

Measures of Academic Progress (MAP) Minnesota State - Aligned Version 6

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
Number & Operation	Number & Operation	Number & Operation
Understand the relationship between quantities and whole numbers up to 31; count, compare, represent and order whole numbers up to 100,000, with an emphasis on place value and equality; representations may include numerals, pictures, real objects, picture graphs, words, spoken words, addition and subtraction, multiplication, expressions with operations, tally marks, and number lines; round numbers to the nearest 10,000, 1000, 100 and 10; round up and round down to estimate sums and differences.	Count, Compare and Represent Whole Numbers	
Use a variety of models and strategies to represent addition, subtraction, multiplication and division problems in real-world and mathematical contexts; demonstrate mastery of addition, subtraction, multiplication and division basic facts; add, subtract, multiply and divide multi-digit numbers; solve real-world and mathematical problems using arithmetic; skip count by 2s, 5s, and 10s; estimate solutions to arithmetic problems in order to assess the reasonableness of results of calculations.	Operations: Whole Numbers	



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Mathematics 2-5 Goal Structure	Mathematics 2-5 DesCartes	Mathematics 2-5 Report Names
<p>Read, write, represent, compare and order fractions and decimals in real-world and mathematical situations; use place value to understand how decimals represent quantities; recognize and generate equivalent decimals, fractions, mixed numbers and improper fractions; model addition and subtraction of fractions and decimals; estimate sums and differences of decimals and fractions; solve real-world and mathematical problems requiring addition and subtraction of decimals, fractions and mixed numbers.</p>	<p>Fractions and Decimals</p>	
Algebra	Algebra	Alegbra
<p>Recognize, complete, create, describe, and use patterns and rules to solve real-world and mathematical problems; patterns may be repeating, growing or shrinking; identify, create and describe simple number patterns involving repeated addition or subtraction, skip counting and arrays of objects such as counters or tiles.</p>	<p>Patterns: Identify, Complete, Extend</p>	
<p>Use input-output rules, tables and charts to represent patterns and relationships and to solve real-world and mathematical problems; recognize and represent patterns of change; use patterns, tables, graphs and rules to solve real-world and mathematical problems; use a rule or table to represent ordered pairs of positive integers and graph these ordered pairs on a coordinate system.</p>	<p>Use Input Output Tables to Represent Patterns</p>	

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Mathematics 2-5 Goal Structure	Mathematics 2-5 DesCartes	Mathematics 2-5 Report Names
<p>Use number sentences involving addition, subtraction, multiplication, division and unknowns to represent and solve real-world and mathematical problems; create real-world situations corresponding to number sentences, equations and inequalities; understand and interpret equations and inequalities involving variables; use number sense, properties and basic facts to find values for the unknowns that make number sentences true; evaluate expressions and solve equations when values for the variables are given.</p>	<p>Understand, Interpret, and Use Number Sentences</p>	
<p>Apply the commutative, associative and distributive properties and order of operations to generate equivalent numerical expressions and to solve problems involving whole numbers.</p>	<p>Commutative, Associative & Distributive Property</p>	
Geometry & Measurement	Geometry & Measurement	Geometry & Measurement
<p>Recognize, sort, classify, name, sketch, and describe characteristics of basic two- and three-dimensional shapes according to their geometric attributes; use them to model real-world objects, and to compose and decompose other objects in various contexts; describe, classify, and draw representations of three-dimensional figures; identify parallel and perpendicular lines in various contexts; use spatial reasoning to model objects in the real-world.</p>	<p>Describe, Name Two and Three Dimensional Shapes</p>	
<p>Compare and order objects according to location and measurable attributes; understand length, perimeter, area, volume and angle as a measurable attributes of real-world and mathematical objects; use various tools to measure length, distances, angles, and areas; determine the area of triangles and quadrilaterals; determine the surface area and volume of rectangular prisms in various contexts; classify angles as acute, right and obtuse; find the perimeter of a polygon.</p>	<p>Measure: Length, Perimeter, Area, Volume, Angles</p>	



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Mathematics 2-5 Goal Structure	Mathematics 2-5 DesCartes	Mathematics 2-5 Report Names
Use basic concepts of measurement in real-world and mathematical situations involving time, money, and temperature.	Time, Money, Temperature	
Use translations, reflections and rotations to establish congruency and understand symmetries.	Translations, Reflections and Rotations	
Data Analysis	Data Analysis	Data Analysis
Collect, organize, display, and interpret data, including data collected over a period of time and data represented by fractions and decimals; use labels and a variety of scales and units in displays; determine mean, median and range; use picture graphs, number line plots, frequency tables, tables, bar graphs, Venn diagrams and line graphs to display and interpret data sets.	Data: Display, Interpret, Mean, Median, Range	

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Mathematics 6+ Goal Structure	Mathematics 6+ DesCartes	Mathematics 6+ Report Names
Number & Operation	Number & Operation	Number & Operation
<p>Read, write, compare, classify and represent real numbers expressed as positive and negative rational numbers, integers, fractions, decimals, percents, ratios, and in scientific notation, and use them to solve problems in various contexts; plot pairs of positive and negative rational numbers on a coordinate grid; factor whole numbers; express a whole number as a product of prime factors with exponents; determine greatest common factors and least common multiples.</p>	<p>Real Numbers: Classify, Represent, Compare</p>	
<p>Calculate with positive and negative rational numbers, decimals, fractions, mixed numbers, and rational numbers with whole number exponents; demonstrate an understanding of the relationship between the absolute value of a rational number and distance on a number line; use the symbol for absolute value.</p>	<p>Calculate with Rational Numbers</p>	
<p>Understand the concept of ratio and its relationship to fractions and to the multiplication and division of whole numbers; solve real-world and mathematical problems using percents, ratios, decimals, fractions, mixed numbers, positive and negative rational numbers, and rational numbers with whole number exponents; determine the rate for ratios of quantities with different units; estimate solutions to problems with whole numbers, fractions and decimals.</p>	<p>Ratios, Rates & Problems with Rational Numbers</p>	

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Algebra	Algebra	Algebra
<p>Recognize and represent relationships between varying quantities; translate from one representation to another; use patterns, tables, graphs and rules to solve real-world and mathematical problems; understand the concept of proportionality and functions in real-world and mathematical situations, and distinguish between proportional and other relationships, linear and non-linear functions; identify important features of functions and other relations using symbolic and graphical methods where appropriate.</p>	<p>Functions: Representations, Linear & Non Linear</p>	
<p>Apply understanding of order of operations and algebraic properties to generate equivalent numerical and algebraic expressions containing positive and negative rational numbers, grouping symbols, polynomials and radicals; evaluate algebraic expressions containing rational numbers, whole number exponents, polynomial and rational expressions at specified values of their variables; factor common monomial factors from polynomials, factor quadratic polynomials, and factor the difference of two squares.</p>	<p>Algebraic and Numerical Expressions; Polynomials</p>	
<p>Recognize proportional relationships, linear, quadratic and exponential and other common functions in real-world and mathematical situations; represent these and other relationships with tables, verbal descriptions, symbols and graphs; solve problems involving proportional relationships and functions and explain results in the original context.</p>	<p>Functions: Linear, Quadratic, Exponential</p>	
<p>Represent real-world and mathematical situations using equations, inequalities and systems involving linear, quadratic, exponential, absolute value and nth root functions; solve equations and inequalities symbolically and graphically; interpret solutions in the original context.</p>	<p>Linear, Quadratic, Root: Equations & Inequalities</p>	

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Geometry & Measurement	Geometry & Measurement	Geometry & Measurement
<p>Calculate perimeter, area, surface area and volume of two- and three-dimensional figures to solve real-world and mathematical problems; use reasoning with proportions and ratios to determine measurements, and solve real-world and mathematical problems involving circles and related geometric figures.</p>	<p>Area, Surface Area, Volume, and Circumference</p>	
<p>Choose appropriate units of measurement and use ratios to convert within and between measurement systems to solve real-world and mathematical problems; estimate weights, capacities and geometric measurements using benchmarks in measurement systems with appropriate units.</p>	<p>Units of Measurement and Unit Conversions</p>	
<p>Analyze the effect of change of scale, translations and reflections on the attributes of two-dimensional figures; solve real-world and mathematical geometric problems using algebraic methods; compare geometric figures for similarity; use proportions and ratios to solve problems involving scale drawings; apply the trigonometric ratios sine, cosine and tangent to solve problems, such as determining lengths and areas in right triangles and in figures that can be decomposed into right triangles.</p>	<p>Transformations, Similarity, and Trigonometry</p>	
<p>Understand and use relationships between angles in geometric figures; solve problems involving right triangles using the Pythagorean Theorem; know and apply properties of geometric figures to solve mathematical problems; construct logical arguments, based on axioms, definitions and theorems, to prove theorems and other results in geometry; use coordinate geometry to represent and analyze line segments and polygons, including determining lengths, midpoints of line segments.</p>	<p>Geometric Properties and Logical Arguments</p>	

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Data Analysis & Probability	Data Analysis & Probability	Data Analysis & Probability
<p>Represent probabilities using fractions, decimals and percents; reason about probabilities using proportions; use and calculate probabilities and apply probability concepts to solve real-world and mathematical problems; select and apply counting procedures, to determine the size of a sample space; calculate experimental probabilities by performing simulations or experiments involving a probability model and using relative frequencies of outcomes.</p>	<p>Probabilities: Represent, Use, Calculate & Apply</p>	
<p>Use various measures associated with data to make predictions, draw conclusions, identify trends and describe relationships; interpret data using scatterplots, approximate and use lines of best fit; display and analyze data.</p>	<p>Data: Trends, Relationships, Scatterplots</p>	
<p>Display and interpret data in a variety of ways, including circle graphs; show how graphs and data can be distorted to support different points of view; design simple experiments and explain the impact of sampling methods.</p>	<p>Data: Displays, Inference, Sampling</p>	

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Reading Goal Structure	Reading DesCartes	Reading Report Names
Literature	Literature	Literature
<p>Key ideas and details: In literature, understand explicitly stated ideas; cite textual evidence, make and support inferences and conclusions; determine central ideas or themes, retell and summarize with key supporting details and ideas; analyze development and interaction of individuals, events and ideas; compare and contrast themes and characters within and across texts from diverse cultures; identify and describe characters, settings, and major events in a story, using key details.</p>	<p>Literature: Key Ideas and Details</p>	
<p>Craft and structure: In literature, analyze how word choice (word sounds [rhyme, alliteration]; analogies; allusion; multiple-meaning words; fresh, engaging, or beautiful language) shapes meaning or tone; analyze text structure, including the relationship of parts to each other and to the whole, the ordering of events, and devices such as flashback and foreshadowing; analyze point of view and purpose; integrate information from illustrations with information in the text; analyze how two texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.</p>	<p>Literature: Craft and Structure</p>	

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Informational Text	Informational Text	Informational Text
<p>Key ideas and details: In informational texts, understand explicitly stated ideas; cite textual evidence, make inferences, support conclusions; determine central ideas or themes, retell and summarize with key supporting details and ideas; compare and contrast important points and main ideas within and across texts; compare and contrast different authors' presentations of similar ideas; analyze development and interaction of individuals, events and ideas.</p>	<p>Informational Text: Key Ideas and Details</p>	
<p>Craft and Structure: In informational text, analyze how word choice (e.g., the language of a court opinion vs. that of a newspaper, analogies, allusions) affects the meaning and tone of a text; analyze how authors use and refine the meaning of key terms; analyze and evaluate text structure, including the relationship of parts to each other and to the whole, the development and refinement of ideas or claims, and the effectiveness of a given structure for an exposition or argument.</p>	<p>Informational Text: Craft and Structure</p>	
Foundational Skills and Vocabulary	Foundational Skills and Vocabulary	Foundations, Vocabulary
<p>Print Concepts, Phonics, and Word Recognition: Demonstrate understanding of the organization and basic features of print. Know and apply grade-level phonics and word analysis skills in decoding words: segment syllables, blend sounds, identify common prefixes and derivational suffixes, use knowledge of syllabication patterns and morphology, know common vowel-team conventions for representing long vowel sounds.</p>	<p>Print Concepts, Phonics, and Word Recognition</p>	

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<p>Context Clues and Reference: Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate; acquire grade-appropriate general academic and domain-specific words and phrases.</p>	<p>Context Clues and Reference</p>	
<p>Word Relationships and Nuance: Demonstrate understanding of word relationships and nuances in word meanings; use the relationship between particular words (e.g., synonyms, antonyms, homographs, cause/effect, part/whole, item/category, analogy) to better understand each of the words; acquire grade-appropriate general academic and domain-specific words and phrases.</p>	<p>Word Relationships and Nuance</p>	

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Language Usage Goal Structure	Language Usage DesCartes	Language Usage Report Names
<p>Writing: Plan and Organize Arguments, Informative/Explanatory Texts, and Narratives, Maintain Style, Use Precise Language, and Conduct Research to Build and Present Knowledge</p>	<p>Writing: Plan, Organize, Develop, Revise, Research</p>	<p>Plan, Organize, Research</p>
<p>Introduce claim(s), establish the significance of the claim(s), distinguish claim(s) from alternate or opposing claims; introduce a topic; organize complex ideas, concepts, and information to create a unified whole; include formatting and graphics; engage and orient the reader by setting out a problem, situation, or observation and its significance, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically; use transition and temporal words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, clarify relationships, and build toward a particular tone and outcome; provide a concluding statement or section that follows from and supports the argument, information or explanation, or narrated experiences or events.</p>	<p>Plan, Organize; Create Cohesion, Use Transitions</p>	

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<p>Support claim(s) with reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text; develop claim(s) and counterclaims, supplying the most relevant evidence for each while pointing out the strengths and limitations in a manner that anticipates the knowledge level, concerns, values, and possible biases of a variety of audiences; develop a variety of topics by selecting significant and relevant facts, extended definitions, concrete details, quotations, or other information appropriate to the audiences knowledge of the topics; use narrative techniques to show the response of characters to situations and to develop a range of experiences, events, and/or characters; conduct research based on focused questions, demonstrating understanding of the subject under investigation, to answer a question, or to solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject; gather relevant information from multiple print sources, assess the credibility and accuracy of each source, and integrate information; take notes and categorize; summarize, paraphrase, or quote data and conclusions while avoiding plagiarism and providing bibliographic information, following a standard format for citation so that it conforms to the guidelines in a style manual.</p>	<p>Provide Support; Develop Topics; Conduct Research</p>	
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<p>Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline (e.g., opinion, informative/explanatory, narrative, poetic, descriptive, business) in which they are writing; use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy; use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters; choose words and phrases for effect; expand, combine, and reduce sentences for meaning, reader/listener interest, and style; choose language that expresses ideas concisely, eliminating wordiness and redundancy; use verbs in the active and passive voice to achieve particular effects (e.g., emphasizing the actor or the action; expressing uncertainty or describing a state contrary to fact); maintain consistency in style and tone; choose punctuation for effect.</p>	<p>Establish and Maintain Style: Use Precise Language</p>	
<p>Plan, produce, and revise for clear and coherent writing in which the development, organization, and style are appropriate to a range of tasks, purposes, and audiences; differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion).</p>	<p>Purpose and Audience</p>	

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Language: Understand and Edit for Conventions of Standard English Grammar and Usage; Parts of Speech and Phrases, Clauses, Agreement, and Sentence Structures	Language: Understand, Edit for Grammar, Usage	Understand Grammar, Usage
<p>Explain the function of nouns, pronouns, verbs, adjectives, and adverbs; use relative pronouns and relative adverbs; use reflexive and intensive pronouns; recognize and correct pronouns with unclear or ambiguous antecedents and inappropriate shifts in pronoun number and person; ensure that pronouns are in the proper case; use common, proper, possessive, and collective nouns; form and use regular and irregular plural nouns, singular and plural nouns with matching verbs in basic sentences, and abstract nouns; use modal auxiliaries; use personal, possessive, and indefinite pronouns; recognize and correct inappropriate shifts in verb tense, voice, and mood; form and use the past tense of regular and irregular verbs and simple, progressive, and perfect verb tenses; use adjectives and adverbs, depending on what is to be modified; order adjectives within sentences; correctly use frequently confused words; understand and use conjunctions, prepositions, interjections, and determiners (e.g., articles, demonstratives); understand and use interrogatives.</p>	<p>Parts of Speech</p>	
<p>Use various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent; noun, relative, adverbial), recognizing and correcting misplaced and dangling modifiers; ensure subject-verb and pronoun-antecedent agreement; produce and expand complete simple and compound declarative, interrogative, imperative, and exclamatory sentences in response to prompts; produce simple, compound, and complex sentences; produce complete sentences, recognizing and correcting inappropriate fragments and run-ons; choose among simple, compound, complex, and compound-complex sentences to signal differing</p>	<p>Phrases, Clauses, Agreement, Sentences</p>	

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relationships among ideas; use parallel structure; produce, expand, and rearrange complete simple and compound sentences.		
Language: Understand and Edit for Conventions of Standard English Capitalization, Punctuation, and Spelling	Language: Understand, Edit Mechanics	Punctuate, Spell Correctly
Capitalize the first word in a sentence and the pronoun I, dates and names of people, holidays, product names, geographic names, and appropriate words in titles.	Capitalization	
Use punctuation (comma, ellipsis, dash) to indicate a pause or break; observe hyphenation conventions; recognize end punctuation; use end punctuation for sentences; use punctuation to separate items in a series; use an ellipsis to indicate an omission; use a comma before a coordinating conjunction in a compound sentence or to separate an introductory element from the rest of the sentence; use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements; use a comma to separate coordinate adjectives; use commas in dates, in greetings and closings of letters, and in addresses; use an apostrophe to form contractions and possessives; use commas and quotation marks in dialogue and to mark direct speech and quotations; use a semicolon (and perhaps a conjunctive adverb) to link closely related independent clauses; use a colon to introduce a list or quotation; use underlining, quotation marks, or italics to indicate titles of works.	Punctuation	

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<p>Use conventional spelling for words with common spelling patterns and for frequently occurring irregular words, for high-frequency and other studied words, and for adding suffixes to base words; generalize learned spelling patterns when writing words; use spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts) in writing words; consult reference materials, including beginning dictionaries, as needed to check and correct spellings.</p>	<p>Spelling</p>	
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