

Idaho Content Standards Grade 10 Mathematics Alignment Document

The 10th Grade ISAT will remain unchanged as the new course specific standards are implemented. Therefore, this document serves as a resource for teachers to make a smooth transition to use course specific standards. The Grade 10 Standards determine the assessed content for the 10th Grade ISAT.

The Grade 10 Standards are addressed in the Grade 8, Algebra I, and Geometry standards. This guide correlates the objectives being tested on the 10th Grade ISAT to the Grade 8 (8.M), Algebra I (AI), and Geometry (G) standards. The percentages shown in the left column indicate the distribution of questions as indicated on the ISAT Grade 10 Test Blueprint.

Standard	Goal	10 th Grade Objective	Corresponding Objectives
1. Number and Operation (13-18% of 10 th Grade ISAT questions address this standard.)	1.1 Understand and use numbers.	10.M.1.1.1 Apply properties of rational numbers.	8.M.3.2.1 AI.1.3.1
		10.M.1.1.2 Use positive and negative numbers, absolute value, fractions, decimals, percentages, and scientific notation, including application in real-world situations.	8.M.1.1.2 8.M.1.1.4 AI.1.1.1 AI.1.1.2
		10.M.1.1.3 Apply properties of exponents.	8.M.1.2.3 AI.1.3.1
		10.M.1.1.4 Identify exact and approximate roots without simplification.	8.M.1.2.4 AI.1.1.1 AI.1.2.1
		10.M.1.1.5 Solve problems using number theory concepts (factors, multiples, primes).	8.M.1.1.5
		10.M.1.1.6 Use appropriate vocabulary.	Not assessed on ISAT.
	1.2 Perform computations accurately.	10.M.1.2.1 Use the order of operations and perform operations with rational numbers.	8.M.1.2.4 AI.1.3.1
	1.3 Estimate and judge reasonableness of results.	10.M.1.3.1 Apply number sense to everyday situations and judge reasonableness of results.	Not assessed on ISAT.
		10.M.1.3.2 Identify that error accumulates in a computation when there is rounding.	Not assessed on ISAT.

Standard	Goal	10 th Grade Objective	Corresponding Objectives
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2. Concepts and Principles of Measurement (13-16% of 10 th Grade ISAT questions address this standard.)	2.1 Understand and use customary and metric measurements.	10.M.2.1.1 Given the formulas, find the circumference, perimeter, or area of triangles, circles, and quadrilaterals, the volume of spheres, non-oblique prisms, cylinders, and cones, and the surface area of spheres, non-oblique prisms, cylinders, and right square-based pyramids.	8.M.2.1.4 G.2.2.1	
		10.M.2.1.2 Solve problems involving circumference, perimeter, or area of triangles, circles, and rectangles.	8.M.2.1.4 8.M.2.1.6 G.2.2.1	
	2.2 Apply the concepts of rates, ratios, and proportions.	10.M.2.2.1 Use rates, ratios, proportions, map scales, and scale factors (one- and two-dimensional) in problem-solving situations.	8.M.2.2.1 8.M.2.2.2 AI.2.2.1 AI.3.3.1 G.4.1.2	
		10.M.2.2.2 Apply concepts of rates and direct and indirect measurements.	Not assessed on ISAT.	
		10.M.2.2.3 Construct equivalent units, comparable units, and conversions.	8.M.2.3.1 AI.2.2.1	
	2.3 Apply dimensional analysis.	10.M.2.3.1 Use customary and metric units and their relationship to one another and to real world applications involving length, area, capacity, weight, time, and temperature.	8.M.2.3.1 AI.2.2.1	
	2.4 Apply appropriate techniques and tools to determine measurements.	10.M.2.4.1 Determine and use appropriate units.	8.M.2.2.2 G.2.1.1	
		10.M.2.4.2 Approximate error in measurement situations.	Not assessed on ISAT.	
	3. Concepts and Language of Algebra and Functions (27-31% of 10 th Grade ISAT questions address this standard.)	3.1 Use algebraic symbolism as a tool to represent mathematical relationships.	10.M.3.1.1 Represent mathematical relationships using variables, expressions, linear equations and inequalities.	8.M.3.1.2 AI.3.2.1
		3.2 Evaluate algebraic expressions.	10.M.3.2.1 Use appropriate procedures for manipulating and simplifying algebraic expressions involving variables, integers, and rational numbers.	8.M.3.1.1 8.M.3.2.2 8.M.3.2.3 AI.1.3.1
3.3 Solve algebraic equations and inequalities.		10.M.3.3.1 Use appropriate procedures to solve multi-step, first-degree equations and inequalities; such as $3(2x - 5) = 5x + 7$ or $3(2x - 5) > 5x + 7$.	8.M.3.3.1 AI.3.2.2	
		10.M.3.3.2 Differentiate between linear and non-linear equations and graphs.	AI.3.1.2	

Standard	Goal	10th Grade Objective	Corresponding Objectives
3. Concepts and Language of Algebra and Functions (continued)	3.4 Solve simple linear systems of equations.	10.M.3.4.1 Use appropriate procedures to solve linear systems of equations involving two variables; such as $x + y = 7$ and $2x + 3y = 21$.	AI.3.2.2
	3.5 Understand the concept of functions.	10.M.3.5.1 Given graphs, charts, ordered pairs, mappings, or equations, determine whether a relation is a function.	Not assessed on ISAT.
		10.M.3.5.2 Evaluate functions written in functional notation.	Not assessed on ISAT.
		10.M.3.5.3 Given a function, identify domain and range.	Not assessed on ISAT.
	3.6 Use patterns to represent problems.	10.M.3.6.1 Model and solve real-world phenomena using multi-step, first degree, single variable equations and inequalities, linear equations, and two-variable linear systems of equations.	8.M.3.1.2 AI.3.2.1 AI.3.2.2
		10.M.3.6.2 Use graphs and sequences to represent and solve problems.	8.M.3.5.1 8.M.3.6.1 AI.3.1.1 AI.5.2.2
4. Concepts and Principles of Geometry (18-22% of 10 th Grade ISAT questions address this standard.)	4.1 Apply concepts of size, shape, and spatial relationships.	10.M.4.1.1 Recognize and apply congruency and similarity of two-dimensional figures.	8.M.4.1.5 G.4.1.3
		10.M.4.1.2 Recognize and use similarity as it relates to size variations in two- and three-dimensional objects.	8.M.4.1.5 G.4.1.1 G.4.1.2 (Include three dimensional figures to align with 10M.4.1.2.)
	4.2 Apply the geometry of right triangles.	10.M.4.2.1 Given the Pythagorean Theorem, calculate missing side lengths of right triangles without simplifying radicals.	G.2.2.2
	4.3 Apply graphing in two dimensions.	10.M.4.3.1 Identify attributes of the Cartesian Coordinate System, such as quadrants, origin, and axes.	8.M.4.3.1 AI.3.1.1
		10.M.4.3.2 Graph scatter plots and identify informal trend lines (e.g., eyeball fit lines).	8.M.5.2.1 AI.5.2.2
		10.M.4.3.3 Identify positive and negative correlations.	Not assessed on ISAT.

Standard	Goal	10th Grade Objective	Corresponding Objectives
4. Concepts and Principles of Geometry (continued)	4.4 Represent and graph linear relationships.	10.M.4.4.1 Create graphs and equations for linear relationships.	Not assessed on ISAT.
		10.M.4.4.2 Represent linear relationships using tables, graphs, and mathematical symbols.	8.M.3.3.2 8.M.5.2.1 AI.3.1.1 AI.3.2.1
		10.M.4.4.3 Interpret attributes of linear relationships such as slope, rate of change, and intercepts.	8.M.3.3.2 AI.3.4.1 G.3.1.1
	4.5 Using reasoning skills.	10.M.4.5.1 Use logic to make and evaluate mathematical arguments.	AI.5.2.2 G.4.1.3
5. Data Analysis, Probability, and Statistics (18-22% of 10 th Grade ISAT questions address this standard.)	5.1 Understand data analysis.	10.M.5.1.1 Analyze and interpret tables, charts, and graphs, including scatter plots, multiple broken line graphs, and box-and-whisker plots.	8.M.5.1.1 AI.5.2.1 (Include box and whisker plots to align with 10M.5.1.1.)
	5.2 Collect, organize, and display data.	10.M.5.2.1 Collect, organize, and display data in tables, charts, and graphs.	8.M.5.2.1 AI Standard 5 Introductory Paragraph.
	5.3 Apply simple Statistical measurements.	10.M.5.3.1 Interpret and use basic statistical concepts, including mean, median, mode, range, and distribution of data, including outliers.	8.M.5.3.1 8.M.5.3.2
		10.M.5.3.2 Make predictions and draw conclusions based on statistical measures.	AI.5.2.1
	5.4 Understand basic concepts of probability.	10.M.5.4.1 Find probabilities based on dependent, independent, and compound events.	8.M.5.4.2 8.M.5.5.1 Dependent compound events are not assessed on the ISAT.
		10.M.5.4.2 Contrast experimental and theoretical probability.	8.M.5.5.1
	5.5 Make predictions or decisions based on data.	10.M.5.5.1 Make predictions based on randomness, chance, equally likely events, and probability.	8.M.5.4.2 8.M.5.5.1
		10.M.5.5.2 Use appropriate tools/technology to conduct simulations and employ graphical models to make predictions or decisions based on data.	Not assessed on ISAT.
10.M.5.5.3 Design, conduct, and interpret results of statistical experiments.		Not assessed on ISAT.	