

Measures of Academic Progress (MAP) Missouri 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 and Operations	Number and Operations	Number and Operations
Understand numbers, ways of representing and relationships among numbers and number systems: Read, write and compare whole numbers, unit fractions and decimals; recognize and generate equivalent forms of commonly used fractions and decimals; recognize equivalent forms of the same number and generate by decomposing and composing; skip count by multiples; describe numbers according to their characteristics (whole number common factors and multiples, prime or composite, and square numbers).	Understand Numbers and Number Systems	

Understand meanings of operation, compute fluently and make reasonable estimates: Represent or model a situation involving addition, subtraction, multiplication and division; describe the effects of adding/subtracting and multiplying/dividing and the relationship between each; demonstrate fluency with operations; apply and describe the strategy used to solve addition, subtraction, multiplication and division problems; estimate and justify sums, differences, products and quotients.	Compute Fluently and Make Reasonable Estimates	
Algebraic Relationships	Algebraic Relationships	Algebraic Relationships
Understand patterns, relations and functions: Describe, make generalizations and extend geometric and numeric patterns; describe how repeating and growing patterns are generated; represent and analyze patterns using words, tables or graphs.	Understand Patterns, Relations and Functions	
Represent and analyze mathematical situations and structures using algebraic symbols: Using all operations, represent a mathematical situation as an expression or number sentence (including using a letter or symbol); use the commutative, distributive and associative properties of addition and multiplication for multidigit numbers, fractions and decimals.	Represent and Analyze Mathematical Situations	
Use mathematical models to represent and understand quantitative relationships and analyze change in various contexts: model situations that involve addition and subtraction, using pictures, objects or symbols; model problem situations, including multiplication with objects or drawings, and draw conclusions, using representations such as graphs, tables or number sentences; describe qualitative change; identify, model and describe situations with constant or varying rates of change.	Quantitative Relationships and Change	

Geometric Relationships	Geometric Relationships	Geometric Relationships
<p>Analyze 2-D and 3-D shapes, develop arguments about geometric relationships and use visualization, spatial reasoning and geometric modeling to solve problems: Name and identify properties of 2-D and 3-D shapes and describe the attributes of the shapes using physical models and appropriate geometric vocabulary; analyze and classify 2-D and 3-D shapes; predict and justify the results of subdividing, combining and transforming shapes; identify the 3-D shape from a net.</p>	<p>Analyze 2-D and 3-D Shapes and Spatial Reasoning</p>	
<p>Specify locations and describe spatial relationships using coordinate systems, apply transformations and use symmetry to analyze geometric situations: describe location and movement; use coordinate systems to specify locations, describe paths and find the distance between points along horizontal and vertical lines; predict, draw and describe the results of translating, reflecting and rotating around a center point of a polygon; create a figure with multiple lines of symmetry and identify the lines of symmetry; identify polygons and designs with rotational symmetry.</p>	<p>Locations, Transformations and Symmetry</p>	
Measurement	Measurement	Measurement
<p>Understand measurable attributes of objects and the units, systems and processes of measurement: Compare and order objects according to size or weight; identify, justify and use the appropriate unit and tool for the attribute being measured; identify equivalent measures within a system of measurement; describe passage of time; tell time to the nearest half hour, one fourth hour, five minutes and minute; identify and know the value of money; make change from \$1.00, \$5.00 and \$10.00; add and subtract money values.</p>	<p>Understand Units and Processes of Measurement</p>	

<p>Apply appropriate techniques, tools and formulas to determine measurements: Measure objects by comparison of lengths or repetition of a single unit; select and use benchmarks to estimate measurements; determine the perimeter of polygons; determine and justify areas of polygons and non-polygonal regions; determine volume by finding the total number of the same size units needed to fill a space without gaps or overlaps; convert from one unit to another within a system of linear measurement.</p>	<p>Determine Measurements</p>	
<p>Data and Probability</p>	<p>Data and Probability</p>	<p>Data and Probability</p>
<p>Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them and use appropriate statistical methods to analyze data: Pose questions; design investigations; collect data using observations, surveys and experiments; sort and classify items according to their attributes and organize the data; represent one-to-one and one-to-many correspondence data using pictures and bar graphs; read and interpret information from line plots and graphs; describe and evaluate methods to collect, organize and represent categorical and numerical data; describe important features of the data set; compare related data sets.</p>	<p>Collect, Organize, Display and Analyze Data</p>	
<p>Develop and evaluate inferences and predictions that are based on data and understand and apply basic concepts of probability: Discuss events as likely or unlikely; propose and justify conclusions or predictions that are based on a given data set; describe the degree of likelihood of events.</p>	<p>Inferences, Predictions and Probability</p>	

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Mathematics 6+ Goal Structure	Mathematics 6+ DesCartes	Mathematics 6+ Report Names
Number and Operations	Number and Operations	Number and Operations
Understand numbers, ways of representing and relationships among numbers and number systems: Compare and order rational and irrational numbers, including finding their approximate locations on a number line; use real numbers and various models, drawings, etc. to solve problems; recognize equivalent representations for the same number and generate them by decomposing and composing numbers, including scientific notation; demonstrate an understanding of very large and very small numbers.	Understand Numbers and Number Systems	
Understand meanings of operations and how they relate to one another: Describe the effects of operations; apply properties of exponents and logarithms to simplify expressions or solve equations; identify square and cubic numbers and determine whole number roots and cubes; approximate the value of square roots to the nearest whole number; apply properties of operations to real numbers, matrices and complex numbers.	Understand Operations and How They Relate	
Compute fluently and make reasonable estimates: Apply all operations on rational; estimate and justify the results of all operations on rational numbers; judge the reasonableness of numerical computations and their results; solve problems using ratios, rates and proportions.	Compute Fluently and Make Reasonable Estimates	

Algebraic Relationships	Algebraic Relationships	Algebraic Relationships
<p>Understand patterns, relations and functions, quantitative relationships and analyze change: Represent, describe, generalize and analyze patterns; identify functions as linear or nonlinear; understand and compare the properties of linear, quadratic, exponential, logarithmic, rational and periodic functions; describe the effects of parameter changes on functions; model and solve problems using multiple representations; identify quantitative relationships and determine the type(s) of functions that might model the situation; analyze functions by investigating rates of change and intercepts.</p>	<p>Understand Patterns, Relations and Functions</p>	
<p>Represent and analyze mathematical situations and structures using algebraic symbols: Use symbolic algebra to represent unknown quantities and solve problems that involve linear, exponential, quadratic and logarithmic relationships; use properties to generate equivalent forms for simple algebraic expressions that includes all rational numbers; describe and use algebraic manipulations; use and solve equivalent forms of equations and inequalities; use and solve systems of linear and quadratic equations or inequalities with 2 variables.</p>	<p>Use Algebraic Symbols to Represent and Analyze</p>	
Geometric Relationships	Geometric Relationships	Geometric Relationships
<p>Analyze characteristics and properties of shapes and develop arguments about geometric relationships: Identify similar and congruent shapes and cross-sections of 3-D objects; describe, classify and generalize relationships between and among 2-D and 3-D objects; use inductive and deductive reasoning to establish the validity of conjectures and prove theorems; use trigonometric relationships and apply geometric properties to solve problems; apply relationships among surface areas and volumes of similar objects and determine the effect of changing one measurement.</p>	<p>Analyze Shapes and Develop Geometric Arguments</p>	

<p>Apply and use transformations, symmetry, visualization, spatial reasoning and modeling to analyze situations and solve problems: Use coordinate geometry to construct, identify and analyze properties of shapes; make conjectures and solve problems involving 2-D objects; reposition shapes under formal transformations; use and apply constructions and matrices to represent transformations; identify types of symmetries; use spatial visualizations to identify and draw 2-D views of 3-D objects from different perspectives; draw or use visual models to represent and solve problems.</p>	<p>Transformations, Symmetry and Spatial Reasoning</p>	
<p>Measurement</p>	<p>Measurement</p>	<p>Measurement</p>
<p>Understand measurable attributes of objects and the units, systems and processes of measurement: Identify the unit of measure for area and volume; identify the equivalent area and volume measures within a system of measurement; compare and contrast between angle and radian measure; solve problems involving elapsed time; solve problems involving addition and subtraction of time.</p>	<p>Understand Units and Processes of Measurement</p>	
<p>Apply appropriate techniques, tools and formulas to determine measurements: Measure angles; classify angles as acute, obtuse, right, straight, or reflex; solve problems of angle measure; solve problems involving the area or perimeter of polygons and circumference and/or area of a circle; determine the surface area and volume of figures; analyze precision and accuracy in measurement; describe the effects of operations on magnitudes of quantities and effects of computation on precision; apply concepts of successive approximation; use unit analysis to solve problems.</p>	<p>Determine Measurements</p>	
<p>Data and Probability</p>	<p>Data and Probability</p>	<p>Data and Probability</p>
<p>Formulate questions, collect, organize and display relevant data: Describe the characteristics of well designed studies; select, create and use appropriate graphical representations of data; select and use appropriate graphical representation of data and given one-variable quantitative data, describe its shape and calculate summary statistics.</p>	<p>Collect, Organize and Display Data</p>	

<p>Use appropriate statistical methods to analyze data, and develop and evaluate inferences and predictions: Apply statistical measures of center to solve problems; compare and evaluate different representations of the same data; recognize how linear transformations of single-variable data affect shape, center, and spread; using a scatter plot, determine the line of best fit, describe its shape and determine regression equations; make conjectures about possible relationships of a sample on the basis of scatter plots of the data and approximate lines of fit.</p>	<p>Analyze Data</p>	
<p>Understand and apply basic concepts of probability: Use models to compute the probability of an event and make conjectures (based on theoretical probability) about the results of experiments; describe the concepts of sample space and probability distribution; use and describe the concepts of conditional probability and independent events and how to compute the probability of a compound event.</p>	<p>Concepts of Probability</p>	

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Reading Goal Structure	Reading DesCartes	Reading Report Names
Develop and apply skills and strategies to the reading process: Print Concepts, Phonemic Awareness, Phonics, Vocabulary	Print Concepts, Phonemes, Phonics, Vocabulary	Phonics, Vocabulary
Print Concepts, Phonemic Awareness, Phonics: Demonstrate concepts of print: word by word matching; upper- and lower-case letters; develop ability to recognize sounds (phonemes) in words (phonemic awareness); demonstrate ability to use phonemes to construct words: recognize rhyming words; develop and apply decoding strategies to "problem-solve" unknown words when reading instructional text; identify letters; write letter that goes with consonant sound	Print Concepts, Phonemic Awareness, Phonics	
Vocabulary: Root Words, Affixes, and Word Chunks	Vocabulary: Root Words, Affixes, and Word Chunks	
Vocabulary: Context Clues and Using a Glossary, Dictionary, and Thesaurus	Vocabulary: Context Clues and Using Resources	
Vocabulary: Synonyms and Antonyms	Vocabulary: Synonyms and Antonyms	
Develop and apply skills and strategies to the reading process: Pre-Reading, During Reading, and Post-Reading	Pre-Reading, During Reading, and Post-Reading	Reading Process
Pre-Reading: Apply pre-reading strategies to aid comprehension; predict	Pre-Reading	
During Reading: Utilize strategies to infer, paraphrase, summarize	During Reading	
Post-Reading: Apply post-reading skills to comprehend, interpret, analyze, and evaluate text: draw conclusions; identify the main idea and supporting details; identify and explain the relationship between the main idea and supporting details	Post-Reading	

Develop and apply skills and strategies to comprehend, analyze and evaluate fiction, poetry and drama	Fiction, Poetry, Drama	Fiction, Poetry, Drama
Text Features: Analyze and evaluate the text features in grade-level text; locate, interpret and apply information in title, table of contents and glossary; recognize and interpret the text features of fiction, poetry and drama	Text Features	
Literary Techniques: Identify examples of rhythm, rhyme and alliteration; Identify and explain examples of sensory details and figurative language in text; Identify and explain literary techniques (simile, metaphor, personification, onomatopoeia, alliteration, hyperbole, imagery, propaganda, jargon, dialect, slang, symbolism, irony, repeated sound, line or phrase, parallelism, allusion, analogy, satire)	Literary Techniques	
Literary Elements: Use details from text to identify characters; make inferences about setting, character traits and problem and solution, and story events; analyze character, plot, setting, point of view; interpret behaviors, motives, and consequences of characters' actions; identify problem; identify and predict solution(s); identify setting; identify events in logical sequence; identify events from the beginning, middle and end; identify plot, including problem/conflict, climax, and resolution; identify mood, flashback, theme and types of conflict; compare and contrast; identify, explain, and analyze cause and effect; identify the narrator; identify and explain author's purpose; identify, explain, and analyze point of view; evaluate the effect of author's style; identify and analyze tone	Literary Elements	

Develop and apply skills and strategies to comprehend, analyze and evaluate nonfiction	Nonfiction	Nonfiction
<p>Text Features and Literary Techniques: Identify and explain information in text, pictures, title and charts; locate, interpret, and apply information in illustrations, title, headings, captions, diagrams, charts and graphs, chapter headings, table of contents, glossary, and maps; explain, analyze and evaluate the author's use of text features to clarify meaning; identify and explain text features in biography and autobiography; identify and explain examples of sensory details, literary techniques, and figurative language in nonfiction text</p>	<p>Text Features and Literary Techniques</p>	
<p>Text Structures and Understanding Directions: Use details from informational, persuasive, and argumentative text(s) to answer questions, sequence events, identify and explain cause and effect, compare and contrast, identify and interpret author's ideas and purpose, distinguish between fact and opinion, analyze and evaluate the accuracy and adequacy of evidence, determine authors' viewpoints, analyze and evaluate point of view, analyze and evaluate effectiveness of word choice, identify and explain the organizational pattern, identify and analyze faulty reasoning and unfounded inferences, analyze and evaluate the type of appeal (emotional, ethical, and logical); read and follow simple directions to perform a task; read and follow multi-step directions to complete a task</p>	<p>Text Structures and Understanding Directions</p>	

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Language Usage Goal Structure	Language Usage DesCartes	Language Usage Report Names
Apply a writing process in composing text: Follow a writing process; apply a writing process to write effectively in various forms and types of writing	Apply a Writing Process in Composing Text	Writing Process
Use appropriate prewriting strategies as needed; generate a draft	Prewriting Strategies; Generate Draft	
Revise for audience and purpose, ideas and content, organization and sentence structure, and word choice; revise in response to feedback; revise writing to clarify meaning and enhance descriptions; edit for conventions	Revise and Edit	
Compose Well-developed text: Audience and Purpose, Ideas and Content, Organization and Sentence Structure, Word Choice	Compose Well-developed Text: Content	Compose Text: Content
Audience and Purpose: Compose text showing awareness of audience; in a format appropriate to audience and purpose; choosing a form appropriate to topic and specific audience; choosing a form and point of view appropriate to purpose and audience	Audience and Purpose	
Ideas and Content and Organization and Sentence Structure: Compose text with strong controlling idea, relevant specific details, complex ideas; compose text with a simple opening and simple closing; a clear and effective beginning, middle, and end; a logical sequence of events/order; appropriate/effective paragraphing; complete sentences or thoughts (declarative and interrogative); sentence variety (including imperative and exclamatory); a variety of sentence structures, including simple and compound, complex sentences, and compound-complex; cohesive devices, including transitions and parallel structure; clarity of expression	Ideas, Content, Organization, Sentence Structure	

Word Choice: Compose text using words that are related to the topic, and some words that are specific and accurate; compose text using precise and vivid language, writing techniques such as figurative language, sensory detail and purposeful dialogue, imagery, and rhetorical devices	Word Choice	
Compose Well-developed text: Conventions	Compose Well-developed Text: Conventions	Compose Text: Conventions
Apply and use conventions of capitalization: capitalize names of people and beginning words of sentences; capitalize days of the week, names of towns, cities, states; capitalize months of the year, titles of individuals, greeting and closing of letter; capitalize holidays, names of counties and countries; capitalize titles and proper nouns; capitalize proper adjectives; capitalize appropriate words in dialogue; capitalize within dialogue	Capitalization	
Apply and use conventions of punctuation: use ending punctuation in written text; use a period at the end of sentence and a comma in the greeting and closing of a letter; use correct ending punctuation in declarative and interrogative sentences, comma in dates; use correct ending punctuation in imperative and exclamatory sentences; use commas in a series, and between city and state; use comma in compound sentences, apostrophe in irregular and plural possessives, quotation marks in dialogue; use commas in quotation marks in dialogue, and semi-colon in compound sentences; punctuate prepositional phrases and appositives correctly; use apostrophe in contractions and singular possessives; use colon to introduce lists	Punctuation	

Apply and use standard usage: use naming words (nouns) and action words (verbs) correctly; correctly use describing words (adjectives) and substitute pronouns for nouns; correctly use verbs that agree with the subject, and comparative and superlative forms of adverbs and adjectives; correctly use verbs that agree with compound subject, and conjunctions; use correct verb tense and subject/verb agreement; use correct agreement of pronoun and antecedent; and consistent verb tense; use correct pronoun case	Standard Usage	
Spell words with simple patterns and high frequency words correctly; correctly spell simple compounds, homophones, contractions and words with affixes; use standard spelling	Spelling Patterns and High Frequency Words	
Write effectively in various forms and types of writing Forms/Types/Modes of Writing: Compose a variety of texts	Forms/Types/Modes of Writing	Forms/Types/ Writing Modes
Use narrative, descriptive, expository, and/or persuasive features; compose narrative, descriptive, expository, and/or persuasive texts, using appropriate text features	Types and Modes of Writing	
Recognize different forms of written communication (e.g., thank-you notes, friendly letters, lists, poems, invitations); compose thank-you notes, friendly letters, lists, invitations; text emphasizing the format of diary/journal entries and friendly letters; selecting and using an appropriate format; email communications; resume, letter of application, follow-up letter)	Forms of Written Communication	