



Alignment Document

State of Wisconsin And Aventa Learning Pre-Algebra

Pre-Algebra 2005-2007 Benchmark Blueprint

State Standard Number	State Standard Area / Description	Unit Name	Course Topic Description
A.8	Mathematical Processes		
A.8.1	Use reasoning abilities to		
A.8.1.a	evaluate information	Basics	Integer Math
		Fractions	Addition and Subtraction
		Decimals and Percents	Decimals
		Decimals and Percents	Percents
		Number Basics	Significant Digits
		Number Basics	Introduction
		Equations	Solving Simple Equations
		Equations	Linear Equations
		Polynomials	Evaluating Polynomials
A.8.1.b	perceive patterns		
A.8.1.c	identify relationships	Number Basics	Number Properties
A.8.1.d	formulate questions for further exploration		
A.8.1.e	evaluate strategies		
A.8.1.f	justify statements	Basics	Integer Math
		Fractions	Addition and Subtraction
		Decimals and Percents	Decimals
		Decimals and Percents	Percents
		Number Basics	Significant Digits
		Number Basics	Introduction
		Equations	Solving Simple Equations
		Equations	Linear Equations
A.8.1.g	test reasonableness of results		
A.8.1.h	defend work	Basics	Integer Math
		Fractions	Addition and Subtraction
		Decimals and Percents	Decimals
		Decimals and Percents	Percents

		Number Basics	Significant Digits
		Number Basics	Introduction
		Equations	Solving Simple Equations
		Equations	Linear Equations
A.8.2	Communicate logical arguments clearly to show why a result makes sense	Basics	Integer Math
		Fractions	Addition and Subtraction
		Decimals and Percents	Decimals
		Decimals and Percents	Percents
		Number Basics	Significant Digits
		Number Basics	Introduction
		Equations	Solving Simple Equations
		Equations	Linear Equations
A.8.3	Analyze non-routine problems by modeling, illustrating, guessing, simplifying, generalizing, shifting to another point of view, etc.		
A.8.4	Develop effective oral and written presentations that include		
A.8.4.a	appropriate use of technology		
A.8.4.b	the conventions of mathematical discourse (e.g., symbols, definitions, labeled drawings)	Basics	Integer Math
		Fractions	Addition and Subtraction
		Decimals and Percents	Decimals
		Decimals and Percents	Percents
		Number Basics	Significant Digits
		Number Basics	Introduction
		Equations	Solving Simple Equations
		Equations	Linear Equations
		Polynomials	Evaluating Polynomials
		Probability and Data Analysis	Data Analysis Projects
A.8.4.c	mathematical language	Basics	Integer Math
		Fractions	Addition and Subtraction
		Decimals and Percents	Decimals
		Decimals and Percents	Percents
		Number Basics	Significant Digits
		Number Basics	Introduction
		Equations	Solving Simple Equations
		Equations	Linear Equations
		Polynomials	Evaluating Polynomials
		Probability and Data Analysis	Data Analysis Projects



A.8.4.d	clear organization of ideas and procedures	Basics	Integer Math
		Fractions	Addition and Subtraction
		Decimals and Percents	Decimals
		Decimals and Percents	Percents
		Number Basics	Significant Digits
		Number Basics	Introduction
		Equations	Solving Simple Equations
		Equations	Linear Equations
		Polynomials	Evaluating Polynomials
		Probability and Data Analysis	Data Analysis Projects
A.8.4.e	understanding of purpose and audience	Basics	Integer Math
		Fractions	Addition and Subtraction
		Decimals and Percents	Decimals
		Decimals and Percents	Percents
		Number Basics	Significant Digits
		Number Basics	Introduction
		Equations	Solving Simple Equations
		Equations	Linear Equations
		Polynomials	Evaluating Polynomials
		Probability and Data Analysis	Data Analysis Projects
A.8.5	Explain mathematical concepts, procedures, and ideas to others who may not be familiar with them	Basics	Integer Math
		Fractions	Addition and Subtraction
		Decimals and Percents	Decimals
		Decimals and Percents	Percents
		Number Basics	Significant Digits
		Number Basics	Introduction
		Equations	Solving Simple Equations
		Equations	Linear Equations
		Polynomials	Evaluating Polynomials
		Probability and Data Analysis	Data Analysis Projects
A.8.6	Read and understand mathematical texts and other instructional materials and recognize mathematical ideas as they appear in other contexts		



B.8	Number Operations and Relationships		
B.8.1	Read, represent, and interpret various rational numbers (whole numbers, integers, decimals, fractions, and percents) with verbal descriptions, geometric models, and mathematical notation (e.g., expanded, scientific, exponential)	Basics	Integer Math
		Basics	Absolute Value
		Basics	Exponents
		Fractions	Multiplying and Dividing
		Fractions	Adding and Subtracting
		Fractions	Negative Exponents
		Decimals and Percents	Decimals
		Decimals and Percents	Percents
		Number Basics	Rounding
		Number Basics	Significant Digits
		Equations	Solving Simple Equations
		Equations	Linear Equations
		Polynomials	Evaluating Polynomials
		Polynomials	Adding and Subtracting
		Polynomials	Multiplying
		Factoring and Geometric Formulas	Factoring
		Factoring and Geometric Formulas	Geometric Formulas
		Probability and Data Analysis	Probability Data Analysis Projects
B.8.2	Perform and explain operations on rational numbers (add, subtract, multiply, divide, raise to a power, extract a root, take opposites and reciprocals, determine absolute value)	Basics	Integer Math
		Basics	Absolute Value
		Basics	Exponents
		Fractions	Multiplying and Dividing
		Fractions	Adding and Subtracting
		Fractions	Negative Exponents
		Decimals and Percents	Decimals
		Decimals and Percents	Percents
		Number Basics	Rounding
		Number Basics	Significant Digits
		Equations	Solving Simple Equations

		Equations	Linear Equations
		Polynomials	Evaluating Polynomials
		Polynomials	Adding and Subtracting
		Polynomials	Multiplying
		Factoring and Geometric Formulas	Factoring
		Factoring and Geometric Formulas	Geometric Formulas
		Probability and Data Analysis	Probability Data Analysis Projects
B.8.3	Generate and explain equivalencies among fractions, decimals, and percents	Decimals and Percents	Decimals
		Decimals and Percents	Percents
B.8.4	Express order relationships among rational numbers using appropriate symbols ($>$, $<$, "greater than or equal to", "less than or equal to", "not equal to")		
B.8.5	Apply proportional thinking in a variety of problem situations that include, but are not limited to		
B.8.5.a	ratios and proportions (e.g., rates, scale drawings, similarity)		
B.8.5.b	percents, including those greater than 100 and less than one (e.g., discounts, rate of increase or decrease, sales tax)	Decimals and Percents	Percents
		Word Problems	Strategies
B.8.6	Model and solve problems involving number-theory concepts such as		
B.8.6.a	prime and composite numbers	Basics	Factors
B.8.6.b	divisibility and remainders	Basics	Factors
B.8.6.c	greatest common factors	Basics	Factors
B.8.6.d	least common multiples	Basics	Factors
B.8.7	In problem-solving situations, select and use appropriate computational procedures with rational numbers such as		
B.8.7.a	calculating mentally		
B.8.7.b	estimating	Number Basics	Rounding
B.8.7.c	creating, using, and explaining algorithms	Basics	Integer Math
		Fractions	Addition and Subtraction
		Decimals and Percents	Decimals
		Decimals and Percents	Percents



		Number Basics	Significant Digits
		Number Basics	Introduction
		Equations	Solving Simple Equations
		Equations	Linear Equations
		Polynomials	Evaluating Polynomials
B.8.7.d	using technology (e.g., scientific calculators, spreadsheets)		
D.8	Measurement		
D.8.1	Identify and describe attributes in situations where they are not directly or easily measurable (e.g., distance, area of an irregular figure, likelihood of occurrence)		
D.8.2	Demonstrate understanding of basic measurement facts, principles, and techniques including the following		
D.8.2.a	approximate comparisons between metric and US Customary units (e.g., a liter and a quart are about the same; a kilometer is about six-tenths of a mile)		
D.8.2.b	knowledge that direct measurement produces approximate, not exact, measures		
D.8.2.c	the use of smaller units to produce more precise measures		
D.8.3	Determine measurement directly using standard units (metric and US Customary) with these suggested degrees of accuracy		
D.8.3.a	lengths to the nearest mm or 1/16 of an inch		
D.8.3.b	weight (mass) to the nearest 0.1 g or 0.5 ounce		
D.8.3.c	liquid capacity to the nearest ml		
D.8.3.d	angles to the nearest degree		
D.8.3.e	temperature to the nearest C° or F°		
D.8.3.f	elapsed time to the nearest second		
D.8.4	Determine measurements indirectly using		
D.8.4.a	estimation		
D.8.4.b	conversion of units within a system (e.g., quarts to cups, millimeters to centimeters)		
D.8.4.c	ratio and proportion (e.g., similarity, scale drawings)		

D.8.4.d	geometric formulas to derive lengths, areas, volumes of common figures (e.g., perimeter, circumference, surface area)	Factoring and Geometric Formulas	Geometric Formulas
D.8.4.e	the Pythagorean relationship	Factoring and Geometric Formulas	Geometric Formulas
D.8.4.f	geometric relationships and properties for angle size (e.g., parallel lines and transversals; sum of angles of a triangle; vertical angles)		
E.8	Statistics and Probability		
E.8.1	Work with data in the context of real-world situations by		
E.8.1.a	formulating questions that lead to data collection and analysis	Probability and Data Analysis	Data Analysis Projects
E.8.1.b	designing and conducting a statistical investigation	Probability and Data Analysis	Data Analysis Projects
E.8.1.c	using technology to generate displays, summary statistics, and presentations		
E.8.2	Organize and display data from statistical investigations using		
E.8.2.a	appropriate tables, graphs, and/or charts (e.g., circle, bar or line for multiple sets of data)	Probability and Data Analysis	Probability
E.8.2.b	appropriate plots (e.g., line, stem-and-leaf, box, scatter)	Probability and Data Analysis	Probability
E.8.3	Extract, interpret, and analyze information from organized and displayed data by using		
E.8.3.a	frequency and distribution, including mode and range	Probability and Data Analysis	Probability
E.8.3.b	central tendencies of data (mean and median)	Probability and Data Analysis	Probability
E.8.3.c	indicators of dispersion (e.g., outliers)		
E.8.4	Use the results of data analysis to		
E.8.4.a	make predictions		
E.8.4.b	develop convincing arguments		
E.8.4.c	draw conclusions		
E.8.5	Compare several sets of data to generate, test, and, as the data dictate, confirm or deny hypotheses		

E.8.6	Evaluate presentations and statistical analyses from a variety of sources for		
E.8.6.a	credibility of the source		
E.8.6.b	techniques of collection, organization, and presentation of data	Probability and Data Analysis	Data Analysis Projects
E.8.6.c	missing or incorrect data		
E.8.6.d	inferences		
E.8.6.e	possible sources of bias		
E.8.7	Determine the likelihood of occurrence of simple events by		
E.8.7.a	using a variety of strategies to identify possible outcomes (e.g., lists, tables, tree diagrams)		
E.8.7.b	conducting an experiment	Probability and Data Analysis	Data Analysis Projects
E.8.7.c	designing and conducting simulations	Probability and Data Analysis	Data Analysis Projects
E.8.7.d	applying theoretical notions of probability (e.g., that four equally likely events have a 25% chance of happening)	Probability and Data Analysis	Probability
F.8	Algebraic Relationships		
F.8.1	Work with algebraic expressions in a variety of ways, including		
F.8.1.a	using appropriate symbolism, including exponents and variables	Polynomials	Definitions
F.8.1.b	evaluating expressions through numerical substitution	Polynomials	Evaluating Polynomials
F.8.1.c	generating equivalent expressions	Polynomials	Adding and Subtracting
		Polynomials	Multiplying
		Factoring and Geometric Formulas	Factoring
F.8.1.d	adding and subtracting expressions	Polynomials	Adding and Subtracting
F.8.2	Work with linear and nonlinear patterns and relationships in a variety of ways, including		
F.8.2.a	representing them with tables, with graphs, and with algebraic expressions, equations, and inequalities	Equations	Solving Simple Equations
		Equations	Solving Linear Equations
F.8.2.b	describing and interpreting their graphical representations (e.g., slope, rate of change, intercepts)	Equations	Solving Linear Equations

F.8.2.c	using them as models of real-world phenomena		
F.8.2.d	describing a real-world phenomenon that a given graph might represent		
F.8.3	Recognize, describe, and analyze functional relationships by generalizing a rule that characterizes the pattern of change among variables. These functional relationships include exponential growth and decay (e.g., cell division, depreciation)		
F.8.4	Use linear equations and inequalities in a variety of ways, including		
F.8.4.a	writing them to represent problem situations and to express generalizations		
F.8.4.b	solving them by different methods (e.g., informally, graphically, with formal properties, with technology)	Equations	Solving Linear Equations
F.8.4.c	writing and evaluating formulas (including solving for a specified variable)	Equations	Solving Linear Equations
		Factoring and Geometric Formulas	Geometric Formulas
F.8.4.d	using them to record and describe solution strategies		
F.8.5	Recognize and use generalized properties and relations, including		
F.8.5.a	additive and multiplicative property of equations and inequalities	Number Basics	Number Properties
F.8.5.b	commutativity and associativity of addition and multiplication	Number Basics	Number Properties
F.8.5.c	distributive property	Number Basics	Number Properties
F.8.5.d	inverses and identities for addition and multiplication		
F.8.5.e	transitive property		