High School Mathematics Essential Standards

Foundational Standards Quick Guide

This document outlines the essential standards for foundations mathematics courses in Idaho high schools. These courses would typically be taken in the first two years of high school. Thus, these essential foundational standards can be taught over a two-year period. These are standards students will use in all future mathematics courses and most work experiences.

Essential standards are explicitly taught, assessed more than once, and intervened upon if students have not yet reached proficiency. Assessment can be both formative and summative. Intervention means that within your class, you will support students who are not yet proficient

All of the Idaho Content Standards can be found in the Essential Standards Extended Guide as well as sample Instructional Groupings.

In Idaho, school districts can choose between Integrated Mathematics 1 and Integrated Mathematics 2 as their first two years of high-school mathematics coursework or Algebra 1 and Geometry. If a high school is using the Algebra 1 and Geometry course sequence, they will need to integrate the essential foundational statistics standards into those courses in order to prepare students for advanced mathematics courses.

Foundational Mathematics Essential Standards
A.SSE.A.1   Interpret expressions that represent a quantity in terms of its context. ★
A.SSE.B.3   Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.
A.APR.A.1   Demonstrate understanding that polynomials form a system analogous to the integers; namely, they are closed under certain operations.
A.APR.A.1a   Perform operations on polynomial expressions (addition, subtraction, equations and inequalities to solve problems, including linear, quadratic, rational, and exponential functions.
A.CED.A.2 - Interpret the relationship between two or more quantities.
A.CED.A.2a   Define variables to represent the quantities and write equations to show the relationship.
A.CED.A.2b   Use graphs to show a visual representation of the relationship while adhering to appropriate labels and scales.

Foundational Mathematics Essential Standards
A.CED.A.3 - Represent constraints using equations or inequalities and interpret solutions as viable or non-viable options in a modeling context.
A.CED.A.4 - Represent constraints using systems of equations and/or inequalities and interpret solutions as viable or non-viable options in a modeling context.
A.REI.A.1   Create one-variable equations and inequalities to solve problems, including linear, quadratic, rational, and exponential functions.
A.REI.B.3   Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
A.REI.C.6 - Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.
F.IF.A.2   Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
F.IF.B.4   For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maxima and minima; symmetries; end behavior; and periodicity.
F.IF.B.6   Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.★
F.IF.C.7 - Graph functions expressed symbolically and show key features of the graphs, by hand in simple cases and using technology for more complicated cases.★
F.BF.A.1   Write a function that describes a relationship between two quantities. Functions could include linear, exponential, quadratic, simple rational, radical, logarithmic, and trigonometric.
F.LE.A.2   Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (including reading these from a table).★
G.CO.B.7   Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.
G.SRT.A.2   Use the definition of similarity to decide if two given figures are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.
G.SRT.C.6. Demonstrate understanding that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.
G.GMD.A.3   Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.★
S.ID.A.3   Compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different variables, using statistics appropriate to the shape of the distribution for each measurement variable.★

Foundational Mathematics Essential Standards
S.ID.B.7   Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.
S.IC.A.1   Understand statistics as a process for making inferences about population parameters based on a random sample from that population.★

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