Integrated Math

Standards	Benchmarks	Unit Name	Course Topic Description
1 Students engage in the mathematical processes of problem solving and reasoning, estimation, communication, connections and applications, and using appropriate technology.	**1.1** recognizes and formulates problems from situations within and outside mathematics and applies solution strategies to those problems.	Word Problem	Strategies
			Problem Solving
	1.2 select, apply, and evaluate appropriate estimation strategies throughout the problem-solving process.	Number Sense	Single-Step Estimation
		Operations	Number Sense Problem Solving
	1.3 formulates definitions, make and justify inferences, express generalizations, and communicate mathematical ideas and relationships.	Word Problem	Problem Solving
	1.4 applies and translates among different representations of the same problem situation or of the same mathematical concept. Model connections between problem situations that arise in disciplines other than mathematics.	Word Problem	Strategies
			Problem Solving
	1.5 Select and use appropriate technology to enhance mathematical understanding. Appropriate technology may include, but is not limited to, paper and pencil, calculator, computer, and data collection devices.	Operations	Overview
		Number Sense	Overview
2 Students demonstrate understanding of and an ability to use numbers and operations.	**2.1** use and understand the real number system, its operations, notations, and the various subsystems.	Number Sense	Integers
		Operations	Overview
	2.2 use definitions and basic operations of the complex number system.	Operations	Number Sense Problem Solving
		Number Sense	Integers
3 Students use algebraic concepts, processes, and language to model and solve a variety of real-world and mathematical	**3.1** use algebra to represent patterns of change.	Algebraic Sense	Overview
	3.2 use basic operations with algebraic expressions.	Algebraic Sense	Intro to Algebraic Expressions
	3.3 solve algebraic equations and inequalities: linear, quadratic, exponential, logarithmic, and power.	Algebraic Sense	Inequalities
			Solving Two-Step Equations

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problems.	**3.4** solve systems of algebraic equations and inequalities, including use of matrices.	Algebraic Sense	Inequalities
			Solving Two-Step Equations
	3.5 use algebraic models to solve mathematical and real-world problems.	Algebraic Sense	Overview
		Word Problems	Problem Solving
4 Students demonstrate understanding of shape and an ability to use geometry.	**4.1** construct, interpret, and draw three-dimensional objects.	Geometric Figures	Overview
	4.2 classify figures in terms of congruence and similarity and apply these relationships.	Geometric Figures	Triangles
			congruence
	4.3 translate between synthetic and coordinate representations.	Geometric Movement	Coordinate; Overview
	4.4 deduce properties of figures using transformations, coordinates, and vectors in problem solving.	Geometric Movement	Overview
			Transformations
	4.5 apply trigonometric ratios (sine, cosine and tangent) to problem situations involving triangles.	Geometric Figures	Triangles
5 Students demonstrate understanding of measurable attributes and an ability to use measurement processes.	**5.1** apply concepts of indirect measurements (e.g., using similar triangles to calculate a distance).	Geometric Figures	Triangles
	5.2 use dimensional analysis to check reasonableness of procedures.	Geometric Figures	Overview
	5.3 investigate systems of derived measures (e.g., km/sec, g/cm^3).	Measurement	Overview
			Unit Conversions
	5.4 apply the appropriate concepts of estimates in measurement, error in measurement, tolerance, and precision.	Operations	Estimation
		Measurement	Estimation
6 The students demonstrate understanding of and an ability to use data analysis, probability,	**6.1** use curve fitting to make predictions from data.	Intro to Probability	Overview
	6.2 apply measures of central tendency and demonstrate understanding of the concepts of variability and correlation.	Introduction to Probability	Mean, Median, and Mode

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and statistics.	**6.3** select an appropriate sampling method for a given statistical analysis.	Introduction to Probability	Experimental Probability
			Theoretical Probability
	6.4 use experimental probability, theoretical probability, and simulation methods to represent and solve problems, including expected values.	Introduction to Probability	Experimental Probability
			Theoretical Probability
			Overview
	6.5 design a statistical experiment to study a problem and communicate the outcomes.	Introduction to Probability	Experimental Probability
	6.6 describe, in general terms, the normal curve and use its properties to answer questions about sets of data that are assumed to be normally distributed.	Probability 2	Overview
7 Students demonstrate understanding of and an ability to use patterns, relations and functions.	**7.1** describe functions and their inverses using graphical, numerical, physical, algebraic, and verbal mathematical models or representations.	Algebraic Sense	Overview
	7.2 analyze the graphs of the families of polynomial, rational, power, exponential, logarithmic, and periodic functions.	Algebraic Sense	Solving Systems of Equations
			Graph Lines and Inequalities
	7.3 analyze the effects of parameter changes on the graphs of functions and relations, including translations.	Algebraic Sense	Overview
			Graph Lines and Inequalities
	7.4 model real-world phenomena with a variety of functions.	Algebraic Sense	Overview
	7.5 use graphing for parametric equations, three-dimensional equations, and recursive relations.	Algebraic Sense	Graphing Equations & Inequalities
			Overview