Measures of Academic Progress (MAP) Montana State-Aligned Version 3

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 Sense and Operations	**Number Sense and Operations**	**Number Sense and Operations**
Demonstrate relationships among whole numbers: Identify place value up to 100,000 and compare numbers; develop multiplication and division concepts, apply number and operation models and strategies, and reason and justify using properties of operations; use number theory concepts such as prime factorization, greatest common factor, and least common multiple in problem situations.	Whole Number Concepts	
Estimate sums, differences, products, and quotients when solving problems: Add, subtract, multiply (three-digit by two-digit factors), and divide (two-digit dividends by one-digit divisors) to solve problems; demonstrate fluency with basic facts; select and apply appropriate estimation strategies to judge the reasonableness of solutions to problems; demonstrate correct use of order of operations.*	Whole Number Estimation and Operations	

Identify and model common fractions and decimals: Recognize and compare equivalent representations; compute fluently and solve multi-step problems using integers, fractions, decimals; recognize, model, and compare different forms of integers and rational numbers including percents, fractions, and decimals.*	Rational Number Relationships	
Select and apply appropriate standard units and tools to measure length, time, and temperature: Use metric and standard units of measurement; compare and convert within systems.	Measurement: Appropriate Units, Compare & Convert	
Data Analysis	**Data Analysis**	**Data Analysis**
Collect data from a variety of contexts: Collect, represent, and organize data in tables, dot plots, bar graphs, pictographs, stem and leaf plots, scatter plots, histograms, and circle graphs; solve problems and make decisions using data descriptors such as minimum, maximum, median, and mode; interpret, analyze, and evaluate data using mean, median, and range to identify trends and make decisions and predictions about data.	Representing and Evaluating Data	
Describe events from contexts as likely or unlikely and discuss the degree of likelihood using words such as certain, equally likely, and impossible: Create sample spaces and simulations from events, determine experimental and theoretical probabilities, and use probability to make predictions.	Likelihood and Probability of Events	
Geometric Reasoning	**Geometric Reasoning**	**Geometric Reasoning**
Define, classify and compare properties of solids and plane figures, including lines and angles: Describe, compare, and analyze attributes of two-dimensional shapes and of three-dimensional shapes such as cubes and other rectangular prisms, pyramids, cylinders, cones, and spheres.	Attributes of Two- and Three-Dimensional Figures	

Use spatial reasoning to determine congruence, and symmetry of objects in mathematics: Use spatial reasoning to identify slides and flips of congruent figures; define, identify, and execute transformations including translations, rotations, and reflections.	Congruence, Similarity, and Transformations	
Estimate and measure linear attributes of objects in metric units such as centimeters and meters and customary units such as inch, foot, and yard: Define and determine area and perimeter of common polygons using concrete tools such as grid paper, objects; measure and compute angles, perimeter, area, and volume including the use of formulas and choosing appropriate units.	Measurement: Linear, Area, Volume, Angles	
Algebraic Reasoning	**Algebraic Reasoning**	**Algebraic Reasoning**
Describe, extend, and make generalizations about geometric or numeric patterns: Create and use tables, graphs or diagrams, symbolic expressions, and verbal descriptions to represent, analyze, and generalize a variety of patterns involving numbers and operations.	Representing and Generalizing Patterns	
Use letters, boxes, or symbols to represent numbers in simple expressions or equations to demonstrate a basic understanding of variables: Develop an understanding of equivalence by expressing numbers, measures, and numerical expressions involving operations in a variety of ways; recognize, simplify, and generate equivalent forms of algebraic expressions, justifying each step with properties of operations.	Symbols, Expressions, and Equivalence	
Use number patterns to investigate properties of numbers such as even or odd and properties of operations such as commutative, associative, distributive, and the multiplicative and additive identities: Use number properties and inverse operations to solve equations involving a single variable.	Solving Equations and Properties of Operation	
Model problem situations with manipulatives and use multiple representations such as words, pictures, tables, or graphs to draw conclusions.	Modeling with Multiple Representations	

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Mathematics 6+ Goal Structure	Mathematics 6+ DesCartes	Mathematics 6+ Report Names
Number Sense and Operations	Number Sense and Operations	Number Sense and Operations
Select and apply appropriate estimation strategies to judge the reasonableness of solutions to problems: Identify situations where estimation is appropriate and determine the degree of accuracy needed for a given problem situation; demonstrate correct use of order of operations.*	Estimation, Reasonableness, and Accuracy	
Analyze and apply the properties of numbers and number systems: Use number theory concepts such as prime factorization, greatest common factor, and least common multiple in problem situations; given a representation of a number or expression, find equivalent representations using multiple notations (e.g., x to the 1/2 power vs. square root of x and visual representation of multiplying binomials).	Number Theory: Properties of Numbers	
Recognize, model, and compare different forms of integers and rational numbers including percents, fractions, decimals, and numbers using exponents and scientific notation: Use multiple notations to perform and interpret the effects of operations on very large and very small numbers; compute fluently and solve multi-step problems using integers, fractions, decimals, and numbers in exponential form.*	Rational Number Relationships and Quantification	
Understand and apply proportional relationships to model real-world situations and to solve problems involving rates, ratios, proportions, percents, and direct variation.	Proportional Reasoning	
Use metric and standard units of measurement: Compare and convert within systems.	Metric and Standard Measurement	

Data Analysis	Data Analysis	Data Analysis
Collect data from a variety of contexts: Organize and represent data in box plots, scatter plots, histograms, and circle graphs; select, create, and compare graphical or numerical representations of data sets using technology when appropriate; reason about distributions using measures of central tendency and spread (e.g., percentiles, quartiles, inter-quartile range, and standard deviation).	Representing and Analyzing Data	
Interpret, analyze, and evaluate data using mean, median, range, and quartiles to identify trends and make decisions and predictions about data: Evaluate the validity of reports based on collected and/or published data by considering the source of the data, the design of the study, and the way data are displayed, analyzed, and interpreted.	Evaluating Data and Validity	
Create sample spaces and simulations from events, determine experimental and theoretical probabilities, and use probability to make predictions: Make, evaluate, and justify decisions based on probabilities (e.g., finding expected value and using rules of probability); determine the possible number of outcomes for an event or compound event using the fundamental counting principle, permutations, combinations, and other systematic counting methods.	Probability and Counting methods	
Geometric Reasoning	**Geometric Reasoning**	**Geometric Reasoning**
Define, classify and compare properties of solids and plane figures, including lines and angles: Formulate and evaluate conjectures about geometric objects and their properties, applying inductive reasoning when appropriate.	Geometric Figures: Properties and Conjectures	
Use spatial reasoning and geometric models to solve problems: Use spatial reasoning to determine congruence, similarity, and symmetry of objects; develop informal arguments to verify geometric relationships and solve problems such as an informal justification of the Pythagorean Theorem in a variety of contexts; establish the validity of geometric conjectures using deductive reasoning, indirect proof, and counterexamples.	Geometric Proof: Justifying Relationships	

Identify, analyze, and use transformational, coordinate, and synthetic geometric approaches to solve problems: Define, identify, and execute transformations including translations, rotations, reflections, and dilations.	Transformational and Coordinate Geometry	
Measure and compute angles, perimeter, area, surface area, and volume including the use of formulas and choosing appropriate units: Determine measures of two- and three-dimensional objects and their elements using trigonometric ratios, proportionality, the Pythagorean Theorem, and angle relationships.	Angles, Area, Volume & Indirect Measurement	
Algebraic Reasoning	**Algebraic Reasoning**	**Algebraic Reasoning**
Create and use tables, graphs or diagrams, symbolic expressions, and verbal descriptions to represent, analyze, and generalize a variety of patterns involving numbers and operations.	Representing and Generalizing Patterns	
Recognize, simplify, and generate equivalent forms of algebraic expressions, justifying each step with properties of operations.	Algebraic Expressions and Equivalence	
Represent functions in a variety of ways: Identify linear and non-linear functional relationships; identify and compute rate of change/slope and intercepts; model and solve contextual problems involving linear proportions or direct variation; determine the appropriate symbolic representation of a contextual situation (e.g., variables and parameters in equations, inequalities, functions, and matrices); analyze the effects of transformations on families of functions; represent functions in equivalent forms to identify and perform transformations; use an appropriate function model to analyze results or make a prediction.	Representing Functions	
Use number properties and inverse operations to solve multi-step equations and inequalities involving a single variable: Solve a variety of equations, inequalities and systems of equations and inequalities, justify the solution process, and interpret the solution in context.	Multi-step Equations and Inequalities	

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Reading Goal Structure	Reading DesCartes	Reading Report Names
Students Apply Foundational Skills and Strategies to Comprehend Text	**Foundational Skills and Strategies**	**Foundational Strategies**
Decode unknown words combining the elements of phonics; apply knowledge of word structure and analysis of word parts; select and apply knowledge of word origins and roots and affixes.	Decode	
Develop, apply, expand, and utilize general and content specific vocabulary through the use of context clues.	Develop Vocabulary	
Students Comprehend, Interpret, Analyze, and Evaluate Texts	**Comprehend, Interpret, Analyze, and Evaluate Texts**	**Comprehending Nonfiction Text**
Answer literal questions; locate information.	Answer Literal Questions and Locate Information	
Make predictions, make inferences, and compare, contrast, and synthesize information within and across texts to draw conclusions.	Predict, Make Inferences, and Draw Conclusions	
Recall and explain a series of events; recall and explain a series of events or sequence of information to draw conclusions; identify main ideas and supporting details; summarize texts by stating main ideas and supporting details/analyzing essential and nonessential supporting details.	Identify Main Ideas and Supporting Details	
Identify, use, and analyze text features to enhance comprehension; identify and explain the organizational structure of a selection including order of importance, spatial, problem-solution, and cause-effect.	Text Features and Organizational Structures	
Recognize, analyze, and critique author's purpose, point of view, language use, credibility, and bias.	Recognize and Analyze Author's Purpose and Bias	

Interpret and Respond to a Range of Literature	Interpret and Respond to Literature	Comprehending Literature
Literary Elements: Identify, analyze, compare and contrast literary elements; analyze how authors develop literary elements to impact works and readers.	Literary Elements	
Language Usage: Explain, analyze, and evaluate authors' choices of words, figurative language, stylistic devices, diction, imagery, detail, and style shape meaning and impact works and readers.	Style, Diction, Figurative Language	
Genre: Identify, understand, analyze, and define characteristics of literary genres.	Genre	

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Language Usage Goal Structure	Language Usage DesCartes	Language Usage Report Names
Writing Process: Researching, Prewriting, Planning, Drafting, Revising and Editing	**Writing Process**	**Writing Process**
Identify and demonstrate the steps used in the writing process: Prewriting, planning, drafting.	Prewrite, Plan, and Draft	
Identify and demonstrate the steps used in the writing process: Revising and editing.	Revise and Edit	
Research a topic, identify the owner of ideas and information, and appropriately credit ideas and words of others.	Research and Credit Others for Ideas	
Main Ideas, Details, Language Usage	**Main Ideas, Details, Language Usage**	**Main Ideas and Details, Usage**
Generate topic sentences, thesis statements, and complex thesis statements that indicate the writer's purpose; generate, develop, and elaborate upon main ideas using a variety of relevant and specific supporting details.	Generate Main and Supporting Details	
Organize writing using a logical progression of ideas and transitions to effectively convey the relationships among them.	Organize Writing with Logic and Transitions	
Demonstrate knowledge of language choices and their impact on writing by showing purposeful control of voice, sentence fluency, and word choice	Control Voice, Sentence Fluency, Word Choice	
Conventions	**Conventions**	**Conventions**
Apply conventions of standard written English (usage [grammar]) appropriate for purpose, audience, and form.	Use Correct Grammar	
Apply conventions of standard written English (punctuation) appropriate for purpose, audience, and form.	Use Correct Punctuation	

Apply conventions of standard written English (capitalization) appropriate for purpose, audience, and form.	Use Correct Capitalization	
Apply conventions of standard written English (spelling) appropriate for purpose, audience, and form	Use Correct Spelling	
Genre and Purpose	**Genre and Purpose**	**Genre and Purpose**
Identify, describe, articulate, and evaluate the purpose, audience, and tone.	Understand Purpose, Audience, and Tone	
Identify, analyze, and evaluate different writing forms and genres and their characteristics	Understand Genres and their Characteristics	