

Measures of Academic Progress (MAP) Tennessee 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
Number & Operations	Number & Operations	Number & Operations
Number Systems: Understand numbers, ways of representing numbers, relationships among numbers, and number systems; count, read, write and recognize the place value of numbers; represent numbers in flexible ways using a variety of materials; recognize and generate equivalent forms of commonly used fractions, decimals, and percents; represent, order, and compare whole numbers and commonly used fractions and mixed numbers*	Number Systems	

<p>Operations: Understand meanings of operations and how they relate to one another; write and identify number sentences that describe real-world situations involving addition, subtraction, and multiplication; explain and demonstrate the inverse nature of addition and subtraction; connect division to sharing situations; explain and demonstrate the inverse nature of multiplication and division; communicate the effects of addition, subtraction, multiplication, and division on size and order of numbers; use commutative, associative, and identity properties*</p>	<p>Operations</p>	
<p>Estimate & Solve Problems: Solve problems, compute fluently, and make reasonable estimates; explain and justify solutions and strategies in problem solving; solve real-world problems involving one-step addition, subtraction, and multiplication; use strategies to estimate in problem-solving situations; add and subtract fractions with like denominators; use models, benchmarks, and equivalent forms to add and subtract commonly used fractions with like and unlike denominators; add, subtract, multiply, and divide whole numbers and decimals; solve real-world problems using whole numbers, fractions, decimals and percents; solve multi-step real-world problems*</p>	<p>Estimate & Solve Problems</p>	
<p>Algebra</p>	<p>Algebra</p>	<p>Algebra</p>
<p>Algebraic Properties & Symbols: Sort and classify objects by size, number, and other properties; illustrate general properties of operations; apply commutative, associative, zero, distributive, and identity properties; use concrete, pictorial, and verbal representations to develop an understanding of the language and symbols of mathematics; represent and analyze mathematical situations and structures using algebraic symbols; interpret and solve open sentences that involve addition, subtraction, multiplication, and division; represent the idea of a variable as an unknown quantity using a letter or a symbol; express mathematical relationships using equations</p>	<p>Algebraic Properties & Symbols</p>	

<p>Patterns, Functions & Change: Represent and analyze patterns, relations and functions; recognize, describe, extend, translate, and create patterns; determine the output for a particular input given the one-operation function rule involving addition and subtraction or multiplication; identify, describe and apply basic function rules; analyze change in various contexts</p>	<p>Patterns, Functions & Change</p>	
<p>Geometry & Measurement</p>	<p>Geometry & Measurement</p>	<p>Geometry & Measurement</p>
<p>Geometric Properties: Analyze characteristics and properties of two- and three-dimensional shapes; recognize, name, classify, build, draw, compare and analyze two- and three-dimensional geometric figures; recognize symmetrical and congruent shapes; draw points, lines, line segments, rays, and angles; identify and describe the attributes of a circle using appropriate mathematical language (e.g., radius, diameter, center); compare and contrast congruent and symmetrical geometric figures</p>	<p>Geometric Properties</p>	
<p>Coordinate Geometry, Transformation & Location: Specify locations and describe spatial relationships using coordinate geometry and other representational systems; predict, and describe the results of transformations of two-dimensional geometric figures; describe line and rotational symmetry in two-dimensional figures; use visualization, spatial reasoning, and geometric modeling to solve problems; build a three-dimensional object from a two-dimensional representation (nets) of that object</p>	<p>Coordinate Geometry, Transformation & Location</p>	

Measurement: Demonstrate understanding of units of measure and measurable attributes of objects; demonstrate understanding of the concepts of length, perimeter, area, weight, capacity, volume, time, angle measure, circumference, and elapsed time; apply appropriate estimation strategies using standard units of measure; demonstrate understanding of the relationships among the units within the same system of measurements; read and record temperature using Fahrenheit and Celsius scales; solve real-world problems involving elapsed time; explain and demonstrate how scale in maps and drawings shows relative size and distance	Measurement	
Data Analysis & Probability	Data Analysis & Probability	Data Analysis & Probability
Represent, Interpret & Analyze Data: Develop, select, and use appropriate methods to collect, organize, display, and analyze data; represent data using tables, pictographs, line graphs, bar graphs, tables, circle graphs, and line graphs; make and justify predictions based on data; develop and evaluate inferences and predictions that are based on data	Represent, Interpret & Analyze Data	
Probability & Counting Principles: Apply the basic concepts of probability; describe the likelihood or chance of events as likely, unlikely, certain, equally likely, or impossible; predict the probability of outcomes of simple experiments; understand that the measure of the likelihood of an event can be represented as a number from 0-1	Probability & Counting Principles	

*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 & Operations	Number & Operations	Number & Operations
Number Systems: Represent & Apply: Understand numbers, ways of representing numbers, relationships among numbers, and number systems; recognize, order, represent, and graph rational and irrational numbers, including absolute value; represent equivalent numbers using a variety of forms; understand and use ratios and proportions to represent quantitative relationships; develop the concept of prime and composite numbers; recognize and use exponential, scientific to represent large numbers in real-world situations; perform operations on algebraic expressions; perform operations on matrices*	Number Systems: Represent & Apply	
Operations: Using Properties: Apply the associative and commutative properties of addition and multiplication to simplify computations with integers, fractions, and decimals; use the distributive property; apply order of operations in computing with rational numbers*	Operations: Using Properties	
Operations: Compute, Estimate & Solve Problems: Select and use appropriate methods and tools for computing and estimating with whole numbers, fractions, decimals, percents, and integers in problem-solving situations; develop, analyze, and explain methods for solving problems involving proportions; calculate rates involving cost per unit; raise rational numbers to whole number powers*	Operations: Compute, Estimate & Solve Problems	
Algebra	Algebra	Algebra

<p>Patterns, Functions & Change: Describe, extend, analyze, and create a wide variety of patterns and functions and representations in real-world problem solving; demonstrate an understanding of the behavior of a variety of functions and their graphs; solve linear systems using a variety of techniques; apply the concept of rate of change; graph inequalities and interpret graphs of inequalities; describe the domain and range of functions; find and represent solutions of quadratic equations; develop understanding for arithmetic and geometric sequences; describe the relationship between two quantities represented in a scatterplot</p>	<p>Patterns, Functions & Change</p>	
<p>Expressions, Linear Equations & Inequalities: Represent and analyze mathematical situations and structures using algebraic symbols; use a variety of methods to solve real-world problems involving multi-step linear equations; develop meaning for intercept and slope; use a variety of forms to represent linear relationships; recognize and generate equivalent forms for simple algebraic expressions; solve linear inequalities; identify the graph of a linear equation</p>	<p>Expressions, Equations & Inequalities</p>	
<p>Geometry & Measurement</p>	<p>Geometry & Measurement</p>	<p>Geometry & Measurement</p>
<p>Geometric Properties & Relationships: Analyze characteristics and properties of two- and three-dimensional geometric figures; demonstrate understanding of geometric properties of congruence, similarity, perpendicularity, and parallelism; solve problems using angle relationships; apply right triangle relationships, Pythagorean Theorem, the distance formula, and trigonometric ratios; solve problems using the midpoint formula</p>	<p>Geometric Properties & Relationships</p>	
<p>Coordinate Geometry & Transformation: Specify locations and describe spatial relationships using coordinate geometry; apply transformations and use symmetry to analyze mathematical situations; use two-dimensional representations of three-dimensional objects to visualize</p>	<p>Coordinate Geometry & Transformation</p>	

Measurement: Length, Perimeter, Area & Volume: Apply appropriate units of measurement; develop effective estimation and computation strategies for solving real world problems involving length, area, surface area , and volume; solve problems involving rate/time/distance (i.e., $d = rt$); find measures using proportional relationships and properties of similar figures; solve real-world problems using the Pythagorean Theorem	Measurement: Length, Perimeter, Area & Volume	
Data Analysis & Probability	Data Analysis & Probability	Data Analysis & Probability
Represent, Interpret & Analyze Data: Interpret a set of data using the appropriate measure of central tendency; choose, construct, and analyze appropriate graphical representations for a data set; develop and evaluate inferences and predictions that are based on data; analyze the validity of statistical conclusions and the use, misuse, and abuse of data; apply counting principles of permutations and combinations	Represent, Interpret & Analyze Data	
Probability & Counting Principles: Understand and apply basic concepts of probability; construct a tree diagram to determine all possible outcomes of a simple event; use a variety of methods to compute probabilities for compound events; distinguish between theoretical and experimental probability; find the probability of dependent and independent events	Probability & Counting Principles	

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Reading Goal Structure	Reading DesCartes	Reading Report Names
Language: Students will apply strategies to develop phonemic awareness and decode text	Use Strategies to Decode Words, Expand Vocabulary	Phonics, Vocabulary
Language: Students will develop and maintain phonemic awareness; understand and apply the alphabetic principle; identify rhyming words; identify words that have the same beginning, middle, and ending sounds	Develop Phonemic Awareness, Alphabetic Principle	
Language: Students will use roots, affixes, and word parts such as blends, vowels, digraphs, and diphthongs to decode text	Use Roots, Affixes, Word Parts	
Language: Students will use context clues, compound words, and contractions to decode grade level words, unfamiliar words, and to use content specific vocabulary	Use Context Clues, Compound Words, Contractions	
Language: Students will use synonyms and antonyms and determine the correct meaning and usage of homonyms and multiple meaning words	Use Synonyms, Antonyms, Multiple Meaning Words	
Students will develop logic skills to enhance thoughtful reasoning and to facilitate learning	Develop Logic Skills	Logic Skills
Students will construct and complete word analogies, make inferences, and draw conclusions	Make Analogies, Inferences, Conclusions	
Students will identify and analyze persuasive devices that are used in written and oral communication	Analyze Persuasion, Argument, Fact and Opinion	

Students will apply skills and strategies to comprehend informational text	Comprehend Informational Text	Informational Text
Students will apply skills and strategies to comprehend informational text before and while reading: Predict, infer, draw conclusions, follow directions	Preview Text, Predict, Follow Directions	
Students will apply skills and strategies to comprehend informational text after reading: Summarize and paraphrase the main ideas in informational text; sequence events; identify author's purpose	Summarize, Paraphrase, Identify Purpose	
Students will identify essential and non-essential details in informational texts	Identify and Distinguish Essential Details	
Students will analyze the organizational structures and characteristics of complex informational and technical texts	Analyze Text Structures, Text Characteristics	
Students will apply skills and strategies to comprehend literary text	Comprehend Literary Text	Literary Text
Students will apply skills and strategies to comprehend literary text before, during, and after reading: Predict, summarize and paraphrase; locate information, identify author's purpose	Predict, Locate Information, Author's Purpose	
Students will understand the characteristics and conventions of various literary genres; distinguish between fantasy and reality; identify parts of a book	Understand Characteristics of Literary Genres	
Students will recognize and understand basic plot development techniques, theme, and literary elements such as compare and contrast and cause and effect to derive meaning and comprehension from various literary genres	Understand Literary Terms and Elements	
Students will recognize and interpret basic literary devices and comprehend figurative language in literary text	Interpret Literary Devices, Figurative Language	
Students will analyze text to identify author attitude and viewpoint; narration and point of view	Analyze Author Viewpoint, Point of View	

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Language Usage Goal Structure	Language Usage DesCartes	Language Usage Report Names
Students will demonstrate control of basic Standard English through the use of grammar	Use Correct Grammar	Grammar
Students will demonstrate a mastery of adjectives, adverbs, conjunctions, prepositions, interjections, phrases and clauses, and recognize and correct usage errors	Use Modifiers, Prepositions, and Phrases	
Students will identify the correct use of nouns, verbs, and pronouns	Use Nouns, Verbs, and Pronouns	
Students will demonstrate control of basic Standard English sentence structure	Use Correct Sentence Structure	Sentence Structure
Students will identify basic sentence patterns and demonstrate knowledge of correct sentence structure by correcting run-on sentences and sentence fragments by applying a variety of sentence-combining techniques; students understand that a sentence is a group of words that has a subject, verb, and expresses a complete thought	Use Correct Sentences; Correct Run-on Sentence	
Students will identify and recognize different kinds of sentences including statements, questions, commands, and exclamations and apply appropriate end marks when writing; students will recognize and differentiate among types of sentences including simple, compound, and complex sentences	Recognize and Differentiate Sentence Types	
Students will demonstrate control of basic Standard English through the use of punctuation, capitalization, and spelling	Use Punctuation, Capitalization, Spelling	Conventions
Students will know and use correctly Standard English conventions for capitalization	Use Correct Capitalization	

Students will demonstrate the correct use of punctuation	Use Correct Punctuation	
Students will recognize, identify, and use correct spelling	Use Correct Spelling	
Students will know and apply the steps of the writing process: Prewriting, drafting, revising, editing, evaluating, and publishing	Apply the Steps of the Writing Process	Writing Process
Students will revise writing to clarify thought, to refine ideas, and improve details; students will revise documents to develop or support ideas more clearly and craft a tone, mood, and style that conveys the writer's purpose and audience	Employ Prewriting Strategies to Compose Drafts	
Students will edit writing for mechanics, spelling, grammar, style, and tone and mood as appropriate to audience, purpose, and context	Revise Writing to Convey Purpose and Audience	
Students will employ a variety of prewriting strategies; students will use of a graphic organizer to gather information, outline main ideas and supporting details, and compose first drafts	Edit Writing for Mechanics, Spelling, Grammar	
Students will write in a variety of modes and genres, including narration, literary response, personal expression, description, and imaginative for a variety of purposes and audiences	Write in a Variety of Modes and Genres	Modes and Genres
Students will write creative, imaginative, and original responses to literature and will create well-developed stories, poems, narration, personal expression, and descriptive writing	Write Stories, Poems, Narration, Description	
Students will engage in research on a topic and gather relevant information from a variety of print and electronic sources; students will present a body of well-developed and specific facts and information pertinent to the topic, developed as a series of paragraphs which support the topic and employ organizational structures based on complex research information and multiple patterns appropriate to the topic and audience	Engage in Research; Use Paragraph and Structure	
Students will create sophisticated work related and expository texts	Create Expository and Work Related Texts	

<p>Students will refine the techniques of a persuasive essay, including logical reasons, coherent organization, rebuttal arguments, and rhetorical devices</p>	<p>Refine Persuasive Essays</p>	
<p>Students will incorporate vivid and precise language into writing, use compelling verbs and a variety of figurative language to address the needs of audience and purpose; students will write poetry based on personal reflections, observations, and experiences</p>	<p>Write Poetry; Use Figurative Language</p>	