

Measures of Academic Progress (MAP) Washington State-Aligned Algebra I End of Course Version 1

The NWEA Goal Structure is a document that represents the content and structure of a state's standards documents. Goal structures are created through an alignment process that links state standards documents to the NWEA item bank. The MAP tests and associated reports for teachers and students are based upon this structure and alignment.

The alignment process begins with a thorough review of a state's standards documents by NWEA's curriculum specialists. The general goal areas or strands within a state's standards that appear across grade levels become the goals in the goal structure (indicated below as bold). Areas in a state's standards documents that are determined to be sub-domains of the goals/strands become the sub-goals in the goal structure (indented under each goal below).

Goal and sub-goal names from the Goal Structure are shortened for technical reasons to create the headings in DesCartes. Report Names are shortened further to accommodate report specifications.

Algebra I Goal Structure	Algebra I DesCartes	Algebra I Report Names
Numbers and Expressions	Numbers and Expressions	Numbers and Expressions
Students see the number system extended to the real numbers represented by the number line: Know the relationship between real numbers and the number line, and compare and order real numbers with and without the number line; use integers to represent quantities in various contexts.	Compare and Order Real Numbers	
Students write and manipulate a wide variety of algebraic expressions: Interpret and use integer exponents and square and cube roots, and apply the laws and properties of exponents to simplify and evaluate exponential expressions; recognize the multiple uses of variables, determine all possible values of variables that satisfy prescribed conditions, and evaluate algebraic expressions that involve variables; factor and combine like terms in polynomials; add, subtract, multiply, and divide polynomials.	Variables and Expressions	

Functions	Functions	Functions
<p>Students formalize and deepen their understanding of functions, the defining characteristics and uses of functions, and the mathematical language used to describe functions: Determine whether a relationship is a function and identify the domain, range, roots, and independent and dependent variables; represent a function with a symbolic expression, a graph, a table, and using words, and make connections among these representations; evaluate $f(a)$ and solve for x in the equation $f(x) = b$; select functions and equations to model and solve problems; express arithmetic and geometric sequences in explicit and recursive forms, and use the forms to find specific terms in the sequence.</p>	<p>Characteristics and Behaviors of Functions</p>	
<p>Students understand that linear functions can be used to model situations involving a constant rate of change: Use linear functions to analyze relationships, represent, model, and solve problems; write and solve linear equations and inequalities; graph an equation for a line, and translate between forms of linear equations; determine whether a verbal description, table, graph, or symbolic expression represents a linear relationship; determine and interpret the slope and y-intercept of a linear function; describe how changes in the parameters of linear functions and functions containing an absolute value of a linear expression affect their graphs; write and solve systems of two linear equations and inequalities.</p>	<p>Linear Functions, Equations, and Inequalities</p>	

<p>Students study quadratic functions and their graphs, and solve quadratic equations with real roots: Use exponential functions to analyze relationships, represent and model problems; represent a quadratic function with a symbolic expression, as a graph, in a table, and with a description, and make connections among the representations; solve problems that can be represented by quadratic and exponential functions and equations; describe the effects that changes in the parameters have on the graph, and interpret the x-intercepts as solutions to a quadratic equation; solve quadratic equations that can be factored; solve quadratic equations by completing the square and by using the quadratic formula; find and approximate solutions to exponential equations; solve an equation involving several variables by expressing one variable in terms of the others.</p>	<p>Quadratic and Exponential Functions and Equations</p>	
<p>Data and Distributions</p>	<p>Data and Distributions</p>	<p>Data and Distributions</p>
<p>Students select mathematical models for data sets and use those models to represent, describe, and compare data sets: Analyze data to determine the relationship between two variables and make appropriate predictions, conjectures, and generalizations; summarize and compare data sets in terms of variability and measures of center; construct and interpret histograms, stem-and-leaf plots, and circle graphs; construct and analyze box-and-whisker plots; use and evaluate the accuracy of summary statistics to describe and compare data sets; make valid inferences and draw conclusions based on data; describe how linear transformations affect the center and spread of univariate data; create a scatterplot; find the equation of a linear function that best fits bivariate data, and use the equation to make predictions; describe the correlation of data in scatterplots.</p>	<p>Represent, Describe and Compare Data Sets</p>	