of Education Sunshine State Standards, Mathematics, Eighth Grade, Measurement	<ul style="list-style-type: none"> <li>applies formulas for finding rates, distance, time, and angle measures.</li> </ul>
		California State Board of Education K-12 Content Standards, Grade 8-12 Mathematics, Algebra I	<b>15.0</b> Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.
Order of operations	<i>Understands purpose of order of operations</i>	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 3, Level III (Grade 6-8)	<b>Benchmark 4</b> Understands the correct order of operations for performing arithmetic computations
	<ul style="list-style-type: none"> <li>Pre-Algebra Game 1: “O” My Math</li> </ul>	California State Board of Education K-12 Content Standards, Grade 6 Mathematics, Algebra and Functions	1.3 Apply algebraic order of operations and the commutative, associative, and distributive properties to evaluate expressions; and justify each step in the process. 1.4 Solve problems manually by using the correct order of operations or by using a scientific calculator.
	<i>Applies order of operations to identify which step should be done first in a multi-step problem</i>		
	<ul style="list-style-type: none"> <li>Pre-Algebra Game 1: First Things First</li> </ul>	Florida Dept. of Education Sunshine State Standards, Mathematics, Sixth Grade, Number Sense, Concepts and Operations	<ul style="list-style-type: none"> <li>applies order of operations when solving problems (parentheses, multiplication, division, addition, and subtraction).</li> </ul>
	<i>Applies order of operations to solve multi-step problems</i>	California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Algebra and Functions	1.2 Use the correct order of operations to evaluate algebraic expressions such as $3(2x + 5)^2$ .
	<ul style="list-style-type: none"> <li>Pre-Algebra Game 2: Do the Two-Step</li> </ul>	Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7, Number, operation, and quantitative reasoning	2 (E) simplify numerical expressions involving order of operations and exponents
		Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Number Sense, Concepts and Operations	<ul style="list-style-type: none"> <li>applies order of operations to solve problems (parentheses, exponents, multiplication, division, addition, and subtraction).</li> </ul>
Properties of rational numbers	<i>Understands the identity property</i>	NCTM Principles and Standards for School Mathematics, Number and Operations Standards for Grades 6-8	<ul style="list-style-type: none"> <li>use the associative and commutative properties of addition and multiplication and the distributive property of multiplication over addition to simplify computations with integers, fractions, and decimals</li> <li>understand and use the inverse relationships of addition and subtraction, multiplication and division, and squaring and finding square roots to simplify computations and solve problems.</li> </ul>
	<ul style="list-style-type: none"> <li>Pre-Algebra Game 1: “O” My Math</li> </ul>	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 3, Level III (Grade 6-8)	<b>Benchmark 6</b> Understands the properties of operations with rational numbers (e.g., distributive property, commutative and associative properties of addition and multiplication, inverse properties, identity properties)
	<i>Recognizes equalities that express properties of rational numbers</i>	California State Board of Education K-12 Content Standards, Grade 6 Mathematics, Algebra and Functions	1.3 Apply algebraic order of operations and the commutative, associative, and distributive properties to evaluate expressions; and justify each step in the process.
	<ul style="list-style-type: none"> <li>Algebra Game 1: Proper Properties</li> </ul>		
	<i>Identifies properties by the equalities used to express them</i>		
	<ul style="list-style-type: none"> <li>Algebra Game 2: Hot Properties</li> </ul>		
	<i>Uses properties of rational numbers to justify steps in simplifying expressions:</i>		
	<ul style="list-style-type: none"> <li>Algebra Game 3: Steps and Reasons</li> </ul>		

	<p><i>Applies the distributive property to simplify an equation and find the value of a variable</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 2: Final Jeopardy!</li> </ul> <p><i>Based on properties of exponential number, identifies a statement as true or false</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 3: Power Properties</li> </ul>	Florida Dept. of Education Sunshine State Standards, Mathematics, Sixth Grade, Number Sense, Concepts and Operations	<ul style="list-style-type: none"> <li>• knows and applies the commutative, associative, and distributive properties in the addition and multiplication of rational numbers.</li> </ul>
		California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Algebra and Functions	1.3 Simplify numerical expressions by applying properties of rational numbers (e.g., identity, inverse, distributive, associative, commutative) and justify the process used.
		Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Number sense, concepts and operations	<ul style="list-style-type: none"> <li>• applies the properties of rational numbers to solve problems (commutative, associative, distributive, identity, equality, inverse).</li> </ul>
		Florida Dept. of Education Sunshine State Standards, Mathematics, Eighth Grade, Number sense, concepts and operations	<ul style="list-style-type: none"> <li>• applies the properties of real numbers to solve problems (commutative, associative, distributive, identity, equality, inverse, and closure).</li> </ul>
		California State Board of Education K-12 Content Standards, Grade 8-12 Mathematics, Algebra I	<p><b>1.0</b> Students identify and use the arithmetic properties of subsets of integers and rational, irrational, and real numbers, including closure properties for the four basic arithmetic operations where applicable</p> <p>1.1 Students use properties of numbers to demonstrate whether assertions are true or false.</p>
Differentiate between rational and irrational numbers	<p><i>Understands the definition of rational numbers</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Double-Duty Words</li> </ul> <p><i>Classifies numbers as rational or irrational</i></p> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 1: Be Rational</li> </ul>	California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Number Sense	1.4 Differentiate between rational and irrational numbers.
		California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Number Sense	1.5 Know that every rational number is either a terminating or repeating decimal and be able to convert terminating decimals into reduced fractions.
		Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Number sense, concepts and operations	<ul style="list-style-type: none"> <li>• describes the meanings of rational and irrational numbers using physical or graphical displays.</li> </ul>
		Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Number sense, concepts and operations	<ul style="list-style-type: none"> <li>• knows examples of rational and irrational numbers in real-world situations, including the irrational numbers <math>\pi</math> and 2.</li> </ul>
		Florida Dept. of Education Sunshine State Standards, Mathematics, Eighth Grade, Number sense, concepts and operations	<ul style="list-style-type: none"> <li>• knows examples of rational and irrational numbers in real-world situations.</li> <li>• describes the meanings of rational and irrational numbers using physical or graphical displays.</li> </ul>

Estimate values of irrational numbers	<i>Estimate values of irrational numbers</i> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Small to Large</li> </ul>	Texas Essential Knowledge and Skills, 111.24 Mathematics, Grade 8, Number, operation, and quantitative reasoning	1 (C) approximate (mentally and with calculators) the value of irrational numbers as they arise from problem situations ( $\pi$ , 2)
		California State Board of Education K-12 Content Standards, Grade 6 Mathematics, Measurement and Geometry	1.2 Know common estimates of $\pi$ (3.14; 22/7) and use these values to estimate and calculate the circumference and the area of circles; compare with actual measurements.
		Florida Dept. of Education Sunshine State Standards, Mathematics, Sixth Grade, Measurement	<ul style="list-style-type: none"> <li>• uses concrete and graphic models to discover an approximation for <math>\pi</math> and creates a formula for finding circumference.</li> </ul>
Reciprocals	<i>Identifies the reciprocal of a number or variable</i> <ul style="list-style-type: none"> <li>• Algebra Game 3: Reciprocal Pro</li> </ul>	California State Board of Education K-12 Content Standards, Grade 8-12 Mathematics, Algebra I	<b>2.0</b> Students understand and use such operations as taking the opposite, finding the reciprocal, taking a root, and raising to a fractional power. They understand and use the rules of exponents.
Arithmetic operations	<i>Solves addition and subtraction problems with positive and negative integers</i> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 1: Integer Arithmetic</li> </ul> <i>Computes the cost of an item including tax</i> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 1: Final Jeopardy!</li> </ul> <i>Solves multiplication problems with positive and negative integers</i> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Integer Times</li> </ul> <i>Solves multiplication problems with positive and negative integers</i> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Integer Times</li> </ul> <i>Finds the sum of two numbers less than 0 and expresses it in scientific notation</i> <ul style="list-style-type: none"> <li>• Pre-Algebra Game 2: Final Jeopardy!</li> </ul> <i>Uses computation skills to find the value of a variable in an equality</i> <ul style="list-style-type: none"> <li>• Algebra Game 1: Get an “A” in Addition</li> <li>• Algebra Game 1: Additional Equations</li> <li>• Algebra Game 1: Fast Times</li> <li>• Algebra Game 1: Hard Times</li> <li>• Algebra Game 2: “A” Take-Away</li> <li>• Algebra Game 2: Power Equations</li> </ul>	NCTM Principles and Standards for School Mathematics, Number and Operations Standards for Grades 6-8	<ul style="list-style-type: none"> <li>• understand the meaning and effects of arithmetic operations with fractions, decimals, and integers</li> <li>• understand and use the inverse relationships of addition and subtraction, multiplication and division, and squaring and finding square roots to simplify computations and solve problems.</li> </ul>
		McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 3, Level III (Grade 6-8)	<b>Benchmark 1</b> Adds, subtracts, multiplies, and divides whole numbers, fractions, decimals, integers, and rational numbers
		California State Board of Education K-12 Content Standards, Grade 6 Mathematics, Number Sense	2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations, that use positive and negative integers and combinations of these operations.
		California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Number Sense	1.2 Add, subtract, multiply, and divide rational numbers (integers, fractions, and terminating decimals) and take positive rational numbers to whole-number powers. 2.2 Add and subtract fractions by using factoring to find common denominators.
		Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7, Number, operation, and quantitative reasoning	2 (C) use models to add, subtract, multiply, and divide integers and connect the actions to algorithms
		Texas Essential Knowledge and Skills, 111.24 Mathematics, Grade 8, Number, operation, and quantitative reasoning	2 (B) add, subtract, multiply, and divide rational numbers in problem situations

	<p><i>Substitutes a value for a variable in an expression and computes the value of the expression</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 2: M = 4</li> <li>• Algebra Game 3: What's B?</li> </ul> <p><i>Combines like terms and uses computation to find the value of a variable</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 3: "C" the Solution</li> </ul> <p><i>Given an equation, identifies ordered pairs of variables that are solutions</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 3: Possible Pairs</li> </ul>	<p>Florida Dept. of Education Sunshine State Standards, Mathematics, Eighth Grade, Number sense, concepts and operations</p>	<ul style="list-style-type: none"> <li>• knows the effects of the four basic operations on whole numbers, fractions, mixed numbers, decimals, and integers.</li> </ul>
<p><i>Perimeter, circumference, area, surface area and volume</i></p>	<p><i>Identifies elements of geometric and algebraic formulas</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 2: Secret Formula</li> </ul> <p><i>Independently recalls formulas for perimeter, circumference, area, and volume of figures</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 3: Geometry Formula Challenge</li> </ul>	<p>NCTM Principles and Standards for School Mathematics, Measurement Standards for Grades 6-8</p> <p>McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 4, Level III (Grade 6-8)</p> <p>California State Board of Education K-12 Content Standards, Grade 6 Mathematics, Algebra and Functions</p> <p>Texas Essential Knowledge and Skills, 111.22 Mathematics, Grade 6, Patterns, relationships, and algebraic thinking</p> <p>Florida Dept. of Education Sunshine State Standards, Mathematics, Sixth Grade, Measurement</p> <p>California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Measurement and Geometry</p> <p>Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7, Patterns, relationships, and algebraic thinking</p>	<ul style="list-style-type: none"> <li>• develop and use formulas to determine the circumference of circles and the area of triangles, parallelograms, trapezoids, and circles and develop strategies to find the area of more-complex shapes</li> <li>• develop strategies to determine the surface area and volume of selected prisms, pyramids, and cylinders</li> </ul> <p><b>Benchmark 2</b> Solves problems involving perimeter (circumference) and area of various shapes (e.g., parallelograms, triangles, circles)</p> <p><b>Benchmark 7</b> Understands formulas for finding measures (e.g., area, volume, surface area)</p> <p>3.1 Use variables in expressions describing geometric quantities (e.g., <math>P = 2w + 2l</math>, <math>A = 1/2bh</math>, <math>C = \pi d</math> - the formulas for the perimeter of a rectangle, the area of a triangle, and the circumference of a circle, respectively).</p> <p>4 (B) generate formulas to represent relationships involving perimeter, area, volume of a rectangular prism, etc., from a table of data.</p> <ul style="list-style-type: none"> <li>• solves real-world or mathematical problems involving perimeter or area and how these are affected by changes in the dimensions of the figure.</li> </ul> <p>2.1 Use formulas routinely for finding the perimeter and area of basic two-dimensional figures and the surface area and volume of basic three-dimensional figures, including rectangles, parallelograms, trapezoids, squares, triangles, circles, prisms, and cylinders.</p> <p>4 (A) generate formulas involving conversions, perimeter, area, circumference, volume, and scaling</p>

		Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7, Geometry and spatial reasoning	7 The student is expected to estimate measurements and solve application problems involving length (including perimeter and circumference), area, and volume.
		Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Measurement	<ul style="list-style-type: none"> <li>• solves and explains problems involving perimeter, area, or circumference or the surface area or volume of prisms and cylinders.</li> </ul>
		Texas Essential Knowledge and Skills, 111.24 Mathematics, Grade 8, Measurement	8 (C) estimate answers and use formulas to solve application problems involving surface area and volume.
Patterns	<p><i>Identifies the next number in number patterns based on multiplication facts</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 1: What’s Next?</li> </ul>	NCTM Principles and Standards for School Mathematics, Algebra Standards for Grades 6-8	<ul style="list-style-type: none"> <li>• represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic rules</li> </ul>
	<p><i>Identifies a missing number from a number pattern based on multiplication facts</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 1: What’s Missing?</li> </ul>	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 1, Level III (Grade 6-8)	<p><b>Benchmark 1</b></p> <p>Uses a variety of strategies to understand problem situations (e.g., discussing with peers, stating problems in own words, modeling problem with diagrams or physical objects, identifying a pattern)</p>
	<p><i>Identifies the rule defining a pattern</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 2: You Rule!</li> </ul>	McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 8, Level III (Grade 6-8)	<p><b>Benchmark 10</b></p> <p>Understands the properties of arithmetic and geometric sequences (i.e., linear and exponential patterns)</p>
	<p><i>Identifies the next number in a pattern based on addition and subtraction relationships</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 2: Pattern Plus and Minus</li> </ul>	California State Board of Education K-12 Content Standards, Grade 6 and Grade 7 Mathematics, Mathematical Reasoning	1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.
	<p><i>Determines type of pattern and identifies the next number</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 3: “5” Patterns</li> </ul>	Florida Dept. of Education Sunshine State Standards, Mathematics, Sixth Grade, Algebraic Thinking	<ul style="list-style-type: none"> <li>• describes, predicts, and creates numerical and geometric patterns through models (for example, manipulatives, tables, graphs).</li> <li>• describes relationships and patterns using words, tables, symbols, variables, expressions, or equations.</li> </ul>
	<p><i>Determines type of pattern and identifies number pairs that follow it</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 3: Pattern Pairs</li> </ul>		

		Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7 and Grade 8, Underlying processes and mathematical tools	15 (A)/ 16 (A) make conjectures from patterns or sets of examples and nonexamples
		Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Algebraic Thinking	<ul style="list-style-type: none"> <li>• given instances of a pattern, expresses a generalization of the pattern using algebraic expressions.</li> <li>• given an algebraic expression of a relationship or pattern, supplies specific instances of the relationship or pattern.</li> </ul>
Variables, equations and inequalities	<p><i>Uses computation skills to find the value of a variable in an equality</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 1: Get an “A” in Addition</li> <li>• Algebra Game 1: Additional Equations</li> <li>• Algebra Game 1: Fast Times</li> <li>• Algebra Game 1: Hard Times</li> <li>• Algebra Game 2: “A” Take-Away</li> <li>• Algebra Game 2: Power Equations</li> <li>• Algebra Game 2: Final Jeopardy!</li> </ul> <p><i>Inserts missing symbol in equalities and in equalities</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 1: Secret Symbols</li> </ul> <p><i>Translates a word phrase into a variable expression</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 2: “Very Able” Expressions</li> <li>• Algebra Game 2: Expressions with “Y”</li> <li>• Algebra Game 3: Age-Old Expressions</li> </ul> <p><i>Substitutes a value for a variable in an expression and computes the value of the expression</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 2: M = 4</li> <li>• Algebra Game 3: What’s B?</li> </ul> <p><i>Combines like terms and uses computation to find the value of a variable</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 3: “C” the Solution</li> </ul>	NCTM Principles and Standards for School Mathematics, Algebra Standards for Grades 6-8	<ul style="list-style-type: none"> <li>• develop an initial conceptual understanding of different uses of variables;</li> <li>• recognize and generate equivalent forms for simple algebraic expressions and solve linear equations</li> </ul>
		McRel Content Knowledge Standards and Benchmarks, Mathematics, Standard 8, Level III (Grade 6-8)	<p><b>Benchmark 2</b> Understands that a variable can be used in many ways (e.g., as a placeholder for a specific unknown, such as <math>x + 8 = 13</math>; as a representative of a range of values, such as <math>4t + 7</math>)</p> <p><b>Benchmark 5</b> Solves linear equations using concrete, informal, and formal methods (e.g., using properties, graphing ordered pairs, using slope-intercept form)</p> <p><b>Benchmark 6</b> Solves simple inequalities and non-linear equations with rational number solutions, using concrete and informal methods</p> <p><b>Benchmark 8</b> Understands basic operations (e.g., combining like terms, expanding, substituting for unknowns) on algebraic expressions</p>
		California State Board of Education K-12 Content Standards, Grade 6 Mathematics, Algebra and Functions	<p>1.1 Write and solve one-step linear equations in one variable.</p> <p>1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.</p> <p>3.1 Use variables in expressions describing geometric quantities (e.g., <math>P = 2w + 2l</math>, <math>A = 1/2bh</math>, <math>C = \Pi d</math> - the formulas for the perimeter of a rectangle, the area of a triangle, and the circumference of a circle, respectively).</p>
		Texas Essential Knowledge and Skills, 111.22 Mathematics, Grade 6, Patterns, relationships, and algebraic thinking	<p>(4) The student uses letters as variables in mathematical expressions to describe how one quantity changes when a related quantity changes.</p> <p>(5) The student uses letters to represent an unknown in an equation. The student is expected to formulate an equation from a problem situation.</p>

<p><i>Given an equation, identifies ordered pairs that are solutions</i></p> <ul style="list-style-type: none"> <li>• Algebra Game 3: Possible Pairs</li> <li>• Algebra Game 3: Final Jeopardy!</li> </ul>	<p>Florida Dept. of Education Sunshine State Standards, Mathematics, Sixth Grade, Algebraic thinking</p>	<ul style="list-style-type: none"> <li>• substitutes values for variables in expressions and describes the results or patterns observed.</li> <li>• uses variables to represent numbers and relationships and translates verbal expressions into algebraic expressions.</li> <li>• translates simple algebraic expressions, equations or formulas representing real-world relationships into verbal expressions or sentences.</li> <li>• knows how to solve simple linear equations representing real-world situations, using pictures, models, manipulatives (such as algebra tiles), or other strategies.</li> </ul>
	<p>California State Board of Education K-12 Content Standards, Grade 7 Mathematics, Algebra and Functions</p>	<p>1.1 Use variables and appropriate operations to write an expression, an equation, an inequality, or a system of equations or inequalities that represents a verbal description (e.g., three less than a number, half as large as area A).</p> <p>4.1 Solve two-step linear equations and inequalities in one variable over the rational numbers, interpret the solution or solutions in the context from which they arose, and verify the reasonableness of the results.</p>
	<p>Texas Essential Knowledge and Skills, 111.23 Mathematics, Grade 7, Patterns, relationships, and algebraic thinking</p>	<p>5 (A) use concrete models to solve equations and use symbols to record the actions</p>
	<p>Florida Dept. of Education Sunshine State Standards, Mathematics, Seventh Grade, Algebraic thinking</p>	<ul style="list-style-type: none"> <li>• given an algebraic equation or expression of a real-world application, substitutes integral values for variables and simplifies the results.</li> <li>• simplifies algebraic expressions with one variable.</li> <li>• translates simple algebraic expressions, equations or formulas representing real-world relationships into verbal expressions or sentences.</li> <li>• writes expressions and equations to describe relationships.</li> <li>• translates verbal expressions and sentences into algebraic expressions and equations.</li> <li>• knows how to solve one-step and simple multi-step linear equations and inequalities representing real-world situations, using pictures, models, manipulatives (such as algebra tiles), or other strategies.</li> </ul>

		<p>Florida Dept. of Education Sunshine State Standards, Mathematics, Eighth Grade, Algebraic thinking</p>	<ul style="list-style-type: none"> <li>• uses variables to represent unknown quantities in real-world problems.</li> <li>• writes equations and inequalities to express relationships.</li> <li>• translates verbal expressions and sentences into algebraic expressions, equations, and inequalities.</li> <li>• solves single- and multiple-step linear equations and inequalities in concrete or abstract form.</li> <li>• evaluates algebraic expressions, equations, and inequalities by substituting integral values for variables and simplifying the results.</li> <li>• simplifies algebraic expressions that represent real-world situations by combining like terms and applying the properties of real numbers.</li> <li>• simplifies algebraic expressions with a maximum of two variables.</li> </ul>
		<p>Florida Dept. of Education Sunshine State Standards, Mathematics, Eighth Grade, Geometry and spatial sense</p>	<ul style="list-style-type: none"> <li>• given an equation or its graph, finds ordered-pair solutions (for example, <math>y = 2x</math>).</li> </ul>
		<p>California State Board of Education K-12 Content Standards, Grade 8-12 Mathematics, Algebra I</p>	<p><b>4.0</b> Students simplify expressions before solving linear equations and inequalities in one variable, such as <math>3(2x-5) + 4(x-2) = 12</math>.</p>