

# Measures of Academic Progress (MAP) Virginia 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.

<b>Mathematics 2-5 Goal Structure</b>	<b>Mathematics 2-5 DesCartes</b>	<b>Mathematics 2-5 Report Names</b>
<b>Number and Number Sense</b>	<b>Number and Number Sense</b>	<b>Number and Number Sense</b>
Whole number concepts, place value, number patterns, and prime and composite numbers: Identify and write the ordinal numbers; count forward by ones, twos, fives, and tens and backward by ones; read and write six-digit numerals and identify the place value and value of each digit; compare and round whole numbers expressed through millions; identify and describe the characteristics of even, odd, prime and composite numbers; recognize and use the inverse relationships between addition/subtraction and multiplication/division to complete basic fact sentences and solve problems.	Whole Number Concepts	
Fraction concepts, decimals, and rounding decimals: Name and write fractions represented by a model; represent equivalent fractions; recognize and name fractions in their equivalent decimal form and vice versa; compare and order fractions and decimals; read, write, represent, and identify decimals expressed through thousandths; round decimals to the nearest whole number, tenth, and hundredth.	Fraction and Decimal Concepts	

Computation and Estimation	Computation and Estimation	Computation and Estimation
<p>Whole number operations, factors and multiples, multistep applications, order of operations: Add, subtract, multiply, and divide; estimate sums, differences, products, and quotients; solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division; evaluate whole number numerical expressions, using the order of operations limited to parentheses, addition, subtraction, multiplication, and division; determine least common multiple and greatest common factor.</p>	<p>Whole Numbers: Operations &amp; Applications</p>	
<p>Fraction and decimal operations: Add and subtract fractions having like and unlike denominators and simplify the resulting fractions, using common multiples and factors; solve single-step and multistep practical problems involving addition and subtraction with fractions and mixed numbers and express answers in simplest form; find the sum, difference, product, and quotient of two numbers expressed as decimals; solve single-step and multistep practical problems involving decimals.</p>	<p>Fractions &amp; Decimals: Operations &amp; Applications</p>	
Measurement	Measurement	Measurement
<p>U.S. Customary and metric units, instruments and attributes, nonstandard measurement, volume, linear measurement, weight/mass, equivalence: Estimate and measure liquid volume, weight/mass, and length; identify equivalent measurements within the U.S. Customary system and within the metric system; estimate and then measure to solve problems; choose an appropriate unit of measure; identify the instruments used to measure length, weight, time, and temperature; compare two objects or events, using direct comparisons or nonstandard units of measure.</p>	<p>Volume; Linear, and Weight/Mass</p>	

Time, money, and temperature: Tell time to the nearest minute, using analog and digital clocks; identify equivalent periods of time; determine an amount of elapsed time; determine the value of a collection of bills and coins, compare the value of the bills and coins, and make change; read temperature to the nearest degree from a Celsius thermometer and a Fahrenheit thermometer.	Time, Money, and Temperature	
Perimeter, area, volume, circles, and angles: Estimate and find perimeter, area, and volume in standard units of measure; solve practical problems with perimeter, area, and volume; count the number of square units needed to cover a given surface in order to determine area; differentiate among perimeter, area, and volume; identify and describe the diameter, radius, and circumference of a circle; measure right, acute, obtuse, and straight angles.	Perimeter, Area, Volume, Circles, & Angles	
<b>Geometry</b>	<b>Geometry</b>	<b>Geometry</b>
Characteristics of plane and solid figures, classification, and subdividing: Identify, describe, compare, and contrast characteristics of plane and solid geometric figures; describe the location of one object relative to another; classify triangles and angles; identify and describe representations of points, lines, line segments, rays, and angles; identify representations of lines that illustrate intersection, parallelism, and perpendicularity; describe the results of combining and subdividing plane figures.	Plane and Solid Figures	
Symmetry, congruence, and representations: Identify figures with at least one line of symmetry; identify and describe congruent and non-congruent plane figures; investigate congruence of plane figures after geometric transformations, such as reflection, translation, and rotation; recognize the images of figures resulting from geometric transformations, such as translation, reflection, and rotation.	Symmetry, Congruence, and Representations	

<b>Probability and Statistics</b>	<b>Probability and Statistics</b>	<b>Probability and Statistics</b>
Data collection, display, and applications and measures of center: Collect, organize, display, and interpret data from a variety of graphs; construct picture graphs, pictographs, bar graphs, and line plots; analyze, read, and interpret data displayed in picture graphs, pictographs, bar graphs, and line plots; collect, organize, and interpret data in a variety of forms, using stem-and-leaf plots and line graphs; find the mean, median, mode, and range of a set of data.	Applications of Data & Measures of Center	
Chance and outcomes: Use data from experiments to predict outcomes when the experiment is repeated; make predictions and determine the probability of an outcome by constructing a sample space; predict the likelihood of an outcome of a simple event; represent probability as a number between 0 and 1, inclusive.	Chance and Outcomes	
<b>Patterns, Functions, and Algebra</b>	<b>Patterns, Functions, and Algebra</b>	<b>Algebra</b>
Attributes and patterning: Sort and classify concrete objects according to one or more attributes; identify, create, and extend a wide variety of patterns; recognize and describe a variety of patterns formed using numbers, tables, and pictures, and extend the patterns, using the same or different forms; recognize, create, and extend numerical and geometric patterns; describe the relationship found in a number pattern and express the relationship.	Attributes and Patterning	
Numerical sentences, equality, equations, and properties: Recognize and demonstrate the meaning of equality in an equation; solve problems by completing numerical sentences; write an open sentence to represent a given mathematical relationship, using a variable; model one-step linear equations in one variable, using addition and subtraction; investigate and describe the identity, commutative, associative, and distributive properties.	Numerical Sentences, Equations, & Properties	

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Mathematics 6+ Goal Structure	Mathematics 6+ DesCartes	Mathematics 6+ Report Names
<b>Number and Number Sense</b>	<b>Number and Number Sense</b>	<b>Number and Number Sense</b>
<p>Relationships among fractions, decimals, and percents: Describe and compare data, using ratios; describe fractions, decimals, and percents as ratios; identify a given fraction, decimal, or percent from a representation; demonstrate equivalent relationships among fractions, decimals, and percents; compare and order decimals, fractions, percents, and numbers written in scientific notation; demonstrate multiple representations of multiplication and division of fractions; round decimals.</p>	<p>Relationships: Fractions, Decimals, and Percents</p>	
<p>Relationships within the real number system: Identify, represent, order, and compare integers; identify and describe absolute value; describe concepts of exponents and perfect squares; determine square roots; express cube roots of whole numbers; determine scientific notation; represent arithmetic sequences, using variable expressions; simplify numerical expressions; describe the relationships between the subsets of the real number system.</p>	<p>Relationships within the Real Number System</p>	
<b>Computation and Estimation</b>	<b>Computation and Estimation</b>	<b>Computation and Estimation</b>
<p>Applications of operations with rational numbers and practical applications of operations with real numbers: Add, subtract, multiply, and divide fractions and decimals; estimate solutions and then solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of fractions, decimals, and whole numbers.</p>	<p>Compute: Rational Numbers &amp; Apply: Real Numbers</p>	

Whole number and integer operations: Model addition, subtraction, multiplication, and division of integers and whole numbers; add, subtract, multiply, and divide integers and whole numbers.	Whole Number & Integer Operations	
Proportional reasoning: Solve practical problems involving rational numbers, percents, ratios, and proportions; determine the percent increase or decrease for a given situation; determine whether a given number is a perfect square.	Proportional Reasoning, Percent, & Perfect Squares	
<b>Measurement</b>	<b>Measurement</b>	<b>Measurement</b>
Measurements and angle relationships: Measure length, weight, capacity, time, temperature, and use money; make comparisons between measurements in the U.S. Customary System of measurement and measurements in the metric system; describe the relationships among vertical angles, adjacent angles, supplementary angles, and complementary angles.	Measurements and Angle Relationships	
Two-dimensional figures and similarity: Define "pi" as the ratio of the circumference of a circle to its diameter; solve practical problems involving circumference and area of a circle; find and solve practical problems involving area and perimeter; determine whether plane figures-quadrilaterals and triangles-are similar and write proportions to express the relationships between corresponding sides of similar figures; solve real-world problems about similar geometric objects.	Two-Dimensional Figures and Similarity	
Three-dimensional objects: Determine volume and surface area; use formulas for surface area and volume of three-dimensional objects to solve real-world problems; describe how changing one measured attribute of a figure affects the volume and surface area; use similar geometric objects to determine how changes in volume of an object affect one or more dimensions of the object.	Three-Dimensional Objects	

Geometry	Geometry	Geometry
<p>Relationships, reasoning, lines, and transformations: Construct and judge the validity of a logical argument consisting of a set of premises and a conclusion; identify the coordinates of a point and graph ordered pairs in a coordinate plane; apply transformations to plane figures; identify applications of transformations; use pictorial representations, including constructions and coordinate methods, to solve problems involving symmetry and transformation; use the relationships between angles formed by two lines cut by a transversal.</p>	<p>Relationships, Reasoning, Lines, &amp; Transformations</p>	
<p>Triangles and congruence: Order the sides by length, given the angle measures; order the angles by degree measure, given the side lengths; determine whether a triangle exists; determine congruence of segments, angles, and polygons; prove two triangles are congruent or similar; verify the Pythagorean Theorem; solve real-world problems involving right triangles by using the Pythagorean Theorem and its converse, properties of special right triangles, and right triangle trigonometry.</p>	<p>Triangles &amp; Congruence</p>	
<p>Polygons, circles, and three-dimensional shapes: Identify properties of quadrilaterals; compare and contrast quadrilaterals based on properties; use properties of quadrilaterals and circles to solve real-world problems; solve practical area and perimeter problems involving composite plane figures; solve real-world problems involving angles of polygons; apply properties of circles; find arc lengths and areas of sectors in circles; construct a three-dimensional model, given the top or bottom, side, and front views.</p>	<p>Polygons, Circles, and Three-Dimensional Shapes</p>	

<b>Probability and Statistics</b>	<b>Probability and Statistics</b>	<b>Probability and Statistics</b>
Data analysis, measures of center, and distribution: Construct and analyze circle graphs, histograms, and scatter plots; make comparisons, predictions, and inferences, using information displayed in graphs; use box-and-whisker plots; decide which measure of center is appropriate; interpret variation in real-world contexts; analyze and apply the normal distribution; determine the equation of the curve of best fit in order to make predictions, and solve real-world problems; design and conduct an experiment/survey.	Data Analysis, Measures of Center, & Distribution	
Applications of probability: Compare, contrast, and determine the probability of dependent and independent events; calculate probabilities including conditional probability, addition and multiplication rules, and the Law of Large Numbers; compute and distinguish between permutations and combinations; describe the difference between the experimental probability and theoretical probability of an event; determine the probability of compound events, using the Fundamental (Basic) Counting Principle.	Applications of Probability	
<b>Patterns, Functions, and Algebra</b>	<b>Patterns, Functions, and Algebra</b>	<b>Algebra</b>
Expressions, operations, and sequences: Identify and extend geometric and arithmetic sequences; apply the properties of arithmetic and geometric sequences and series to solve real-world problems; evaluate algebraic expressions; represent verbal quantitative situations algebraically and evaluate these expressions; perform operations on polynomials; factor polynomials completely; perform operations on complex numbers and identify field properties that are valid for the complex numbers.	Expressions, Operations, and Sequences	

<p>Equations and inequalities: Solve linear equations in one variable, literal equations, linear and quadratic equations in two variables, linear and nonlinear systems of equations, linear inequalities and systems of inequalities in two variables, absolute value equations and inequalities, equations containing rational algebraic and radical expressions, and real-world problems involving equations and systems of equations; graph linear equations and inequalities in two variables; write the equation of a line; graph inequalities on a number line; use linear programming techniques; apply the properties of operations with real numbers.</p>	<p>Equations, Inequalities, &amp; Properties</p>	
<p>Functions: Analyze function families and their characteristics, including continuity, maxima and minima, domain and range, zeros, intercepts, finding the values of a function, intervals in which the function is increasing/decreasing, end behaviors, asymptotes, inverse of a function, and composition of multiple functions; recognize the general shape of function families; convert between graphic and symbolic forms of functions, solve real-world problems involving inverse variation, joint variation, and direct and inverse variations; write an equation, given the graph of a function.</p>	<p>Functions</p>	

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Reading Goal Structure	Reading DesCartes	Reading Report Names
<p><b>The student will understand and apply phonetic principles and strategies, word analysis, organization of print and semantic clues, and will apply knowledge of word origins, affixes, derivations, and figurative language in authentic texts</b></p>	<p><b>Word Origins, Expand Vocabulary, Semantics</b></p>	<p><b>Word Analysis, Word Meanings</b></p>
<p>Understand and apply phonetic principles and strategies, word analysis, organization of print and semantic clues; use context clues or pictures to determine and clarify the meanings of unfamiliar words and phrases; use context clues or pictures to determine and clarify the meanings of unfamiliar words and phrases.</p>	<p>Apply Phonetics, Word Analysis, Context Clues</p>	
<p>Use knowledge of roots, cognates, affixes, synonyms, antonyms, homophones and word-reference materials to expand vocabulary, understand complex words, and determine definition, pronunciation, etymology, spelling, and usage of words.</p>	<p>Use Word Parts, Synonyms, Antonyms, Homophones</p>	
<p>Use context and sentence structure to determine multiple meanings of words; discriminate between connotative and denotative meanings; identify the meanings of idioms and allusions in text.</p>	<p>Identify Idioms, Allusions, Figurative Language</p>	
<p><b>The student will read, comprehend, and analyze a variety of fictional texts of different cultures and eras</b></p>	<p><b>Comprehension of a Variety of Fictional Texts</b></p>	<p><b>Fictional Texts</b></p>
<p>Identify, describe, and explain the relationships among elements of literature: characters, plot, setting, tone, point of view, theme, dramatic conventions, and conflict.</p>	<p>Explain Relationships Among Literary Elements</p>	
<p>Compare and contrast forms and genres of fictional text; understand the author's use of conventional elements and characteristics within a variety of genres; compare and contrast literacy elements within a variety of genres.</p>	<p>Compare Characteristics of Fictional Text</p>	

Identify main and supporting ideas; summarize text; generate and respond to literal, inferential, evaluative, synthesizing, and critical thinking questions involving literary texts.	Identify Main Ideas, Details, Summarize	
Make predictions, make inferences, and draw conclusions based on literary texts.	Draw Conclusions, Infer, Make Predictions	
Describe and explain the impact of figurative language including symbols, imagery, figures of speech and sound in poetry (rhythm, rhyme, onomatopoeia, repetition, alliteration, assonance, parallelism).	Describe Impact of Devices, Sound, Imagery	
Identify the author's purpose; explain the relationship between the author's style and literary effect; analyze how context, specific word choices, tone, voice, and language structures support author's purpose and convey an author's intent and viewpoint.	Analyze Author Purpose, Style, Viewpoint	
<b>The student will read, comprehend, interpret, analyze, and evaluate a variety of nonfiction texts</b>	<b>Comprehension of a Variety of Nonfiction Texts</b>	<b>Nonfiction Texts</b>
Locate information to answer questions; synthesize information to solve a problem or complete a task.	Locate Information, Complete Tasks	
Identify, recognize, and explain an author's intended purpose and audience and position/argument, and how word choice and language structure convey an author's viewpoint.	Recognize Author Purpose, Position, Viewpoint	
Identify structural and organizational patterns; identify characteristics of expository, technical, and persuasive texts; identify and distinguish between compare and contrast relationships; identify cause and effect relationships; analyze two or more texts addressing the same topic to determine how authors reach similar or different conclusions; distinguish and differentiate between fact and opinion; identify text features such as pictures, headings, charts, and captions and interpret and use data and information in maps, charts, graphs, timelines, tables, and diagrams to aid comprehension.	Identify Structure, Characteristics, Features	

Identify the main idea; summarize major points and supporting details found in nonfiction text.	Identify Main Ideas, Details, Summarize	
Make inferences, draw conclusions, and make and confirm predictions based on explicit and implied information, using evidence from the text as support.	Draw Conclusions, Infer, Make Predictions	

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Language Usage Goal Structure	Language Usage DesCartes	Language Usage Report Names
<p>The student will write to communicate ideas in a variety of forms including stories, letters, simple explanations, narration, exposition, persuasion, and informational and for a variety of audiences and purposes</p>	<p>Communicate Ideas in a Variety of Forms</p>	<p>Forms of Writing</p>
<p>Use a variety of prewriting strategies including graphic organizers, to generate, gather, plan, and organize ideas; narrow the focus of a search; develop a plan for research; collect and organize information from multiple sources including online, print and media; evaluate and select appropriate sources to access information and answer questions; collect information to support a thesis; make sense of information gathered from diverse sources by identifying misconceptions, main and supporting ideas, conflicting information, point of view or bias; cite primary and secondary sources; credit the sources of quoted, paraphrased, and summarized ideas using a standard method of documentation; select specific vocabulary and information for audience and purpose; use rhetorical strategies; write clear and varied sentences, and clarifying ideas with precise and relevant evidence; create arguments free of errors in logic with precise and relevant evidence to accomplish a specific purpose.</p>	<p>Prewrite, Evaluate Sources, Create Arguments</p>	
<p>Recognize that different modes of writing have different patterns of organization; organize writing structure to fit mode or topic.</p>	<p>Organize to Fit Mode or Topic</p>	

<p><b>Organize writing to include a beginning, middle, and end; establish a central idea; provide unity; organize paragraphs and ideas into a logical progression and sequence using transitions; revise by adding descriptive words when writing about people, places, things, and events; include descriptive detail that elaborate the central idea, tone, and voice through word choice, sentence variety, and transitions among paragraphs</b></p>	<p><b>Organize for Unity, Sequence, Elaborate Ideas</b></p>	<p><b>Organize and Elaborate Ideas</b></p>
<p>Write a clear topic sentence or thesis statement focusing on the main idea; distinguish between a thesis statement and a topic sentence; organize details to elaborate the central idea and provide unity; arrange paragraphs into a logical progression; organize ideas into a logical sequence using transitions.</p>	<p>Establish a Central Idea, Details, Paragraphs</p>	
<p>Revise by adding descriptive words when writing about people, places, things, and events; revise sentences for clarity of content including specific vocabulary and information; use precise and descriptive vocabulary and information to enhance the central idea, tone, and voice; elaborate ideas clearly through word choice and vivid description; revise writing for accuracy and depth of information, and technique of presentation.</p>	<p>Revise for Description, Clarity, Tone, Voice</p>	
<p><b>The student will write, revise, and edit writing for correct grammatical conventions, sentence structure, and paragraphing</b></p>	<p><b>Edit for Grammar, Structure, Paragraphing</b></p>	<p><b>Grammatical Structure</b></p>
<p>Apply grammatical conventions to edit writing for correct use of language; recognize and use complete sentences; edit for fragments and run-on sentences; maintain tense and point of view; eliminate double negatives.</p>	<p>Edit for Sentences, Tense, Point of View</p>	

Use noun-pronoun agreement, and pronoun-antecedent agreement to include indefinite pronouns; include prepositional phrases, adjectives, and comparative and superlative degrees in adverbs and adjectives; use articles; use appositives, main clauses, and subordinate clauses; choose the correct case and number for pronouns in prepositional phrases with compound objects.	Use Agreement, Phrases, Clauses, Case	
Use and punctuate declarative, interrogative, and exclamatory sentences; use a variety of graphic organizers, including sentence diagrams, to analyze and improve sentence formation and paragraph structure; use transition words to vary sentence structure; use and punctuate correctly varied sentence structures to include conjunctions, transition words, and parallel structures; identify and use conjunctions and interjections	Use Sentence Types, Transitions, Structures	
Identify the eight parts of speech and their functions in sentences; distinguish between active and passive voice.	Identify Parts of Speech, Voice	
<b>The student will write, revise, and edit writing for correct capitalization, spelling, and punctuation</b>	<b>Edit for Capitalization, Spelling, Punctuation</b>	<b>Edit for Conventions</b>
Edit writing for correct use of capitalization.	Edit for Correct Capitalization	
Edit writing for correct use of spelling, including commonly used sight words, compound words, regular and irregular plurals, common homophones, abbreviations, contractions, and singular and plural possessives.	Edit for Correct Spelling	

<p>Edit writing for correct use of punctuation; use commas in the salutation and closing of a letter, in a simple series, dates, and addresses, and to indicate interrupters; use commas and semicolons to distinguish and divide main and subordinate clauses; use apostrophes in contractions with pronouns and in possessives; capitalize all proper nouns and the word I in compound subjects; use a hyphen to divide words at the end of a line; use quotation marks with dialogue and direct quotations.</p>	<p>Edit for Correct Punctuation</p>	
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