

Measures of Academic Progress (MAP) Alaska State-Aligned Version 5

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.

Mathematics 2-5 Goal Structure	Mathematics 2-5 DesCartes	Mathematics 2-5 Report Names
Numeration	Numeration	Numeration
The student demonstrates conceptual understanding of whole numbers by using appropriate representations of ordinal or cardinal numbers; by reading, writing, ordering, or counting; by comparing whole numbers; by modeling or identifying place value positions; by converting between whole numbers written in expanded notation and standard form; the student demonstrates conceptual understanding of positive fractions and percents by modeling, identifying, or illustrating equal parts of a whole, a region, or a set; by modeling, identifying, or illustrating equivalent fractions or mixed numbers.	Understanding Numbers	
The student demonstrates conceptual understanding of mathematical operations by describing or illustrating the processes of addition and subtraction of whole numbers and their relationships; the processes of multiplication; the relationship between multiplication and addition; the process of division and its relationship to subtraction or to multiplication; the process of adding or subtracting fractions; the process of adding or subtracting decimals.	Understanding Meaning of Operations	

<p>The student demonstrates conceptual understanding of number theory by demonstrating skip counting; by identifying odd and even numbers; by identifying fact families; by describing or illustrating commutative or identity properties of addition or multiplication; by identifying or listing factors and multiples of a number; by identifying or listing factors and multiples common to a pair or set of numbers.</p>	<p>Number Theory</p>	
<p>Measurement</p>	<p>Measurement</p>	<p>Measurement</p>
<p>The student demonstrates understanding of measurable attributes by comparing and ordering objects by length, weight, area, time, temperature, area, or volume; by measuring and/or comparing objects using standard and nonstandard units; by estimating length, temperature or weight; by selecting an appropriate unit of English, metric, or non-standard measurement to estimate the length, time, weight, or temperature; by identifying or using equivalent measures for length, weight/mass, or time; by identifying coins, their value, or the value of a set of coins.</p>	<p>Measurable Attributes</p>	
<p>The student demonstrates ability to use measurement techniques by selecting and using appropriate tools of measurement; by measuring length; by reading a calendar; by telling time using analog and digital clocks; by determining elapsed time; by identifying equal values of a coin; by determining possible combinations of coins and bills to given amounts; by counting back change.</p>	<p>Measurement Techniques</p>	

Estimation and Computation	Estimation and Computation	Estimation and Computation
<p>The student determines reasonable answers to real-life situations, paper/pencil computations, or calculator results by finding "how many" or "how much"; by identifying whether estimation or counting is appropriate; by identifying or using a variety of strategies to estimate the results of whole number addition or subtraction computations or multiplication or division; by identifying or using a variety of strategies to estimate the results of addition or subtraction computations from tenths to 100,000, including money.</p>	<p>Estimation</p>	
<p>The student accurately solves problems (including real-world situations) involving recalling basic addition and subtraction facts, and corresponding subtraction facts efficiently; solving addition and subtraction problems using a variety of models and algorithms; recalling basic multiplication facts, and corresponding division facts efficiently; multiplying whole numbers or dividing whole numbers; adding or subtracting fractions, or decimals.</p>	<p>Computation</p>	
Functions and Relationships	Functions and Relationships	Functions and Relationships
<p>The student demonstrates conceptual understanding of functions, patterns, or sequences by identifying, sorting, and classifying objects by attribute and identifying objects that do not belong to a particular group; by identifying a missing element in a pattern; by extending patterns, represented by models (function machine), tables, sequences, or in problem situations; by using rules to express the generalization of a pattern using words, lists, or tables.</p>	<p>Describing Patterns and Functions</p>	

<p>The student demonstrates algebraic thinking by adding and subtracting whole numbers using manipulatives to solve story problems; by creating and solving problems using words, symbols, and drawings; by using an open number sentence to solve for an unknown.</p>	<p>Modeling and Solving Equations and Inequalities</p>	
<p>Geometry</p>	<p>Geometry</p>	<p>Geometry</p>
<p>The student demonstrates an understanding of geometric relationships and constructions by using the attributes and properties of plane figures to identify, compare, or describe plane figures and solid figures; by using properties of angles and the number, length, and orientation of sides to identify or compare triangles, regular polygons, or quadrilaterals; by using properties of solid figures (edges, vertices, number of faces) to identify, compare, or describe cubes, cylinders, cones, spheres, pyramids, or rectangular prisms; by relating real-world examples to the ideas and concepts of geometry; by identifying parallel, intersecting or perpendicular line segments.</p>	<p>Geometric Relationships and Construction</p>	
<p>The student demonstrates conceptual understanding of similarity, congruence, symmetry, or transformations of shapes by identifying or drawing lines of symmetry for simple shapes; by identifying, geometric figures that are congruent, similar, or symmetrical; by illustrating or identifying the results of transformations of polygons; by modeling designs (e.g., tessellations) that contain a series of slides, flips, and/or turns.</p>	<p>Congruence, Symmetry, and Transformation of Shapes</p>	
<p>The student solves problems (including real-world situations) using perimeter or area by estimating or determining area or perimeter; by estimating or determining the area and circumference of a circle.</p>	<p>Perimeter and Area</p>	
<p>The student demonstrates understanding of position and direction by using directional terms to describe relative location of objects in a picture; by locating points of given coordinates on a grid or identifying coordinates for a given point.</p>	<p>Position and Direction</p>	

Statistics and Probability	Statistics and Probability	Statistics and Probability
<p>The student demonstrates an ability to classify and organize data by organizing or displaying, using appropriate scale, data in real-world using tallies, pictographs, bar graphs, Venn diagrams, tables, charts, or line graphs; the student demonstrates an ability to analyze data (comparing, explaining, interpreting, evaluating; or drawing or justifying conclusions) by using information from a variety of displays; by using mode, median, or range.</p>	<p>Data Display, Analysis and Central Tendency</p>	
<p>The student demonstrates a conceptual understanding of probability and counting techniques by finding and recording and making predictions about the likelihood of outcomes of a simple probability experiment; by predicting or explaining the probability of all possible outcomes in an experiment using ratios or fractions to describe the probability; by determining possible combinations in a given situation.</p>	<p>Probability</p>	

Measures of Academic Progress (MAP) Alaska State-Aligned Version 5

Mathematics 6+ Goal Structure	Mathematics 6+ DesCartes	Mathematics 6+ Report Names
Numeration	Numeration	Numeration
<p>The student demonstrates conceptual understanding of real numbers by modeling or identifying place value positions of whole numbers and decimals; by converting between whole numbers written in expanded notation and standard form; by identifying, describing, or illustrating equivalent representations; by equating different equivalent representations of the same exponential expression; by converting between a rational number in scientific notation and standard form; by identifying their subsets (natural, whole, integers, rational, irrational); by simplifying expressions with positive and negative exponents; by expressing square roots in simplest radical form.</p>	Understanding Numbers	
<p>The student demonstrates conceptual understanding of mathematical operations by using models, number lines, or real-life situations describing or illustrating the relationships among the four basic operations; the process of adding and subtracting fractions; the effects of arithmetic operations on real numbers; the use of inverse operations (addition/subtraction or multiplication/division or squaring/square root or cubing/cube root); counting and adding in different bases.</p>	Understanding Meaning of Operations	

<p>The student demonstrates conceptual understanding of number theory by identifying or applying commutative, identity, associative, inverse, or distributive properties to real numbers and variables; by applying the rules for order of operations to real numbers and variables; by identifying or describing factors and multiples common to a pair or set of numbers (e.g., Least Common Multiple, or Greatest Common Factor); by applying rules of divisibility to whole numbers; by identifying prime and composite numbers; by identifying or writing the prime factorization of a number or variable expression using exponents.</p>	<p>Number Theory</p>	
<p>Measurement</p>	<p>Measurement</p>	<p>Measurement</p>
<p>The student demonstrates understanding of measurable attributes by estimating length; by identifying equivalent measures within systems (length, weight, area, volume); by converting measurements within the same system; by estimating or converting measurements between the English and metric systems in real-world applications.</p>	<p>Measurable Attributes</p>	
<p>The student uses measurement techniques by measuring length; by solving real-world problems involving elapsed time; by using scale drawings involving indirect measurement determining the scale factor and applying it to find missing dimension; by accurately measuring a given angle using a protractor; by applying indirect methods, such as the Pythagorean theorem to find missing dimensions; by applying right triangle trigonometry to find missing dimensions.</p>	<p>Measurement Techniques</p>	

Estimation and Computation	Estimation and Computation	Estimation and Computation
<p>The student determines reasonable answers to real-life situations, paper/pencil computations, or calculator results by identifying or using a variety of strategies to estimate the results of addition, subtraction or multiplication from thousandths to millions or simple division; by judging whether the strategy will result in an answer greater or less than the exact answer.</p>	<p>Estimation</p>	
<p>The student accurately solves problems (including real-world situations) involving recalling basic addition, subtraction, multiplication, and division facts efficiently; adding, subtracting multiplying or dividing rational numbers; applying basic operations with real numbers using powers and scientific notation; solves problems involving percents and percentages; converting between equivalent fractions; determining ratio, proportion, and rate.</p>	<p>Computation</p>	
Functions and Relationships	Functions and Relationships	Functions and Relationships
<p>The student demonstrates conceptual understanding of functions, patterns, or sequences by describing or extending patterns, up to the nth term, represented in tables, sequences, graphs, or in problem situations; by generalizing relationships using words, lists, tables, a function, or an equation; by generalizing equations and inequalities using a table of ordered pairs or a graph; by identifying or applying multiplication or division patterns to find missing values in a function; by describing in words how a change in one variable in a formula affects the remaining variables; by describing how a change in one variable or constant in an equation affects the outcome of the equation.</p>	<p>Describing Patterns and Functions</p>	

<p>The student demonstrates algebraic thinking by solving linear equations; by solving literal equations or formulas for a variable; by evaluating algebraic expressions; by translating a written phrase to an algebraic expression; by modeling (graphically or algebraically) or solving situations using systems of linear equations or inequalities (including real-world applications); by selecting and using the quadratic formula to solve problems.</p>	<p>Modeling and Solving Equations and Inequalities</p>	
<p>Geometry</p>	<p>Geometry</p>	<p>Geometry</p>
<p>The student demonstrates an understanding of geometric relationships and construction by using the attributes and properties of polygons to identify, classify, or compare polygons; by using the attributes and properties of solid figures; by identifying a 3-dimensional shape from the 2-dimensional drawing; by using properties of angles (supplementary, complementary, vertical) or circles; using properties of angles created by parallel lines with a transversal; using properties of plane figures (sum of interior or exterior angles of a polygon, central angles, chords, inscribed angles or arcs of a circle); constructing perpendicular bisectors, or perpendicular or parallel lines.</p>	<p>Geometric Relationships and Construction</p>	
<p>The student demonstrates conceptual understanding of similarity, congruence, symmetry, or transformations of shapes by identifying, geometric figures that are congruent, similar, or symmetrical; by describing the results of applying transformations such as translations, rotations, reflections, or dilations to figures; by using a scale factor to solve problems involving similar shapes (e.g., scale drawings, maps, two real-world objects casting shadows); by using a coordinate plane to solve problems involving congruent or similar shapes.</p>	<p>Similarity, Congruence, Transformations of Shapes</p>	

<p>The student solves problems (including real-world situations) by using perimeter, area, or volume by estimating or determining area or perimeter of polygons; by determining the volume or surface area of prisms, cylinders, cones, pyramids, spheres or compound solids; by estimating or determining the circumference and area of a circle; by comparing the relationship of the diameter to the circumference (π).</p>	<p>Perimeter, Area, Volume, and Surface Area</p>	
<p>The student demonstrates understanding of position and direction when solving problems (including real-world situations) by graphing a vertical or horizontal line segment on a coordinate grid or identifying its length or midpoint; by graphing or identifying values of variables on a coordinate grid; by graphing or identifying relationships of variables on a coordinate plane; by graphing or identifying (using equations or formulas to determine the slope of line segments on a coordinate plane).</p>	<p>Position and Direction</p>	
<p>Statistics and Probability</p>	<p>Statistics and Probability</p>	<p>Statistics and Probability</p>
<p>The student demonstrates an ability to classify and organize data by organizing, or displaying, using appropriate scale for data displays data in real-world problems ; the student demonstrates an ability to analyze data (comparing, explaining, interpreting, evaluating or making predictions; or drawing or justifying conclusions) by using information from a variety of displays; by determining range, mean, median, or mode; by using range and measures of central tendency to determine the best representation of the data for a practical situation; by identifying and/or showing the meaning of a best fit line.</p>	<p>Data Display, Analysis and Central Tendency</p>	

<p>The student demonstrates a conceptual understanding of probability and counting techniques by analyzing whether a game is mathematically fair or unfair; by solving or identifying solutions to problems involving possible combinations; by determining or comparing the experimental and/or theoretical probability of independent or dependent events; by using a systematic approach to finding sample spaces or to making predictions about the probability of independent events or dependent events and using the information to solve real-world problems.</p>	<p>Probability</p>	
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Measures of Academic Progress (MAP) Alaska State-Aligned Version 5

Reading Goal Structure	Reading DesCartes	Reading Report Names
<p>The student uses strategies to decode or comprehend meaning of words in text (Word Identification Skills)</p>	<p>Student Uses Strategies to Decode Meaning of Words</p>	<p>Decode Meaning of Words</p>
<p>The student uses strategies to decode or comprehend meaning of words in text by demonstrating understanding of concepts of print including: one to one matching, identifying whether words are the same or different; reading regularly spelled, multi-syllabic words using decoding skills, including knowledge of letter-sound relationships, phonics, rhyming words</p>	<p>Concepts of Print, Phonics, Rhyming Words</p>	
<p>The student uses strategies to decode or comprehend the meaning of words in text by using knowledge of word structure (root or base word, prefixes, suffixes), derivational roots and affixes, including cultural derivations</p>	<p>Word Structure, Derivational Roots and Affixes</p>	
<p>The student uses strategies to decode or comprehend the meaning of words in text by determining meanings of unfamiliar words in context; identifying words by using context clues; obtaining information using text features including text structure (e.g., graphs, charts) and text features (e.g., titles, illustrations, table of contents)</p>	<p>Words in Context; Text Features and Structures</p>	
<p>The student uses strategies to decode or comprehend meaning of words in text by identifying relationships among words by categorizing (e.g., synonyms, antonyms, homophones, homographs), identifying shades of meaning (e.g., happy, ecstatic)] and analogies; identifying content-specific vocabulary, words with multiple meanings, or precise vocabulary, connotation/denotation</p>	<p>Synonyms, Antonyms, Homonyms, Analogy, Vocabulary</p>	

The student comprehends literal or inferred meaning from text (Forming a General Understanding)	Student Comprehends Literal, Inferred Meaning	Literal Meaning, Inferred
The student comprehends literal or inferred meaning from text by answering who, what, where, and when questions; answering questions about information explicitly stated in text; locating information explicitly stated in narrative and informational text to answer literal-comprehension questions	Locates Information in Narrative, Informative Text	
The student comprehends literal or inferred meaning from text by making inferences (e.g., predicts logical outcomes); drawing conclusions based on information presented explicitly in the text (e.g., cause and effect, predictions)	Inferences, Predictions, Conclusions	
The student restates/summarizes and connects information; demonstrates understanding of main ideas/arguments; follows written directions (Forming a General Understanding)	Student Summarizes; Main Ideas; Directions	Summarize/Main Idea; Direction
The student restates/summarizes information by identifying the correct sequence of events in a story; restating and summarizing main ideas or events in correct sequence after reading a text (e.g., paraphrasing, or identifying accurate restatements and summaries of main ideas or events or generalizations of a text); the student follows multi-step directions by reading, understanding, and applying multi-step directions to perform complex procedures and tasks (e.g., filling out a sample income tax return or permanent fund dividend application); identifying the sequence of steps in directions	Summarizes Information, Sequence, Directions	

<p>The student demonstrates an understanding of main idea by identifying the most important idea of a text; identifying or explaining the main ideas in various types of texts (i.e., recognizing or developing appropriate titles, assertions); locating information in narrative and informational text to answer questions related to main ideas or key details; locating references from the text that support understanding of a main idea; locating and using evidence from texts to assess the validity of an author's main ideas (e.g., is the reasoning logical) and adequacy of support (e.g., is there enough supporting evidence); using evidence from the text to evaluate the power, logic, reasonableness</p>	<p>Main Idea, Supporting Details, Validity</p>	
<p>The student analyzes content and structure of genres; analyzes and evaluates literary elements and devices (Analysis of Content and Structure)</p>	<p>Student Analyzes Genre; Literary Element, Device</p>	<p>Lit. Element, Genre, Device</p>
<p>The student analyzes content and structure of genres by distinguishing between fiction and non-fiction, poetry and prose, short story, drama; identifying or explaining the characteristics of the four major genres of fiction: short story, drama, novel, and poetry</p>	<p>Four Major Genres of Fiction</p>	
<p>The student analyzes content and structure of genres by identifying use of literary elements and devices (i.e., dialogue, rhyme, alliteration, simile, metaphor, foreshadowing, personification, time sequence, imagery, repetition, allusion, symbolism, irony, hyperbole, or syntax)</p>	<p>Literary Devices</p>	
<p>The student analyzes literary elements and devices by identifying the setting, characters, problem and solution, plot, point of view, theme, tone</p>	<p>Literary Elements</p>	

The student differentiates fact from opinion/critique the effectiveness of text (Analysis of Content and Structure)	Student Differentiates Fact/Opinion, Effectiveness	Fact/Opinion, Effectiveness
The student differentiates fact from opinion/critiques the effectiveness of text by identifying bias/propaganda; identifying or analyzing author's purpose (e.g., to narrate, inform, entertain, explain, persuade)	Bias/Propaganda; Author's Purpose	
The student analyzes content of text to differentiate fact and opinion by distinguishing fact from opinion in a text	Fact and Opinion	

Measures of Academic Progress (MAP) Alaska State-Aligned Version 5

Language Usage Goal Structure	Language Usage DesCartes	Language Usage Report Names
The student writes about a topic (Write Using a Variety of Forms)	Student Writes About a Topic	Student Writes about a Topic
The student writes about a topic by writing a story or composition with a beginning and middle and ending; with a thesis statement that identifies the focus or controlling idea for the entire composition; grouping ideas logically within the paragraph, placing paragraph breaks logically; using indents; using a variety of transitional words and phrases	Use Topic Statement; Idea Grouping; Paragraph Form	
The student writes about a topic by organizing ideas using appropriate structure to maintain the unity of the composition (e.g., chronology order, order of importance, comparison and contrast, cause and effect, classification and definition)	Use Text Structures	
Student writes for a variety of purposes and audiences (Write Using a Variety of Forms)	Student Writes for Variety of Purpose and Audience	Audience and Purpose
The student demonstrates understanding of elements of discourse (purpose, audience, form) when completing expressive (creative, narrative, descriptive), persuasive, research-based, informational writing	Understand Elements of Discourse	
The student writes for a variety of purposes and audiences by writing a narrative using elements of fiction to advance the plot (e.g., setting, character, conflict and resolution, dialogue, sensory details); writing an understandable story that incorporates literary devices	Write in a Variety of Narrative Forms	

The student writes for a variety of purposes and audiences by using diagrams, charts or illustrations with captions or labels in research projects or extended reports; writing in a variety of nonfiction forms using appropriate information and structure (i.e., step-by-step directions, descriptions, observations, or report writing)	Write in a Variety of Non-fiction Forms	
The student writes and edits using conventions of Standard English: structures & usage	Student Applies Conventions of Structures & Usage	Edit Structure Usage
The student uses a variety of simple and complex sentence structures in written work; uses sentences including the conjunctions and, or, but, or because; writes a variety of sentences (i.e., statement, question, exclamation)	Use a Variety of Sentence Structures	
The student writes and edits using conventions of Standard English by applying rules of usage (i.e., verb tense, subject/verb agreement, possessives, pronouns, adjectives, adverbs, sentence structure);	Apply Rules of Usage	
The student writes and edits using conventions of Standard English by proofreading and correcting grammar in finished written work	Apply Correct Grammar	
The student writes and edits using conventions of Standard English: conventions of writing	Student Applies Conventions of Writing	Edit Writing Conventions
The student writes and edits using conventions of Standard English by applying rules of spelling	Apply Rules of Spelling	
The student writes and edits using conventions of Standard English by applying rules of punctuation (i.e., quotation marks, apostrophes, semicolons, colons, hyphens, and parentheses); identifying and/or correcting mistakes in punctuation (i.e., end of sentences, commas in dates, salutations and closings in letters, and commas in a series)	Apply Rules of Punctuation	
The student writes and edits using conventions of Standard English by applying rules of capitalization	Apply Rules of Capitalization	

The student revises writing and documents sources (Revise and Cite Sources)	Student Revises and Documents Sources	Revise/Cite Sources
The student revises writing to improve style, word choice, sentence variety, and subtlety of meaning in relation to the purpose and audience; combine sentences for fluency	Revise Sentence Structure, Word Choice, Style	
The student revises logical progression of ideas and supporting information by reviewing content and organization; rearranging and/or adding details to improve focus, to support main ideas; and/or eliminating irrelevant details to improve quality and effectiveness of writing; clarifying thesis statement and/or topic sentence; by citing sources of information using a standard method of documentation (e.g., MLA style)	Revise Paragraph Structure; Cite Sources	