

Measures of Academic Progress (MAP) North Dakota State-Aligned Version 2

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 and Operation	Number and Operation	Number and Operation
Numbers and number systems: model, represent, identify and name whole numbers and integers: including place value and exponential notation: relate exponents and repeated multiplication*	Whole Numbers, Integers: Represent, Identify	
Numbers and number systems: model, represent, identify, and name fractions, decimals, ratios, and percents*	Fractions, Decimals: Represent, Identify	
Number relationships: group, count, round, order, and compare whole numbers*	Whole Numbers: Count, Round, Order, Compare	
Number relationships: round, order, compare, and determine equivalent forms of fractions, decimals, ratios, and percents*	Fractions, Decimals: Round, Order, Compare	
Operations and their properties: add and subtract whole numbers - model, write, compute, use appropriate vocabulary, demonstrate the inverse relationship between addition and subtraction*	Whole Numbers: Add, Subtract	
Operations and their properties: multiply and divide whole numbers: model, write, compute, use vocabulary, demonstrate the inverse relationship between multiplication and division*	Whole Numbers: Multiply, Divide	

Operations and their properties: for whole numbers, use divisibility rules, identify primes and composites, and determine prime factorization, LCM and GCF	Whole Numbers: Number Theory	
Operations and their properties: add and subtract fractions and mixed numbers with unlike denominators*	Fractions: Add, Subtract	
Operations and their properties: add, subtract, multiply, and divide multi-digit decimals (including remainders)*	Decimals: Add, Subtract, Multiply, Divide	
Operations and their properties: simplify numeric expressions: use commutative, associative, and distributive properties; multiplication properties of 0 and 1; and order of operations*	Expressions: Properties, Order of Operations	
Computational fluency and estimation: recall basic addition and multiplication facts for whole numbers; estimate computations of whole numbers, fractions, and decimals to determine if solutions are reasonable*	Whole Numbers: Basic Facts; Estimation	
Geometry and Spatial Sense	Geometry and Spatial Sense	Geometry and Spatial Sense
Two-dimensional shapes, geometric properties and relationships: identify, classify, and compare points, lines, segments, rays, and planes; obtuse, acute, and right angles; parallel and perpendicular lines; triangles, squares, rectangles, parallelograms, rhombi, trapezoids, ovals, diamonds, and circles; radius, diameter, chord, center, and circumference	Two-Dimensional Shapes: Identify, Compare	
Three-dimensional shapes, geometric properties and relationships: identify, classify, and compare cubes, rectangular prisms, pyramids, cones, cylinders, and spheres	Three-Dimensional Shapes: Identify, Compare	
Coordinate geometry: name locations in quadrant I using ordered pairs	Coordinate Geometry: Quadrant I	
Transformation and symmetry: identify, describe properties, and use motion geometry to show shapes are similar or congruent; identify and create shapes that have lines of symmetry	Transformations, Symmetric, Similar, Congruent	
Visualization, spatial reasoning, and geometric modeling: identify, arrange, and describe objects by proximity, position, and direction	Spatial Reasoning: Position, Direction	



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Data Analysis, Statistics, and Probability	Data Analysis, Statistics, and Probability	Data, Stats, Probability
Data collection, display, and interpretation: determine population and sample groups; collect and record data using tally charts; organize and display data using bar, line, and circle graphs, pictographs, frequency tables, and Venn diagrams	Data: Collect, Display, Interpret	
Probability: determine number of possible outcomes or number of arrangements for simple situations; determine probability for a simple event; express probability as a ratio or a likelihood	Probability: Simple Events	
Statistical methods: calculate the mean, median, mode, and range of a set of data	Statistics: Mean, Median, Mode, Range	
Predictions, data analysis and inferences: make predictions and draw conclusions based on data from sample groups or simple probability experiments; determine the most likely outcome	Data Analysis: Conclusions, Predictions	
Measurement	Measurement	Measurement
Measurable attributes, measurement systems, and units: estimate, measure, compare, and order length, angles, weight, and capacity/volume	Length, Angles, Weight, Capacity/Volume	
Measurable attributes, measurement systems, and units: estimate, measure, compare, and order time, temperature, and money	Time, Temperature, Money	
Measurable attributes, measurement systems, and units: estimate and verify a quantity using objects and non-standard units; conversions of units within the same system	Conversions within Measurement Systems	
Measurement tools, techniques, and formulas: select appropriate tools and units and use formulas to calculate perimeter and area of squares and rectangles, and the volume of rectangular prisms: estimate, measure, and analyze relationships between perimeter and area; estimate and measure volume	Perimeter, Area, Volume	



Algebra, Functions, and Patterns	Algebra, Functions, and Patterns	Algebra, Func, Patterns
Patterns, relations and functions: repeating and growing patterns: identify, extend, determine missing terms, create, and state the rule using tables and graphs; identify, sort, and classify objects by attributes; solve problems	Patterns: Repeating, Growing	
Numeric and algebraic representations: solve addition, subtraction, multiplication, and division equations with unknown numbers or variables	Algebraic Expressions, Equations	
Mathematical modeling: use equations with variables, symbols, and parentheses to represent and solve problem situations	Model Problems: Represent, Solve	

*Denotes that calculator use is not permitted in this goal or sub-goal of the test.

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Mathematics 6+ Goal Structure	Mathematics 6+ DesCartes	Mathematics 6+ Report Names
Number and Operation	Number and Operation	Number and Operation
Numbers and number systems: model, represent, identify and name whole numbers and integers: including place value and exponential notation: relate exponents and repeated multiplication*	Whole Numbers, Integers: Represent, Identify	
Numbers and number systems: model, represent, identify, and name fractions, decimals, ratios, and percents*	Fractions, Decimals: Represent, Identify	
Numbers and number systems: model, represent, identify, and name real and complex numbers and matrices: express real numbers in scientific notation, as logarithms; use absolute value; represent a set of data in a matrix	Complex Numbers, Matrix: Represent, Identify	
Number relationships: group, count, round, order, and compare whole numbers*	Whole Numbers: Count, Round, Order, Compare	
Number relationships: round, order, compare, and determine equivalent forms of fractions, decimals, ratios, and percents*	Fractions, Decimals: Round, Order, Compare	
Number relationships: round, order, compare real and complex numbers: describe hierarchal relationships; includes integers, rationals, and reals	Complex Numbers: Round, Order, Compare	
Operations and their properties: add and subtract whole numbers: model, write, compute, use appropriate vocabulary, demonstrate inverse relationship*	Whole Numbers: Add, Subtract	
Operations and their properties: multiply and divide whole numbers: model, write, compute, use vocabulary, and demonstrate inverse relationship*	Whole Numbers: Multiply, Divide	
Operations and their properties: for whole numbers, use divisibility rules, identify primes and composites, and determine prime factorization, LCM and GCF	Whole Numbers: Number Theory	



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Operations and their properties: add, subtract, multiply, and divide fractions and mixed numbers with unlike denominators*	Fractions: Add, Subtract, Multiply, Divide	
Operations and their properties: add, subtract, multiply, and divide multi-digit decimals (including remainders) *	Decimals: Add, Subtract, Multiply, Divide	
Operations and their properties: simplify algebraic expressions using properties of the real number system (includes integers, rationals, and complex numbers) using properties of exponents, roots, and logarithms; compare properties of matrix operations to those of the real numbers	Complex Numbers, Matrices: Properties	
Operations and their properties: simplify numeric expressions: use commutative, associative, and distributive properties; multiplication properties of 0 and 1; and order of operations*	Expressions: Properties, Order of Operations	
Computational fluency and estimation: recall basic addition and multiplication facts for whole numbers; estimate computations of whole numbers, fractions, and decimals	Whole Numbers: Basic Facts; Estimation	
Computational fluency and estimation: add, subtract, multiply, and divide integers, rational, real, and complex numbers; matrix operations - add, subtract, multiply by a scalar, and multiply matrices (up to 3 rows and columns); solve problems with proportions, percent, and absolute value; solve real-world problems; estimate to predict and check to determine if solutions are reasonable	Complex Numbers, Matrices: Operations	
Geometry and Spatial Sense	Geometry and Spatial Sense	Geometry and Spatial Sense
Two-dimensional shapes, geometric properties and relationships: identify, classify, and compare: points, lines, segments, rays, and planes; obtuse, acute, and right angles; parallel and perpendicular lines; polygons, triangles, squares, rectangles, parallelograms, rhombi, trapezoids, ovals, diamonds, and circles; radius, diameter, chord, center, and circumference, classify triangles based on side and angle measurements; relationships between angle pairs; determine congruence and similarity; establish validity of conjectures using two-column or paragraph proof	Two-Dimensional Shapes: Identify, Compare	



Three-dimensional shapes, geometric properties and relationships: identify, classify, and compare: cubes, rectangular prisms, pyramids, cones, cylinders, and spheres; use nets to represent relationships between 2-D and 3-D objects	Three-Dimensional Shapes: Identify, Compare	
Two- and three-dimensional shapes, geometric properties and relationships: determine side lengths and angle measures in triangles using Pythagorean theorem and trigonometry	Pythagorean Theorem, Trigonometry	
Coordinate geometry: represent shapes, determine distance, midpoint and slope to establish relationships between points, lines, and plane figures	Coordinate Geometry: All Quadrants	
Transformation and symmetry: identify, describe properties, and use motion geometry to show shapes are similar or congruent; identify and create shapes that have lines of symmetry; identify and perform transformations using sketches and coordinates; use scale, proportion, and congruency to solve problems involving similar figures	Transformations, Symmetric, Similar, Congruent	
Visualization, spatial reasoning, and geometric modeling: identify position and direction; arrange and describe objects by proximity, position, and direction; recognize different views of 3-D objects from different perspectives	Spatial Reasoning: Position, Perspective	
Data Analysis, Statistics, and Probability	Data Analysis, Statistics, and Probability	Data, Stats, Probability
Data collection, display, and interpretation: formulate a question, select a random sample; identify the variable, sample, and population; conduct a well-designed study; collect and record data using tally charts; organize and display data using bar, line, and circle graphs, pictographs, frequency tables, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots, and Venn diagrams	Data: Collect, Display, Interpret	

Probability: determine number of possible outcomes or number of arrangements for a given event; use fundamental counting principal, organized lists, tree diagrams; calculate and use simulations to determine probabilities of dependent and independent compound events; make predictions using theoretical probabilities and experimental results; express probability as a ratio, a likelihood, a decimal, or a ratio	Probability: Compound Events	
Statistical methods: calculate the mean, median, mode, range, and quartiles of a set of data; identify outliers and their effects on measures of central tendency; draw meaningful conclusions about the data	Statistics: Central Tendency, Spread	
Predictions, data analysis and inferences: make predictions and draw conclusions based on data from sample groups or simple probability experiments; determine the most likely outcome; describe effects of scale on the appearance of graphs, tables, and charts; from a scatter plot, approximate the graph and equation of the line of best fit in order to identify trends; estimate strength of correlation between two variables	Data Analysis: Inferences, Predictions	
Measurement	Measurement	Measurement
Measurable attributes, measurement systems, and units: estimate, measure, compare, and order length, angles, weight, and capacity/volume	Length, Angles, Weight, Capacity/Volume	
Measurable attributes, measurement systems, and units: estimate, measure, compare, and order time, temperature, and money	Time, Temperature, Money	
Measurable attributes, measurement systems, and units: estimate and verify a quantity using objects and non-standard units; conversions and scale factors for units within the same system; compare and convert measurements between standard and metric systems	Conversions: Metric, Standard, Non-Standard	



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Measurement tools, techniques, and formulas: determine effects of scalar change on area and volume; use unit analysis and estimation to verify computations; determine the degree of precision and accuracy of measurements; apply indirect measurement techniques to measure irregular or inaccessible objects	Unit Analysis, Precision, Indirect Measurement	
Measurement tools, techniques, and formulas: select appropriate tools and units; estimate, measure, and use formulas to calculate perimeter or circumference, area, surface area, and volume: squares, rectangles, triangles, regular polygons, parallelograms, trapezoids, circles, rectangular prisms, right prisms, square pyramids, right cylinders, right cones, and spheres; analyze relationships between perimeter, area, and volume	Perimeter, Area, Surface Area, Volume	
Algebra, Functions, and Patterns	Algebra, Functions, and Patterns	Algebra, Func, Patterns
Patterns, relations and functions: repeating and growing patterns: identify, extend, determine missing terms, create, and state the rule using tables and graphs; identify, sort, and classify objects by attributes; solve problems	Patterns: Repeating, Growing	
Patterns, relations and functions: identify and describe patterns in sequences, state the recursive and/or explicit definition of the rule; extend the sequence or generate a specific term, including Pascal's triangle and Fibonacci sequence	Sequences: Recursive, Explicit	
Patterns, relations and functions: express relations and functions using multiple representations: table, graph, equation, ordered pairs; determine whether a relation is a function; generate and label graphs of functions: linear, quadratic, polynomial, absolute value, and exponential; perform arithmetic operations, composition, and find inverses of functions	Relations, Functions: Represent, Operations	

Numeric and algebraic representations: develop, rewrite, and simplify or solve algebraic expressions, equations, or inequalities with one or two variables to represent relationships; apply the properties of the real numbers and order of operations; linear equations, inequalities, or systems; quadratic equations, including complex roots; literal equations	Algebraic Expressions, Equations, Inequalities	
Mathematical modeling: use equations, inequalities, graphs, and tables to represent and solve problem situations; determine linearity of a function; determine and write equations for functions	Model Problems: Equation, Inequality, Graph	
Rates of change: approximate, interpret, and solve rate problems from graphical and numerical data	Rate of Change: Interpret, Graph, Estimate	

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Reading Goal Structure	Reading DesCartes	Reading Report Names
Literary, Informational Genres and Elements	Literary, Informational Genres and Elements	Literary Info Genre, Elements
Differentiate characteristics of fiction and nonfiction	Differentiate Charac of Fiction/Nonfiction	
Analyze elements of fiction	Analyze Elements of Fiction	
Determine characteristics of text	Determine Characteristics of Text	
Phonics; Word Recognition; Vocabulary	Phonics, Word Recognition, Vocabulary	Phonics, Word, Vocab
Use phonics to decode words	Use Phonics to Decode Words	
Use word recognition skills	Use Word Recognition Skills	
Build and apply vocabulary	Build and Apply Vocabulary	
Reading Strategies: Comprehension	Reading Strategies: Comprehension	Reading: Comprehension
Recall details and events in sequence	Recall Details and Events in Sequence	
Relate text using connections	Relate Text Using Connections	
Use strategies to improve comprehension	Use Strategies to Improve Comprehension	
Locate main idea and identify supporting details	Locate Main Idea, Identify Supporting Details	
Reading Strategies: Interpreting	Reading Strategies: Interpreting	Reading: Interpreting
Identify techniques in persuasive writing	Identify Techniques in Persuasive Writing	
Generate predictions	Generate Predictions	
Use comprehension strategies	Use Comprehension Strategies	
Purpose; Literary Elements and Techniques	Purpose; Literary Techniques	Purpose, Lit Techniques
Analyze purpose and point of view	Analyze Purpose and Point of View	
Interpret figurative language	Interpret Figurative Language	



Analyze literary techniques and devices	Analyze Literary Techniques and Devices	
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Language Usage Goal Structure	Language Usage DesCartes	Language Usage Report Names
Engage in the Writing and Research Process: Forms of Writing, Research	Writing and Research Process	Writing and Research
Write descriptive, narrative, and personal compositions	Write Descriptive, Narrative, and Personal Compositions	
Produce persuasive writing	Produce Persuasive Writing	
Write business documents	Write Business Documents	
Write expository texts	Write Expository Texts	
Research planning, organizing, presentation, process, and evaluation	Research Planning, Organizing, Presentation, Process, and Evaluation	
Engage in the Writing and Research Process: Prewriting, Drafting, Revising, and Editing	Prewrite, Draft, Revise, Edit	Prewrite, Draft Revise, Edit
Prewriting: demonstrate planning ideas	Prewriting: Demonstrate Planning Ideas	
Prewriting: identify audience and purpose	Prewriting: Identify Audience and Purpose	
Drafting and revising: organize and develop paragraphs	Drafting and Revising: Organize and Develop Paragraphs	
Editing: edit compositions for conventions	Editing: Edit Compositions for Conventions	
Understand and Use Principles of Language: Parts of Speech	Parts of Speech	Parts of Speech
Use parts of speech (nouns, pronouns)	Use Parts of Speech: Nouns, Pronouns	
Use parts of speech (verbs, adjectives)	Use Parts of Speech: Verbs, Adjectives	
Use parts of speech (adverbs, prepositions)	Use Parts of Speech: Adverbs, Prepositions	
Use parts of speech (conjunctions, interjections, negatives)	Use Parts of Speech: Conjunctions, Interjections, Negatives	
Use parts of speech (grammar)	Use Parts of Speech: Grammar	



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Understand and Use Principles of Language: Sentence Structure; Literary Elements and Techniques	Sentence Structure and Literary Elements	Sentence Struc, Lit Elements
Use a variety of sentence structures	Use a Variety of Sentence Structures	
Recognize subject and predicate	Recognize Subject and Predicate	
Use figurative language and sound patterns	Use Figurative Language and Sound Patterns	
Understand and Use Principles of Language: Spelling, Punctuation, and Capitalization	Spelling, Punctuation, Capitalization	Spelling, Punc, Capitalization
Use conventions of spelling	Use Conventions of Spelling	
Use conventions of punctuation	Use Conventions of Punctuation	
Use conventions capitalization	Use Conventions Capitalization	