MONTANA K-12 MATHEMATICS CONTENT STANDARDS

NOT YET ADOPTED. Scheduled Implementation 2026.

MONTANA OFFICE OF PUBLIC INSTRUCTION (OPI)

TABLE OF CONTENTS

Accommodation statement for publications

The OPI is committed to providing reasonable accommodations to people with disabilities. If you need a reasonable accommodation, require an alternate format, or have questions concerning accessibility, please contact the OPI ADA Coordinator at 406-444-3161, opiada@mt.gov,
TTY 406-444-0235.

MONTANA K-12 MATHEMATICAL PRACTICE STANDARDS

(1) Problem Solve and Persevere:

Mathematically proficient students:

- Make conjectures, plan, and follow solution strategies
- Evaluate their progress and accuracy
- Engage in sense-making and self-monitoring and
- Persevere in seeking solutions, and value alternative approaches

(2) Abstract and Generalize:

Mathematically proficient students are able to decontextualize and symbolically represent both mathematical and non-mathematical situations to search for and analyze regularities, patterns, and structures.

(3) Justify and Prove:

Mathematically proficient students create, evaluate, justify, and refute mathematical claims in developmentally and mathematically appropriate ways.

(4) Model with Mathematics:

Mathematically proficient students:

- Make sense of a scenario
- Identify a problem to be solved, and mathematize it, and
- Apply a mathematical model to reach a solution and verify its viability.

(5) Represent:

Mathematically proficient students:

- Recognize, use, create, interpret, and translate representations using appropriate methods and tools and
- Understand multiple ways of representing mathematical ideas and how they are related.

(6) Collaborate Mathematically:

Mathematically proficient students engage in mathematics as a social enterprise through discussion and collaborative inquiry where ideas are offered, debated, connected, and built upon toward solutions, shared understanding, and appreciation of other perspectives.

(7) Culturally Connect:

Mathematically proficient students:

- Recognize cultural connections and contributions to mathematics and
- Appreciate the role of mathematics in various cultural contexts, including those of tribally specific Montana Indigenous Peoples.

KINDERGARTEN MATHEMATICS CONTENT STANDARDS

Counting and Cardinality (CC)

- Flexibly count to 100 by ones and by tens. (MT.K.CC.1)
- Count beginning from a given number within the known sequence. (MT.K.CC.2)
- Write numbers from 0-20 and represent a number of objects with a written numeral 0-20. (MT.K.CC.3)
- Understand the relationship between numbers and quantities and connect counting to cardinality by recognizing that each successive number name refers to a quantity that is one larger within a normal counting sequence. (MT.K.CC.4)
- Count to answer "how many?" in a variety of arrangements and, given a number, produce a set within 20. (MT.K.CC.5)
- Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group. (MT.K.CC.6)
- Compare two numbers between 1 and 10 presented as written numerals. (MT.K.CC.7)

Operations and Algebraic Thinking (OA)

- Represent addition and subtraction in multiple ways. (MT.K.OA.1)
- Solve addition and subtraction problems in context within 10. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.K.OA.2)
- Decompose numbers less than or equal to 10 into pairs in multiple ways. (MT.K.OA.3)
- For any number from 1 to 9, find the number that makes 10 when added to the given number. (MT.K.OA.4)
- Flexibly and accurately add and subtract within 5. (MT.K.OA.5)
- Recognize the characteristics of the commutative property in addition. (MT.K.OA.6)

Number and Operations in Base Ten (NBT)

- Compose and decompose numbers from 11-19 into ten ones and further ones in multiple ways and record each composition or decomposition by a drawing or an equation. (MT.K.NBT.1)

Measurement and Data (MD)

- Describe several attributes of a single object. (MT.K.MD.1)
- Directly compare two objects with a measurable attribute in common using comparative language. (MT.K.MD.2)
- Classify, count, and sort objects into categories. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.K.MD.3)
- Describe attributes and identify the names of coins. (MT.K.MD.4)
- Explain time in days, months, years, and seasons. (MT.K.MD.5)

Geometry (G)

- Describe the relative positions of objects in their environment. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.K.G.1)
- Correctly name shapes regardless of their orientations or overall size. (MT.K.G.2)
- Identify shapes are two-dimensional or three-dimensional. (MT.K.G.3)
- Analyze and compare two- and three-dimensional shapes using informal language and other attributes. (MT.K.G.4)
- Model shapes in the environment. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.K.G.5)
- Compose simple shapes to form larger shapes. (MT.K.G.6)

GRADE 1 MATHEMATICS CONTENT STANDARDS

Operations and Algebraic Thinking (OA)

- Use addition and subtraction within 20 to solve of all types. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.1.OA.1)
- Solve problems in context that call for addition of three whole numbers with a sum less than or equal to 20 in context of all types. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.1.OA.2)
- Flexibly compose and decompose numbers to add and subtract. (MT.1.OA.3)
- Understand subtraction as an unknown-addend problem. (MT.1.OA.4)
- Relate counting to addition and subtraction. (MT.1.OA.5)
- Flexibly, accurately, and efficiently add and subtract within 10. (MT.1.OA.6)
- Use multiple strategies to add and subtract within 20. (MT.1.OA.7)
- Understand the meaning of the equal sign and determine if equations are true or false. (MT.1.OA.8)
- Determine the unknown number in an addition or subtraction equation relating to three numbers. (MT.1.OA.9)

Number and Operations Base Ten (NBT)

- Flexibly count, read, write, and represent numbers to 120. (MT.1.NBT.1)
- Understand that ten is a unit composed of ten ones and that a two-digit number represents tens and ones. (MT.1.NBT.2)
- Compare two two-digit numbers using comparison symbols $>, =, and\ <$. (MT.1.NBT.3)
- Build a foundation for addition within 100 by:
    - Adding two-digit to one-digit numbers, and
    - Adding multiples of 10 to two-digit numbers. (MT.1.NBT.4)
- Using place value, given a two-digit number, find 10 more or 10 less than the number. (MT.1.NBT.5)

- Subtract multiples of 10 from a two-digit number. (MT.1.NBT.6)

Measurement and Data (MD)

- Order three objects by length and compare the lengths of two objects indirectly by using a third object. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.1.MD.1)
- Express the length of an object as a whole number of length units. Understand that the measurement of an object is the number of same-size length units that span it with no gaps or overlaps. (MT.1.MD.2)
- Tell and write time in hours and half-hours using analog and digital clocks. (MT.1.MD.3)
- Identify the value of coins. (MT.1.MD.4)
- Organize, represent, and interpret data with up to three categories by:
    - Asking and answering questions about the total number of data points,
    - Identifying how many are in each category, and
    - Analyzing differences between categories. (MT.1.MD.5)

Geometry (G)

- Distinguish between defining attributes versus nondefining attributes. (MT.1. G.1)
- Build and draw shapes to possess defining attributes. (MT.1.G.2)
- Compose new shapes using two- and three-dimensional shapes. (MT.1.G.3)
- Partition circles and rectangles into two and four equal shares. Describe the shares using the words: halves, fourths, and quarters. (MT.1.G.4)

GRADE 2 MATHEMATICS CONTENT STANDARDS

Operations and Algebraic Thinking (OA)

- Use addition and subtraction within 100 to solve one- and two-step problems in context involving all problem types. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.2.OA.1)
- Flexibly, accurately, and efficiently add and subtract within 20 using mental strategies. (MT.2.OA.2)
- Determine whether a group of objects, up to 20, has an odd or even number of members. (MT.2.OA.3)
- Use addition to find the total number of objects arranged in rectangular arrays. (MT.2.OA.4)

Number and Operations in Base Ten (NBT)

- Understand one hundred is a unit composed of ten tens and that three-digit numbers represent amounts of hundreds, tens, and ones. (MT.2.NBT.1)
- Skip-count by 5s, 10s, and 100s. (MT.2.NBT.2)
- Flexibly count, read, write, and represent numbers to 1000. (MT.2.NBT.3)
- Compare two three-digit numbers using $>, =, and\ <$ symbols. (MT.2.NBT.4)
- Flexibly, accurately, and efficiently add and subtract within 100 using multiple strategies. (MT.2.NBT.5)
- Add up to four two-digit numbers using multiple strategies. (MT.2.NBT.6)
- Add and subtract within 1000 using multiple strategies. (MT.2.NBT.7)
- Using place value, add or subtract 10 or 100 from a given number. (MT.2.NBT.8)
- Understand and make connections between different strategies for addition and subtraction. (MT.2.NBT.9)

Measurement and Data (MD)

- Measure the length of an object by selecting and using appropriate tools. (MT.2.MD.1)
- Understand the relationship between unit sizes and number of units by measuring a single object using two different units of common measurement. (MT.2.MD.2)
- Estimate lengths using units of common measurement. (MT.2.MD.3)
- Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard-length unit. (MT.2.MD.4)
- Use addition and subtraction within 100 to solve problems in context involving lengths that are given in the same units. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.2.MD.5)
- Represent whole numbers as lengths from 0 and represent sums and differences within 100 on a number line. (MT.2.MD.6)
- Tell and write time from analog and digital clocks to the nearest five minutes using a.m. and p.m. (MT.2.MD.7)
- Solve problems in context involving dollar bills, quarters, dimes, nickels, and pennies using $ and ¢ symbols appropriately. (MT.2.MD.8)
- Generate measurement data and present the data in multiple ways. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.2.MD.9)
- Organize, represent, and interpret data with up to four categories. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.2.MD.10)
- Solve addition and subtraction problems of all types using data presented. (MT.2.MD.11)

Geometry (G)

- Recognize and draw shapes having specified attributes. (MT.2.G.1)
- Partition a rectangle into rows and columns of same-size squares and find the total number. (MT.2.G.2)
- Partition circles and rectangles into equal shares, recognize that equal shares need not have the same shape, and express the shares in two-halves, three-thirds, and four-fourths. (MT.2.G.3)

GRADE 3 MATHEMATICS CONTENT STANDARDS

Operations and Algebraic Thinking (OA)

- Understand products of whole numbers as the total number found by multiplying a number of groups by the number of objects per group. (MT.3.OA.1)
- Understand whole-number quotients of whole numbers:
    - As the number of objects in each group with the total quantity divided equally into a number of shares, and
    - As the number of shares when a total number of objects is partitioned into equal-sized groups. (MT.3.OA.2)
- Use multiplication and division within 100 to solve problems in context in situations involving equal groups, arrays, and measurement quantities. (MT.3.OA.3)
- Determine the unknown whole number in a multiplication or division equation relating three whole numbers. (MT.3.OA.4)
- Apply the commutative property of multiplication, associative property of multiplication, and distributive property of multiplication over addition on whole numbers as strategies to multiply. (MT.3.OA.5)
- Use division as an unknown factor problem. (MT.3.OA.6)
- Flexibly, accurately, and efficiently multiply and divide within 100, using strategies such as the relationship between multiplication and division. (MT.3.OA.7)
- Solve two-step problems in context using the four operations, represent these problems using equations with a letter standing for the unknown quantity and assess the reasonableness of answers using mental computation and estimation strategies. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.3.OA.8)
- Identify arithmetic patterns and explain them using properties of operations. (MT.3.OA.9)

Number and Operations in Base Ten (NBT)

- Use place value understanding to round whole numbers to the nearest 10 or 100. (MT.3.NBT.1)

- Flexibly, accurately, and efficiently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. (MT.3.NBT.2)
- Multiply one-digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value and properties of operations. (MT.3.NBT.3)

Number and Operations – Fractions (NF)

- Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into b equal parts and understand a fraction $\frac{a}{b}$ as the quantity formed by a parts of size $\frac{1}{b}$. (MT.3.NF.1)
- Understand a fraction as a number on the number line by:
  - Representing a unit fraction on a number line,
  - Representing a fraction as multiple copies of a unit fraction on a number line, and
  - Representing fractions on a number line. (MT.3.NF.2)
- Understand the equivalence of fractions in special cases and compare fractions by reasoning about their size by:
  - Understanding two fractions as equivalent if they are the same size or the same point on a number line,
  - Recognizing and generating simple equivalent fractions and by demonstrating or justifying why the fractions are equivalent,
  - Writing whole numbers as fractions, recognizing fractions that are equivalent to whole numbers, and locating them on a number line,
  - Comparing two fractions with the same numerator or the same denominator by reasoning about their size and recognizing that comparisons are valid only when the two fractions refer to the same whole, and
  - Recording the results of fraction comparisons with the symbols $>, =, or\ <$ and justifying the conclusions. (MT.3.NF.3)

Measurement and Data (MD)

- Tell and write time on an analog and digital clock to the nearest minute and measure time intervals in minutes and solve word problems in context involving addition and subtraction of time intervals in minutes. (MT.3.MD.1)
- Measure and estimate liquid volumes and masses of objects using customary and metric units by adding, subtracting, multiplying, and dividing to solve one-step problems in context that involve masses or volumes that are given in the same units. (MT.3.MD.2)
- Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.3.MD.3)
- Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch and show the data by making a line plot where the horizontal scale is marked off in appropriate units. (MT.3.MD.4)
- Recognize area as an attribute of plane figures and understand concepts of area measurement by:
    - Understanding that a square with side length 1 unit, called "a unit square," is said to have "one square unit" of area and can be used to measure area, and
    - Understanding that a plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units. (MT.3.MD.5)
- Measure areas by counting unit squares. (MT.3.MD.6)
- Relate area to the operations of multiplication and addition by:
    - Finding the area of a rectangle with whole-number side lengths by tiling it, and showing that the area is the same as would be found by multiplying the side lengths,
    - Multiplying side lengths to find areas of rectangles with whole-number side lengths while solving problems in context and representing whole-number products as rectangular areas,
    - Using tiling and area models to represent the distributive property in finding area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$, and
    - Recognizing area as additive, finding areas of straight-line figures by decomposing them into nonoverlapping rectangles and adding the areas of the nonoverlapping parts. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.3.MD.7)

- Solve problems in context involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. (MT.3.MD.8)

Geometry (G)

- Understand that shapes in different categories may share attributes and that the shared attributes can define a larger category. Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. (MT.3.G.1)
- Partition shapes into parts with equal areas; express the area of each part as a unit fraction of the whole. (MT.3.G.2)

GRADE 4 MATHEMATICS CONTENT STANDARDS

Operations and Algebraic Thinking (OA)

- Interpret a multiplication equation as a multiplicative comparison and represent verbal statements of multiplicative comparisons as multiplication equations. (MT.4.OA.1)
- Multiply or divide to solve problems in context that involve multiplicative comparison and distinguish multiplicative comparison from additive comparison. (MT.4.OA.2)
- Solve multistep problems in context with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted, represent these problems using equations with a letter standing for the unknown quantity, and assess the reasonableness of answers using mental computation and estimation strategies. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.4.OA.3)
- Find all factor pairs for a whole number in the range 1-100, recognize that a whole number is a multiple of each of its factors, determine whether a given whole number in the range 1-1000 is a multiple of a given one-digit number, and determine whether a given whole number in the range 1-100 is prime or composite. (MT.4.OA.4)
- Analyze a number or shape pattern that follows a given rule, identify and explain informally features of the pattern that were not explicit in the rule itself, generate terms in the resulting sequence, and observe the pattern. (MT.4.OA.5)

Number and Operations Base Ten (NBT)

- Recognize that in a multi-digit whole number, each place represents ten times the place to its right. (MT.4.NBT.1)
- Read and write multi-digit whole numbers using standard form, word form, and expanded form and compare two multi-digit numbers based on the value of the digits in each place using $>, =, and\ <$ symbols. (MT.4.NBT.2)
- Use place value understanding to round multi-digit whole numbers to any place. (MT.4.NBT.3)
- Accurately and efficiently add and subtract multi-digit whole numbers using the standard algorithm. (MT.4.NBT.4)

- Multiply a whole number of up to four digits by a one-digit whole number, multiply two two-digit numbers, flexibly using strategies based on place value and the properties of operations, and illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (MT.4.NBT.5)
- Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, flexibly using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division, and illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (MT.4.NBT.6)

Number and Operations – Fractions (NF)

- Explain why a fraction $\frac{a}{b}$ is equivalent to a fraction $\frac{(n \times a)}{(n \times b)}$ by using visual fraction models and use this principle to recognize and generate equivalent fractions. (MT.4.NF.1)
- Compare two fractions with different numerators and different denominators by creating common denominators or numerators, or by comparing to a benchmark fraction, recognize that comparisons are valid only when the two fractions refer to the same whole, record the results of comparisons with symbols $>, =, or\ <$, and justify the conclusions. (MT.4.NF.2)
- Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$ by:
    - Understanding addition and subtraction of fractions as joining and separating parts referring to the same whole,
    - Decomposing a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation,
    - Adding and Subtracting mixed numbers with like denominators by replacing each mixed number with an equivalent improper fraction or other efficient strategies, and
    - Solving problems in context that involve addition and subtraction of fractions referring to the same whole or having like denominators. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.4.NF.3)
- Apply and extend previous understandings of multiplication to multiply a fraction by a whole number by:

  - Understanding a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$ and recording the conclusion by the equation $\frac{a}{b} = a \times \frac{1}{b}$,
  - Understanding a multiple of $\frac{a}{b}$ as a multiple of $\frac{1}{b}$, using this to multiply a fraction by a whole number and recognizing $n \times \frac{a}{b} = \frac{(n \times a)}{b}$, and
  - Solving problems in context involving multiplication of a fraction by a whole number. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.4.NF.4)
- Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. (MT.4.NF.5)
- Use decimal notation for fractions with denominators 10 or 100. (MT.4.NF.6)
- Compare two decimals to hundredths by reasoning about their size, recognize that comparisons are valid only when the two decimals refer to the same whole, record the results of comparisons with the symbols $>, =, or\ <$, and justify the conclusions. (MT.4.NF.7)

Measurement and Data (MD)

- Know relative sizes of units within one system of measurement and within the system, express measurements of a larger unit in terms of a smaller unit. (MT.4.MD.1)
- Use the four operations to solve problems in context using distances, intervals of time, liquid volumes, masses of objects, and money, including problems with simple fractions or decimals and problems that require expressing measurements given in a larger unit in terms of a smaller unit, and represent measurement quantities using diagrams that feature a measurement scale. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.4.MD.2)
- Apply the area and perimeter formulas for rectangles including problems in context. (MT.4.MD.3)
- Make a line plot to display a data set of measurements in fractions of a unit and solve problems involving addition and subtraction of fractions by using information presented in line plots. (MT.4.MD.4)
- Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint and understand concepts of angle measurement by:

    - Understanding that an angle is formed by two rays with a common endpoint at the center of a circle that measures a total of 360 degrees, and a single-degree unit measure is equal to 1/360th of the circle, and
    - Understanding that an angle that turns through n one-degree angles is said to have an angle measure of n degrees. (MT.4.MD.5)
- Measure angles in whole-number degrees using a protractor and sketch angles of specified measure. (MT.4.MD.6)
- Recognize angle measure as additive. When an angle is decomposed into nonoverlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram including problems in context. (MT.4.MD.7)

Geometry (G)

- Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines and identify these in two-dimensional figures. (MT.4.G.1)
- Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size, recognize right triangles as a category, and identify right triangles. (MT.4.G.2)
- Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts, identify line-symmetric figures, and draw lines of symmetry. This standard should incorporate designs and cultural context relating to Montana Indigenous Peoples and local communities. (MT.4.G.3)

GRADE 5 MATHEMATICS CONTENT STANDARDS

Operations and Algebraic Thinking (OA)

- Use parentheses, brackets, or braces in numerical expressions and evaluate expressions with these symbols using the order of operations. (MT.5.OA.1)
- Write simple expressions that record calculations with numbers and interpret numerical expressions without evaluating them. (MT.5.OA.2)
- Generate two numerical patterns using given rules and complete an input-output table for the data, identify apparent relationships between corresponding terms, form ordered pairs from the values in the input-output table, and graph them on a coordinate plane. (MT.5.OA.3)

Number and Operations in Base Ten (NBT)

- Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left. (MT.5.NBT.1)
- Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10, and use whole-number exponents to denote powers of 10. (MT.5.NBT.2)
- Read, write, and compare decimals to thousandths by:
    - Reading and writing decimals to thousandths using standard form, word form, and expanded form, and
    - Comparing two decimals to thousandths based on the meanings of the digits in each place using $>, =, and\ <$ symbols. (MT.5.NBT.3)
- Use place value understandings to round decimals to any place. (MT.5.NBT.4)
- Accurately and efficiently multiply multi-digit whole numbers using the standard algorithm. (MT.5.NBT.5)

- Flexibly, accurately, and efficiently find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division and illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (MT.5.NBT.6)
- Add, subtract, multiply, and divide decimals to hundredths using concrete models or drawings. This standard should incorporate designs and cultural context relating to Montana Indigenous Peoples and local communities. (MT.5.NBT.7)

Number and Operations – Fractions (NF)

- Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions. (MT.5.NF.1)
- Solve problems in context that involve addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, and use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. (MT.5.NF.2)
- Interpret a fraction as division of the numerator by the denominator ($\frac{a}{b} = a \div b$) and solve problems in context that involve division of whole numbers leading to answers in the form of fractions or mixed numbers. (MT.5.NF.3)
- Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction by:
    - Expressing the product $\frac{a}{b} \times q$ as "a" parts of a partition of q into b equal parts, equivalently, as the result of a sequence of operations $a \times q \div b$, and
    - Finding the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, showing that the area is the same as would be found by multiplying the side lengths, multiplying fractional side lengths to find areas of rectangles, and represent representing fraction products as rectangular areas. (MT.5.NF.4)
- Interpret multiplication as scaling (resizing), by:
    - Comparing the size of a product to the size of one factor on the basis of the size of the other factor without performing the indicated multiplication, and

    - Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number, and relating the principle of fraction equivalence $\frac{q}{b} = \frac{n \times a}{n \times b}$ to the effect of multiplying $\frac{a}{b}$ by 1. (MT.5.NF.5)
- Solve problems in context that involve multiplication of fractions and mixed numbers. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.5.NF.6)
- Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions by:
    - Expressing division of a unit fraction by a nonzero whole number and computing such quotients,
    - Expressing division of a whole number by a unit fraction and computing such quotients, and
    - Solving problems in context involving division of unit fractions by nonzero whole numbers and division of whole numbers by unit fractions. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.5.NF.7)

Measurement and Data (MD)

- Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step problems in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.5.MD.1)
- Make a line plot to display a data set of measurements in fractions of a unit and use operations on fractions to solve problems involving information presented in line plots. (MT.5.MD.2)
- Recognize volume as an attribute of solid figures and understand concepts of volume measurement by:
    - Understanding that a cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume and can be used to measure volume, and
    - Understanding that a solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units. (MT.5.MD.3)
- Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and non-standard units. (MT.5.MD.4)

- Relate volume to the operations of multiplication and addition and volume problems including problems in context by:
  - Finding the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes and showing that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base and representing the product of three whole numbers using the associative property of multiplication.
  - Applying the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths including problems in context, and
  - Recognizing volume as additive and finding volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the nonoverlapping parts, applying this technique to solve problems in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.5.MD.5)

Geometry (G)

- Use a pair of perpendicular number lines, called axes, to define a coordinate system with the intersection of the lines at the origin arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the x-coordinate, the first number, indicates how far to travel from the origin in the direction of the x-axis and the y-coordinate, the second number, indicates how far to travel in the direction of the y-axis. (MT.5.G.1)
- Represent problems including problems in context by graphing points in the first quadrant of the coordinate plane and interpret coordinate values of points in the context of the situation. This standard should incorporate designs and cultural context relating to Montana Indigenous Peoples and local communities. (MT.5.G.2)
- Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. (MT.5.G.3)
- Classify two-dimensional figures in a hierarchy based on properties. (MT.5.G.4)

GRADE 6 MATHEMATICS CONTENT STANDARDS

Ratios and Proportional Relationships (RP)

- Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. (MT.6.RP.1)
- Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. (MT.6.RP.2)
- Use ratio and rate reasoning to solve proportional problems in context about unit rates, percentages (as a rate per 100), and/or measurement units using tables or equations. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.6.RP.3)

The Number System (NS)

- Represent, interpret, and compute quotients of fractions and solve problems in context involving division of fractions by fractions. (MT.6.NS.1)
- Accurately and efficiently divide multi-digit numbers using the standard algorithm. (MT.6.NS.2)
- Accurately and efficiently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. (MT.6.NS.3)
- Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. (MT.6.NS.4)
- Understand that positive and negative numbers are used together to describe quantities having opposite directions or values and use positive and negative numbers to represent quantities in problems in contexts, explaining the meaning of 0 in each situation. (MT.6.NS.5)
- Understand a rational number as a point on the number line and extend number line diagrams and coordinate axes by:

  - Recognizing opposite signs of numbers as indicating locations on opposite sides of 0 on the number line, recognizing that the opposite of the opposite of a number is the number itself, and that 0 is its own opposite.
  - Understanding signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane and recognizing that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes, and
  - Finding and positioning integers and other rational numbers on a horizontal or vertical number line diagram and finding and positioning pairs of integers and other rational numbers on a coordinate plane. (MT.6.NS.6)
- Understand ordering and absolute value of rational numbers by:
  - Interpreting statements of inequality as statements about the relative position of two numbers on a number line diagram,
  - Writing, interpreting, and explaining statements of order for rational numbers in problems in context,
  - Understanding the absolute value of a rational number as its distance from 0 on the number line and interpreting absolute value as magnitude for a positive or negative quantity in problems in context, and
  - Distinguishing comparisons of absolute value from statements about order. (MT.6.NS.7)
- Graph points in all four quadrants of the coordinate plane and include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.6.NS.8)

Expressions and Equations (EE)

- Write and evaluate numerical expressions involving whole-number bases and exponents. (MT.6.EE.1)
- Write, read, and evaluate expressions with variables by:
  - Writing expressions that record operations with numbers and with variables,
  - Identifying parts of an expression using mathematical terms (sum, product, difference, quotient, term, factor, coefficient, variable) and writing expressions that represent verbal descriptions of problems in context, and
  - Evaluating expressions at specific values of their variables including expressions that arise from formulas performing arithmetic operations, including those involving whole-number exponents and using the order of operations. (MT.6.EE.2)

- Apply the properties of operations including the distributive property, to generate equivalent expressions and determine when two expressions are equivalent. (MT.6.EE.3)
- Understand how to solve an equation or inequality as a process by using substitution to determine whether a given number in a specified set makes an equation or inequality true. (MT.6.EE.4)
- Write expressions when solving problems in context and understand that a variable can represent an unknown number, or any number in a specified set. (MT.6.EE.5)
- Solve problems including problems in context by writing and solving equations of the form $x + p = q$ and $p \cdot x = q$ for cases in which $p, q,$ and x are all nonnegative rational numbers. (MT.6.EE.6)
- Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in problems including problems in context; graph and describe solutions of such inequalities on number line diagrams. (MT.6.EE.7)
- Use variables to represent two quantities that change in relationship to one another analyze the relationship between the dependent and independent variables using graphs and tables, and write an equation to express one quantity in terms of the other. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.6.EE.8)

Geometry (G)

- Find the area of triangles, quadrilaterals, and other polygons by composing them into rectangles or decomposing them into triangles and other shapes. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.6.G.1)
- Find the volume of a right rectangular prism with fractional edge lengths by filling it with unit cubes of the appropriate unit fraction edge lengths and connect and apply the formulas $V = l \cdot w \cdot h$ and $V = B \cdot h$ to find volumes of right rectangular prisms with fractional edge lengths to solve problems in context. (MT.6.G.2)
- Draw polygons in the coordinate plane given coordinates for the vertices, find the length of a horizontal or vertical side, and apply these techniques to problems in context. (MT.6.G.3)
- Represent three-dimensional figures using nets made up of rectangles and triangles and use the nets to find the surface area of these figures in problems including problems in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.6.G.4)

Statistics and Probability (SP)

- Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. (MT.6.SP.1)
- Understand that a set of data collected to answer a statistical question has a distribution that can be described by its center, spread, and overall shape. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.6.SP.2)
- Recognize that measures of central tendency for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number. (MT.6.SP.3)
- Display numerical data in plots on a number line, including dot plots, histograms, and box plots, and describe any overall pattern and any striking deviations from the overall pattern with reference to the context which the data were gathered. (MT.6.SP.4)
- Characterize numerical data sets from a sample in relation to their context, such as by:
    - Reporting the number of observations,
    - Describing the nature of the attribute under investigation, including how it was measured and its units of measurement, and
    - Finding quantitative measures of central tendency (mode, median, and/or mean) and variability (interquartile range and/or mean absolute deviation), for numerical data sets and relating the choice of measures of central tendency and variability to the shape of the data distribution and the context in which the data were gathered. (MT.6.SP.5)

GRADE 7 MATHEMATICS CONTENT STANDARDS

Ratios and Proportional Relationships (RP)

- Compute unit rates associated with ratios of fractions, measured in like or different units. (MT.7.RP.1)
- Recognize and represent proportional relationships between quantities, using tables, graphs, and equations by:
    - Deciding whether a table represents quantities in a proportional relationship, by testing for equivalent ratios and deciding whether a graph represents quantities in a proportional relationship if the graph is a straight line through the origin, and
    - Identifying the constant of proportionality (unit rate) in tables, graphs, and equations, of proportional relationships. (MT.7.RP.2)
- Use proportional relationships to solve multi-step ratio and percent problems, including problems in context that involve simple interest, tax, markups and markdowns, gratuities and commissions, fees, and percent increase and decrease, percent error. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.7.RP.3)

The Number System (NS)

- Add and subtract rational numbers, represent addition and subtraction on a horizontal or vertical number line diagram, and understand subtraction as adding the additive inverse $p - q = p + (-q)$. (MT.7.NS.1)
- Multiply and divide rational numbers and use operations of rational numbers to solve problems in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.7.NS.2)
- Write any rational number as a fraction, decimal, and percent using long division, and know that the decimal form of a rational number terminates or repeats. (MT.7.NS.3)

Expressions and Equations (EE)

- Use properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients and generate equivalent expressions. (MT.7.EE.1)
- Understand that rewriting an expression in different forms in a problem in context can show how the quantities in it are related. (MT.7.EE.2)
- Write and solve one- and two-step equations including problems in context with rational numbers, convert between forms as appropriate, and assess the reasonableness of answers. (MT.7.EE.3)
- Use variables to represent quantities and construct simple equations and inequalities to solve problems in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities by:
    - Solving, accurately and efficiently, problems in context leading to equations of the form $p \cdot x + q = r$ and $p(x + q) = r$, where $p, q,$ and r are specific rational numbers, comparing an algebraic solution to an arithmetic solution, and identifying the sequence of the operations used in each approach, and
    - Solving problems in context leading to inequalities of the form $p \cdot x + q > r$ or $p \cdot x + q < r$, where $p, q,$ and r are specific rational numbers graphing the solution set of the inequality, and interpreting the solution in context. (MT.7.EE.4)

Geometry (G)

- Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. (MT.7.G.1)
- Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions, focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. (MT.7.G.2)
- Know and use the formulas for the area and circumference of a circle and give an informal derivation of the relationship between the circumference and area of a circle. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.7.G.3)

- Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. (MT.7.G.4)
- Solve geometrical problems including problems in context that involve area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.7.G.5)

Statistics and Probability (SP)

- Understand statistics can be used to gain information about a population by examining a representative sample of the population. (MT.7.SP.1)
- Use data from a random sample to draw inferences about a population with an unknown characteristic of interest and generate or simulate multiple samples of the same size to gauge the variation in estimates or predictions. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.7.SP.2)
- Visually analyze two data distributions to compare measures of central tendency and variability. (MT.7.SP.3)
- Use measures of central tendency and measures of variability for numerical data from random samples to draw comparative inferences about two populations. (MT.7.SP.4)
- Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. (MT.7.SP.5)
- Find the experimental probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.7.SP.6)
- Develop a theoretical probability model and use it to find probabilities of events, compare theoretical and experimental probabilities, and explain possible sources of discrepancy, if any exist. (MT.7.SP.7)
- Represent sample spaces for compound events, identify the desired outcomes in the sample spaces, and find probabilities of events using organized lists, tables, tree diagrams, and simulations. (MT.7.SP.8)

GRADE 8 MATHEMATICS CONTENT STANDARDS

The Number System (NS)

- Know real numbers are made up of rational and irrational numbers, understand informally that every number has a decimal expansion, and convert a decimal expansion which repeats eventually into a rational number. (MT.8.NS.1)
- Use rational approximations of irrational numbers to compare the value of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions. (MT.8.NS.2)

Expressions and Equations (EE)

- Know and apply the properties of integer exponents to generate equivalent numerical expressions. (MT.8.EE.1)
- Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number and evaluate square roots of small perfect squares and cube roots of small perfect cubes. (MT.8.EE.2)
- Represent very large or very small quantities using scientific notation, limited to a single digit times an integer power of ten. (MT.8.EE.3)
- Perform operations with numbers expressed in scientific notation. (MT.8.EE.4)
- Graph proportional relationships, interpret the unit rate as the slope of the graph, and compare two different proportional relationships as tables, graphs, and equations. (MT.8.EE.5)
- Use similar triangles to explain why the slope m is the same between any two distinct points on a nonvertical line in the coordinate plane and derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b. (MT.8.EE.6)
- Solve linear equations in one variable by:
    - Giving examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions and showing which of these possibilities is the case by successively transforming the given equation into simpler

forms, until an equivalent equation of the form $x = a, a = a, or\ a = b$ results (where a and b are different numbers), and
    - Solving linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. (MT.8.EE.7)
- Analyze and solve pairs of simultaneous linear equations by:
    - Understanding that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously,
    - Solving systems of two linear equations in two variables algebraically, estimating solutions by graphing the equations, and solving simple cases by inspection, and
    - Solving problems in context that lead to two linear equations in two variables. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.8.EE.8)

Functions (F)

- Understand that a function is a rule that assigns to each input exactly one output and the graph of a function is the set of ordered pairs (x, y) each consisting of an input, x, and the corresponding output, y. (MT.8.F.1)
- Compare properties of two functions using tables, graphs, and equations. (MT.8.F.2)
- Interpret the equation $y = mx + b$ as defining a linear function whose graph is a straight line with slope m passing through the point $(0, b)$. (MT.8.F.3)
- Given linear data relating two quantities, construct a linear function that models the data and interpret the rate of change and initial value of a linear function in terms of the situation it models. (MT.8.F.4)
- Given the graph of a function, describe qualitatively the functional relationship between quantities, and given a verbal description of a functional relationship, sketch a graph that exhibits the qualitative features of a function. (MT.8.F.5)

Geometry (G)

- Verify experimentally the properties of rotations, reflections, and translations and understand that these are rigid transformations, lines are taken to lines, line segments to line segments of the same length, angles are taken to angles of the same measure, and parallel lines are taken to parallel lines. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.8.G.1)
- Understand that a two-dimensional figure is congruent to another if the second can be obtained by a sequence of rigid transformations, and, given two congruent figures, describe a sequence that exhibits the congruence between them. (MT.8.G.2)
- Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.8.G.3)
- Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations, and, given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. (MT.8.G.4)
- Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. (MT.8.G.5)
- Explain a proof of the Pythagorean Theorem and its converse. (MT.8.G.6)
- Apply the Pythagorean Theorem to determine unknown side lengths in right triangle problems, including problems in context in two and three dimensions. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.8.G.7)
- Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. (MT.8.G.8)
- Know, use, and apply the formulas for the volumes of cones, cylinders, and spheres to solve problems, including problems in context. (MT.8.G.9)

Statistics and Probability (SP)

- Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities and describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. (MT.8.SP.1)
- Know that straight lines are widely used to model relationships between two quantitative variables and for scatter plots that suggest a linear association, informally fit a straight line and informally assess the model fit by judging the closeness of the data points to the line. (MT.8.SP.2)
- Use the equation of a linear model to solve problems in the context of bivariate measurement data, and interpret the slope and intercept. (MT.8.SP.3)
- Construct and interpret frequencies and relative frequencies for bivariate categorical data in a two-way table to investigate patterns of association. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.8.SP.4)

HIGH SCHOOL MATHEMATICS CONTENT STANDARDS

The Montana High School Math Standards are broken into two groups, Core and Core Plus. Together these standards cover all essential concepts for high school. These terms are defined in the following manner:

Core Standards: foundational standards that all Montana students should know, understand, and be able to do upon graduation of high school, and

Core Plus: additional standards that all Montana students can pursue to prepare for postsecondary education and careers.

Core Numeric Reasoning Standards (NUM)

The Real Number System (REAL)

- Use reasoning to establish properties of integer exponents, including scientific notation. (MT.CORE.NUM.REAL.1)
- Represent and perform operations within very large and very small numbers using scientific notation. (MT.CORE.NUM.REAL.2)
- Define, manipulate, interpret, and compare real numbers presented through different representations, including both rational and irrational numbers, and apply comparisons in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.CORE.NUM.REAL.3)

Core Algebraic and Functional Reasoning Standards (ALG)

Understand Functions and Expressions (FUN)

- Interpret parts of an expression, such as terms, factors, and coefficients. (MT.CORE.ALG.FUN.1)
- Understand the definition of a function and distinguish between functions and relations. (MT.CORE.ALG.FUN.2)
- Represent functions using tables, graphs with appropriate scales and labels, equations, and verbal situations, while using technology strategically by:
    - Understanding that different representations highlight different aspects of functions, choosing the representation that is appropriate for the context, and
    - Comparing properties of two functions, including when each is represented in a different way. (MT.CORE.ALG.FUN.3)
- Use function notation, evaluate functions, and interpret statements that use function notation in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.CORE.ALG.FUN.4)
- Identify the domain and range of a function, including considering the constraints imposed by context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.CORE.ALG.FUN.5)
- Understand that a graph of an equation in two variables is the set of all of its solutions plotted in a coordinate plane. (MT.CORE.ALG.FUN.6)
- Understand that expressions can be rewritten in equivalent forms to make different characteristics or features visible. (MT.CORE.ALG.FUN.7)
- Rearrange literal equations to highlight quantities of interest. (MT.CORE.ALG.FUN.8)

Linear Functions and Expressions (LIN)

- Understand that linear functions have a constant rate of change. (MT.CORE.ALG.LIN.1)
- Understand slope as a rate of change and y-intercept as the initial value. (MT.CORE.ALG.LIN.2)
- Represent linear functions using tables, graphs, equations, and verbal situations, while using technology strategically. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities by:
    - Identifying the rate of change and initial value in each representation.
    - Converting between representations, and
    - Writing equations for a line perpendicular or parallel to a given line that passes through a given point. (MT.CORE.ALG.LIN.3)
- Understand that linear equations can be represented in multiple forms and the specific features of each form by:
    - Choosing the form strategically when writing an equation based on given information and intended use,
    - Converting between slope-intercept, point-slope, and standard form symbolically,
    - Understanding the relationship between slope-intercept form, the rate of change, and the initial value,
    - Understanding the relationship between point-slope form, the rate of change, and a given point, and
    - Understanding the relationship between standard form and the x- and y-intercepts. (MT.CORE.ALG.LIN.4)
- Understand that a solution to a system of equations is a coordinate pair that makes both equations true. (MT.CORE.ALG.LIN.5)
- Solve systems of linear equations by graphing, substitution, and elimination, including systems with zero, one, or infinite solutions, while using technology and representations strategically. (MT.CORE.ALG.LIN.6)

Quadratic Functions and Expressions (QUAD)

- Understand that quadratic functions do not have a constant rate of change but have a constant second difference over equal intervals and identify the constant second difference in tables. (MT.CORE.ALG.QUAD.1)
- Represent quadratic functions using tables, graphs, equations, and verbal situations, while using technology strategically. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.CORE.ALG.QUAD.2)
- Understand that quadratic expressions can be represented in multiple forms and the specific features of each form by:
    - Choosing the form strategically when writing an expression based on given information and intended use,
    - Converting between factored, standard, and vertex forms symbolically and using representations,
    - Understanding the relationship between factored form and the zeros of the function, and
    - Understanding the relationship between vertex form and the vertex of the function. (MT.CORE.ALG.QUAD.3)
- Solve quadratic equations by factoring, graphing, completing the square, using inverse operations, and the quadratic formula. Use technology and representations strategically. (MT.CORE.ALG.QUAD.4)

Exponential Functions and Expressions (EXP)

- Understand that exponential functions have a constant common ratio over equal intervals, and identify the common ratio in tables and equations. (MT.CORE.ALG.EXP.1)
- Understand a as the initial value and b as the growth/decay factor for an exponential function written in standard form, $y = a \cdot b^x$. (MT.CORE.ALG.EXP.2)
- Understand the relationship between growth/decay factor and growth/decay rate. (MT.CORE.ALG.EXP.3)
- Represent exponential functions using tables, graphs, equations, and verbal situations; using technology strategically. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.CORE.ALG.EXP.4)
- Solve exponential equations graphically, while using technology strategically. (MT.CORE.ALG.EXP.5)

Modeling with Functions (MOD)

- Model situations in context, with linear, quadratic, and exponential functions. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities by:
    - Determining if a set of data is best modeled by a linear function, quadratic function, exponential function, or none, and explaining why, and
    - Understanding that there are contexts where solutions may not lie on the curve. (MT.CORE.ALG.MOD.1)
- Interpret the coefficients in a linear, quadratic, and exponential model in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.CORE.ALG.MOD.2)
- Choose and interpret measurement units in formulas, graphs, and data displays to understand problems and to guide problem-solving in modeling situations. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.CORE.ALG.MOD.3)
- Choose a level of accuracy appropriate to limitations on measurement when reporting quantities in modeling situations. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.CORE.ALG.MOD.4)

Core Data Reasoning and Probability Standards (DATA)

Quantitative Literacy (LIT)

- Distinguish between quantitative and categorical data and use representations and analysis techniques that are appropriate for each type. (MT.CORE.DATA.LIT.1)
- Ask a statistical question to determine whether there appears to be an association between two variables, design and carry out an investigation, and write a persuasive argument based on the results of the investigation. (MT.CORE.DATA.LIT.2)
- Distinguish between association and causation. (MT.CORE.DATA.LIT.3)

Visualizing, Summarizing, and Interpreting Data (INT)

- Use technology to organize data, including very large data sets, into a useful and manageable structure. (MT.CORE.DATA.INT.1)
- Represent the distribution of univariate quantitative data with plots on the real number line, choosing a format most appropriate to the data set, and representing the distribution of bivariate quantitative data with a scatter plot. (MT.CORE.DATA.INT.2)
- Understand that standard deviation measures the variability of a data distribution, and calculate standard deviation using technology. (MT.CORE.DATA.INT.3)
- Interpret differences in the shape, center, and spread of quantitative data distributions, in context, accounting for possible effects of outliers on measures of central tendency and variability. (MT.CORE.DATA.INT.4)
- Compare and contrast two or more quantitative data distributions, using shape, center, and spread in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.CORE.DATA.INT.5)
- Analyze the relationship between two quantitative data distributions in context that have a linear association. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities by:

  - Using technology strategically, represent two quantitative data distributions on scatter plots,
  - Describing verbally how the variables are related,
  - Using technology to find the least-squares regression line (line of best) fit for two quantitative variables,
  - Understanding that the line of best fit minimizes the square of the residuals, and
  - Understanding correlation as a measure of linear association and using technology, compute the correlation coefficient of a linear relationship. (MT.CORE.DATA.INT.6)
- Analyze the relationship between two categorical variables in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities by:
  - Summarizing categorical data for two categories in two-way frequency tables and visual representations,
  - Interpreting relative frequencies for categorical data in context, and
  - Identifying possible associations and trends in categorical data. (MT.CORE.DATA.INT.7)

Probability (PROB)

- Understand the concept of a sample space and describe events as subsets of a sample space. (MT.CORE.DATA.PROB.1)
- Understand the concepts of conditional probability and independence in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities by:
  - Determining whether two events, A and B, are independent by using two-way tables, tree diagrams, and/or Venn diagrams, and interpreting the answer in context, and
  - Computing the conditional probability of event A given event B by using two-way tables, tree diagrams, and/or Venn diagrams, and interpreting the answer in context. (MT.CORE.DATA.PROB.2)

Core Geometric Reasoning Standards (GEOM)

Transformations (TRANS)

- Represent transformations in the plane using a variety of methods. (MT.CORE.GEOM.TRANS.1)
- Define the congruence of two and show that two figures are congruent by finding a sequence of rigid motions that maps one figure to the other by:
    - Using the definition of congruence in terms of rigid motions to show that two triangles are congruent if, and only if, corresponding pairs of sides and corresponding pairs of angles are congruent, and
    - Verifying that two triangles are congruent if, but not only if, the following groups of corresponding parts are congruent: angle-side-angle (ASA), side-angle-side (SAS), and side-side-side (SSS). (MT.CORE.GEOM.TRANS.2)
- Define the similarity of two figures in terms of similarity transformations by:
    - Verifying that two triangles are similar if, and only if, corresponding pairs of sides are proportional and corresponding pairs of angles are congruent, and
    - Using the properties of similarity transformations to establish the angle-angle (AA) criterion for two triangles to be similar. (MT.CORE.GEOM.TRANS.3)

Geometric Arguments, Reasoning, and Proof (ARG)

- Investigate, conjecture, prove theorems, and communicate the proofs in a variety of ways by:
    - Proving theorems about lines and angles. Theorems include: vertical angles are congruent, when a transversal crosses parallel lines alternate interior angles are congruent and corresponding angles are congruent, and the points on the perpendicular bisector of a line segment are those equidistant from the segment's endpoints,
    - Proving theorems about triangles. Theorems include: the sum of the measures of the interior angles of a triangle is 180˚, the Pythagorean Theorem, the base angles of isosceles triangles are congruent, and a line parallel to one side of a triangle divides the other two sides proportionally,

- Proving theorems about parallelograms and other quadrilaterals. Theorems include: necessary and sufficient conditions for rectangles, parallelograms, rhombi, and kites, and
- Proving theorems about circles. Theorems include: the relationship between central, inscribed, and circumscribed angles, inscribed angles on a diameter are right angles, and the radius of a circle is perpendicular to the tangent where the radius intersects the circle. (CORE.GEOM.ARG.1)

Measurement, Problem-Solving, and Geometric Modeling (MEAS)

- Use the Pythagorean Theorem to calculate distance in the coordinate plane. (CORE.GEOM.MEAS.1)
- Derive the equation of a circle of a given center and radius using the Pythagorean Theorem. (CORE.GEOM.MEAS.2)
- Use similarity to explore and define the sine ratio, cosine ratio, and tangent ratio in terms of right triangles by:
  - Deriving and applying the trigonometric ratios in special right triangles, and
  - Using trigonometric ratios and the Pythagorean Theorem to solve right triangles. (CORE.GEOM.MEAS.3)
- Use geometric shapes, their measures, and their properties to model objects and use those models to solve problems in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities by:
  - Modeling and solving problems with 2D shapes by using the perimeter and area of polygons, circles, and composite shapes with portions removed,
  - Modeling and solving problems with 3D solids by using surface area and volume of solids, including composite solids and solids with portions removed, and
  - Deriving and applying the relationships between the lengths, perimeters, areas, and volumes of similar figures in relation to their scale factor. (CORE.GEOM.MEAS.4)

Core Plus Number and Quantity Standards (NUM)

Numeric Reasoning (REAS)

- Extend the properties of exponents to rational exponents, including converting between exponential and radical forms. (MT.PLUS.NUM.REAS.1)
- Understand there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b as real numbers by:
    - Adding, subtracting, multiplying, and dividing complex numbers, and
    - Finding the conjugate of a complex number. (MT.PLUS.NUM.REAS.2)

Core Plus Algebraic and Functional Reasoning Standards (ALG)

Functions, Expressions, and Inequalities (FUN)

- Identify the effect on the graph of replacing $f(x)$ by $f(x)+k, k \cdot f(x),\ f(k \cdot x), and\ f(x+k)$ for specific values of k (both positive and negative). (MT.PLUS.ALG.FUN.1)
- Understand the relationship between a function and its inverse. (MT.PLUS.ALG.FUN.2)

Polynomial Functions (POLY)

- Understand polynomials are created by multiplying linear factors. (MT.PLUS.ALG.POLY.1)
- Understand that polynomial expressions can be represented in both factored and standard form, and the specific features of each form by:
    - Choosing the form strategically based on given information and intended use when writing an expression,
    - Converting between factored and standard form symbolically and using representations (e.g., area model), and
    - Interpreting the relationship between the factored form of the expression and the zeros of the function. (MT.PLUS.ALG.POLY.2)
- Graph polynomial functions with and without the use of technology, by identifying zeros, relative maxima and minima, and end behavior. (MT.PLUS.ALG.POLY.3)
- Solve quadratic equations that have complex solutions, and understand why the solutions form a conjugate pair. (MT.PLUS.ALG.POLY.4)

Exponential and Logarithmic Functions (EXP)

- Understand logarithmic functions as the inverse of exponential functions. (MT.PLUS.ALG.EXP.1)
- Understand why e is defined as the natural base. (MT.PLUS.ALG.EXP.2)

- Understand that exponential and logarithmic functions can be represented using multiple forms by:
  - Expressing exponential functions in the form $f(x) = a \cdot b^x$ and $f(x) = Pe^{r \cdot t}$, and
  - Expressing logarithmic functions in base 10 and base e. (MT.PLUS.ALG.EXP.3)
- Graph logarithmic and exponential functions with and without the use of technology by identifying intercepts, asymptotes, and end behavior. (MT.PLUS.ALG.EXP.4)
- Solve exponential and logarithmic equations using inverse operations with and without the use of technology. (MT.PLUS.ALG.EXP.5)

Trigonometric Functions (TRIG)

- Understand how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers by:
  - Defining the sine and cosine functions in terms of the unit circle, and
  - Defining the tangent, cotangent, secant, and cosecant functions in terms of sine and cosine. (MT.PLUS.ALG.TRIG.1)
- Understand and use the radian measure of an angle, and convert between degree and radian measures. (MT.PLUS.ALG.TRIG.2)
- Graph trigonometric functions with and without the use of technology by:
  - Graphing sine and cosine functions, identifying period, midline, and amplitude, and
  - Graphing tangent functions, identifying period and asymptotes. (MT.PLUS.ALG.TRIG.3)
- Solve trigonometric equations with and without the use of technology. (MT.PLUS.ALG.TRIG.4)
- Apply the Law of Sines and the Law of Cosines to find unknown measurements in non-right triangles. (MT.PLUS.ALG.TRIG.5)

Modeling (MOD)

- Model situations in context with polynomial, exponential, logarithmic, and trigonometric functions. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities by:
    - Determining if a set of data is best modeled by a polynomial, exponential, logarithmic, or trigonometric function or none, and explaining why, and
    - Understanding that there are contexts where solutions may not lie on the curve. (MT.PLUS.ALG.MOD.1)
- Interpret the coefficients in a polynomial, exponential, logarithmic, and trigonometric model in context. This standard should incorporate cultural context relating to Montana Indigenous Peoples and local communities. (MT.PLUS.ALG.MOD.2)
- Use and interpret units correctly in modeling situations. (MT.PLUS.ALG.MOD.3)
- Choose a level of accuracy appropriate to limitations on measurement when reporting quantities in modeling situations. (MT.PLUS.ALG.MOD.4)

Core Plus Date Reasoning Standards (DATA)

Normal Distribution (NORM)

- Determine if a data set is normally distributed. (MT.PLUS.DATA.NORM.1)
- Use technology to find the mean and standard deviation of a normally distributed data set and apply the empirical rule to estimate population percentages. (MT.PLUS.DATA.NORM.2)
- Estimate areas under a normal curve to solve problems in context, using calculators, spreadsheets, and tables as appropriate. (MT.PLUS.DATA.NORM.3)

Experimental Design (DES)

- Describe the purposes of and differences among sample surveys, experiments, and observational studies and explain how randomization relates to each. (MT.PLUS.DATA.DES.1)
- Describe differences between randomly selecting samples and randomly assigning subjects to experimental treatment groups in terms of inferences drawn regarding a population versus regarding cause and effect by:
    - Explaining the consequences, due to uncontrolled variables, of non-randomized assignment of subjects to groups in experiments, and
    - Evaluating where bias, including sampling, response, or nonresponse bias, may occur in surveys, and whether results are representative of the population of interest. (MT.PLUS.DATA.DES.2)
- Evaluate the effect of sample size on the expected variability in the sampling distribution of a sample statistic by:
    - Simulating a sampling distribution of sample means from a population with a known distribution, observing the effect of the sample size on the variability, and
    - Demonstrating that the standard deviation of each simulated sampling distribution is the known standard deviation of the population divided by the square root of the sample size. (MT.PLUS.DATA.DES.3)

Statistical Inference Using Simulation (INF)

- Distinguish between a statistic and a parameter and use statistical processes to make inferences about population parameters based on statistics from random samples from that population. (MT.PLUS.DATA.INF.1)
- Estimate a population parameter from a representative sample by:
    - Understanding why the sample statistic is the best estimate for the associated population parameter,
    - Understanding that sampling variability introduces uncertainty in the estimate, and account for the uncertainty with a confidence interval by:
        - Using resampling with replacement from an observed sample to produce a sampling distribution,
        - Verifying that a sampling distribution is centered at the population mean and approximately normal if the sample size is large enough,
        - Verifying that 95% of sample means are within two standard deviations of the sampling distribution from the population mean, and
        - Creating and interpreting a 95% confidence interval based on an observed mean from a sampling distribution. (MT.PLUS.DATA.INF.3)
- Use data from a randomized experiment to test the hypothesis that two groups are equal by:
    - Interpreting the difference or ratio between the group means as the observed effect between the groups, and
    - Understanding that an observed effect may be due to randomization and using a randomization test (repeatedly reshuffling the observed data into new groups) to determine the probability that an observed effect is due to randomization alone. (MT.PLUS.DATA.INF.4)

Appendix A: K-12 Correspondence with Common Core State Standards

An important note: The Montana State Standards are distinct from the Common Core Standards. This communication is intended to clarify that the two sets of standards should not be viewed as identical. Instead, it serves as a resource for educators who are navigating the differences that may arise when working with curriculum aligned to the Common Core Standards (CCSS). As many curriculum materials are now aligned to CCSS, understanding the standards that share similarities can assist educators in evaluating their curricula and aligning the new standards with their instructional resources. It remains essential for educators to assess their curricula to ensure compliance with the Montana State Standards. This appendix is designed to support that process. In certain instances, teaching to the Common Core Standard may not fully encompass all aspects of the Montana Standard, particularly those referencing Montana's Indigenous Peoples and local communities. Conversely, there may be situations where adherence to the Common Core Standard could lead to instruction that exceeds the scope of the Montana Standard. Educators should take care when reviewing their curriculum alignment to the Montana Content Standards.

K-12 Mathematical Practice Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.MP.1	CCSS.MP.1
MT.MP.2	CCSS.MP.2, CCSS.MP.7, CCSS.MP.8
MT.MP.3	CCSS.MP.3, CCSS.MP.6
MT.MP.4	CCSS.MP.4
MT.MP.5	CCSS.MP.5
MT.MP.6	No Equivalent
MT.MP.7	No Equivalent

Kindergarten Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.K.CC.1	CCSS.K.CC.A.1
MT.K.CC.2	CCSS.K.CC.A.2
MT.K.CC.3	CCSS.K.CC.A.3
MT.K.CC.4	CCSS.K.CC.B.1 and CCSS.K.CC.B.1.c
MT.K.CC.5	CCSS.K.CC.B.5
MT.K.CC.6	CCSS.K.CC.C.6
MT.K.CC.7	CCSS.K.CC.C.7
MT.K.OA.1	CCSS.K.OA.A.1
MT.K.OA.2	CCSS.K.OA.A.2
MT.K.OA.3	CCSS.K.OA.A.3
MT.K.OA.4	CCSS.K.OA.A.4
MT.K.OA.5	CCSS.K.OA.A.5
MT.K.OA.6	No equivalent
MT.K.NBT.1	CCSS.K.NBT.A.1
MT.K.MD.1	CCSS.K.MD.A.1
MT.K.MD.2	CCSS.K.MD.A.2
MT.K.MD.3	CCSS.K.MD.B.3
MT.K.MD.4	No equivalent
MT.K.MD.5	No equivalent
MT.K.G.1	CCSS.K.G.A.1
MT.K.G.2	CCSS.K.G.A.2
MT.K.G.3	CCSS.K.G.A.3
MT.K.G.4	CCSS.K.G.B.4
MT.K.G.5	CCSS.K.G.B.5
MT.K.G.6	CCSS.K.G.B.6

Grade 1 Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.1.OA.1	CCSS.1.OA.A.1
MT.1.OA.2	CCSS.1.OA.A.2
MT.1.OA.3	CCSS.1.OA.B.3
MT.1.OA.4	CCSS.1.OA.B.4
MT.1.OA.5	CCSS.1.OA.C.5
MT.1.OA.6	CCSS.1.OA.C.6
MT.1.OA.7	CCSS.1.OA.C.6
MT.1.OA.8	CCSS.1.OA.D.7
MT.1.OA.9	CCSS.1.OA.D.8
MT.1.NBT.1	CCSS.1.NBT.A.1
MT.1.NBT.2	CCSS.1.NBT.B.2
MT.1.NBT.3	CCSS.1.NBT.B.3
MT.1.NBT.4	CCSS.1.NBT.C.4
MT.1.NBT.5	CCSS.1.NBT.C.5
MT.1.NBT.6	CCSS.1.NBT.C.6
MT.1.MD.1	CCSS.1.MD.A.1
MT.1.MD.2	CCSS.1.MD.A.2
MT.1.MD.3	CCSS.1.MD.B.3
MT.1.MD.4	No equivalent
MT.1.MD.5	CCSS.1.MD.C.4
MT.1.G.1	CCSS.1.G.A.1
MT.1.G.2	No equivalent
MT.1.G.3	CCSS.1.G.A.2
MT.1.G.4	CCSS.1.G.A.3

Grade 2 Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.2.OA.1	CCSS.2.OA.A.1
MT.2.OA.2	CCSS.2.OA.B.2
MT.2.OA.3	CCSS.2.OA.C.3
MT.2.OA.4	CCSS.2.OA.C.4
MT.2.NBT.1	CCSS.2.NBT.A.1
MT.2.NBT.2	CCSS.2.NBT.A.2
MT.2.NBT.3	CCSS.2.NBT.A.3
MT.2.NBT.4	CCSS.2.NBT.A.4
MT.2.NBT.5	CCSS.2.NBT.B.5
MT.2.NBT.6	CCSS.2.NBT.B.6
MT.2.NBT.7	CCSS.2.NBT.B.7
MT.2.NBT.8	CCSS.2.NBT.B.8
MT.2.NBT.9	CCSS.2.NBT.B.9
MT.2.MD.1	CCSS.2.MD.A.1
MT.2.MD.2	CCSS.2.MD.A.2
MT.2.MD.3	CCSS.2.MD.A.3
MT.2.MD.4	CCSS.2.MD.A.4
MT.2.MD.5	CCSS.2.MD.B.5
MT.2.MD.6	CCSS.2.MD.B.6
MT.2.MD.7	CCSS.2.MD.C.7
MT.2.MD.8	CCSS.2.MD.C.8
MT.2.MD.9	CCSS.2.MD.C.9
MT.2.MD.10	CCSS.2.MD.C.10
MT.2.MD.11	No equivalent
MT.2.G.1	CCSS.2.G.A.1
MT.2.G.2	CCSS.2.G.A.2
MT.2.G.3	CCSS.2.G.A.3

Grade 3 Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.3.OA.1	CCSS.3.OA.A.1
MT.3.OA.2	CCSS.3.OA.A.2
MT.3.OA.3	CCSS.3.OA.A.3
MT.3.OA.4	CCSS.3.OA.A.4
MT.3.OA.5	CCSS.3.OA.B.5
MT.3.OA.6	CCSS.3.OA.B.6
MT.3.OA.7	CCSS.3.OA.C.7
MT.3.OA.8	CCSS.3.OA.D.8
MT.3.OA.9	CCSS.3.OA.D.9
MT.3.NBT.1	CCSS.3.NBT.A.1
MT.3.NBT.2	CCSS.3.NBT.A.2
MT.3.NBT.3	CCSS.3.NBT.A.3
MT.3.NF.1	CCSS.3.NF.A.1
MT.3.NF.2	CCSS.3.NF.A.2
MT.3.NF.3	CCSS.3.NF.A.3
MT.3.MD.1	CCSS.3.MD.A.1
MT.3.MD.2	CCSS.3.MD.A.2
MT.3.MD.3	CCSS.3.MD.B.3
MT.3.MD.4	CCSS.3.MD.B.4
MT.3.MD.5	CCSS.3.MD.C.5
MT.3.MD.6	CCSS.3.MD.C.6
MT.3.MD.7	CCSS.3.MD.C.7
MT.3.MD.8	CCSS.3.MD.C.8
MT.3.G.1	CCSS.3.G.A.1
MT.3.G.2	CCSS.3.G.A.2

Grade 4 Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.4.OA.1	CCSS.4.OA.A.1
MT.4.OA.2	CCSS.4.OA.A.2
MT.4.OA.3	CCSS.4.OA.A.3
MT.4.OA.4	CCSS.4.OA.B.4
MT.4.OA.5	CCSS.4.OA.C.5
MT.4.NBT.1	CCSS.4.NBT.A.1
MT.4.NBT.2	CCSS.4.NBT.A.2
MT.4.NBT.3	CCSS.4.NBT.A.3
MT.4.NBT.4	CCSS.4.NBT.B.4
MT.4.NBT.5	CCSS.4.NBT.B.5
MT.4.NBT.6	CCSS.4.NBT.B.6
MT.4.NF.1	CCSS.4.NF.A.1
MT.4.NF.2	CCSS.4.NF.A.2
MT.4.NF.3	CCSS.4.NF.B.3
MT.4.NF.4	CCSS.4.NF.B.4
MT.4.NF.5	CCSS.4.NF.C.5
MT.4.NF.6	CCSS.4.NF.C.6
MT.4.NF.7	CCSS.4.NF.C.7
MT.4.MD.1	CCSS.4.MD.1
MT.4.MD.2	CCSS.4.MD.2
MT.4.MD.3	CCSS.4.MD.3
MT.4.MD.4	CCSS.4.MD.4
MT.4.MD.5	CCSS.4.MD.5
MT.4.MD.6	CCSS.4.MD.6
MT.4.MD.7	CCSS.4.MD.7
MT.4.G.1	CCSS.4.G.1
MT.4.G.2	CCSS.4.G.2
MT.4.G.3	CCSS.4.G.3

Grade 5 Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.5.OA.1	CCSS.5.OA.A.1
MT.5.OA.2	CCSS.5.OA.A.2
MT.5.OA.3	CCSS.5.OA.B.3
MT.5.NBT.1	CCSS.5.NBT.A.1
MT.5.NBT.2	CCSS.5.NBT.A.2
MT.5.NBT.3	CCSS.5.NBT.A.3
MT.5.NBT.4	CCSS.5.NBT.A.4
MT.5.NBT.5	CCSS.5.NBT.B.5
MT.5.NBT.6	CCSS.5.NBT.B.6
MT.5.NBT.7	CCSS.5.NBT.B.7
MT.5.NF.1	CCSS.NF.A.1
MT.5.NF.2	CCSS.NF.A.2
MT.5.NF.3	CCSS.NF.B.3
MT.5.NF.4	CCSS.NF.B.4
MT.5.NF.5	CCSS.NF.B.5
MT.5.NF.6	CCSS.NF.B.6
MT.5.NF.7	CCSS.NF.B.7
MT.5.MD.1	CCSS.MD.A.1
MT.5.MD.2	CCSS.MD.B.2
MT.5.MD.3	CCSS.MD.C.3
MT.5.MD.4	CCSS.MD.C.4
MT.5.MD.5	CCSS.MD.C.5
MT.5.G.1	CCSS.G.A.1
MT.5.G.2	CCSS.G.B.2
MT.5.G.3	CCSS.G.B.3
MT.5.G.4	CCSS.G.B.4

Grade 6 Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.6.RP.1	CCSS.6.NS.A.1
MT.6.RP.2	CCSS.6.NS.B.2
MT.6.RP.3	CCSS.6.NS.B.3
MT.6.NS.1	CCSS.6.NS.B.4
MT.6.NS.2	CCSS.6.NS.C.5
MT.6.NS.3	CCSS.6.NS.C.6
MT.6.NS.4	CCSS.6.NS.A.1
MT.6.NS.5	CCSS.6.NS.B.2
MT.6.NS.6	CCSS.6.NS.B.3
MT.6.NS.7	CCSS.6.NS.C.7
MT.6.NS.8	CCSS.6.NS.C.8
MT.6.EE.1	CCSS.6.EE.A.1
MT.6.EE.2	CCSS.6.EE.A.2
MT.6.EE.3	CCSS.6.EE.A.3
MT.6.EE.4	CCSS.6.EE.B.5
MT.6.EE.5	CCSS.6.EE.B.6
MT.6.EE.6	CCSS.6.EE.B.7
MT.6.EE.7	CCSS.6.EE.B.8
MT.6.EE.8	CCSS.6.EE.C.9
MT.6.G.1	CCSS.6.G.A.1
MT.6.G.2	CCSS.6.G.A.2
MT.6.G.3	CCSS.6.G.A.3
MT.6.G.4	CCSS.6.G.A.4
MT.6.SP.1	CCSS.6.SP.A.1
MT.6.SP.2	CCSS.6.SP.A.2
MT.6.SP.3	CCSS.6.SP.A.3
MT.6.SP.4	CCSS.6.SP.B.4
MT.6.SP.5	CCSS.6.SP.B.5

Grade 7 Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.7.RP.1	CCSS.7.RP.A.1
MT.7.RP.2	CCSS.7.RP.A.2
MT.7.RP.3	CCSS.7.RP.A.3
MT.7.NS.1	CCSS.7.NS.A.1
MT.7.NS.2	CCSS.7.NS.A.2, CCSS.7.NS.A.3
MT.7.NS.3	CCSS.7.NS.A.2.d
MT.7.EE.1	CCSS.7.EE.A.1
MT.7.EE.2	CCSS.7.EE.A.2
MT.7.EE.3	CCSS.7.EE.B.3
MT.7.EE.4	CCSS.7.EE.B.4
MT.7.G.1	CCSS.7.G.A.1
MT.7.G.2	CCSS.7.G.A.2
MT.7.G.3	CCSS.7.G.B.4
MT.7.G.4	CCSS.7.G.B.5
MT.7.G.5	CCSS.7.G.B.6
MT.7.SP.1	CCSS.7.SP.A.1
MT.7.SP.2	CCSS.7.SP.A.2
MT.7.SP.3	CCSS.7.SP.B.3
MT.7.SP.4	CCSS.7.SP.B.4
MT.7.SP.5	CCSS.7.SP.C.5
MT.7.SP.6	CCSS.7.SP.C.6
MT.7.SP.7	CCSS.7.SP.C.7
MT.7.SP.8	CCSS.7.SP.C.8

Grade 8 Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.8.NS.1	CCSS.NS.A.1
MT.8.NS.2	CCSS.NS.A.2
MT.8.EE.1	CCSS.8.EE.A.1
MT.8.EE.2	CCSS.8.EE.A.2
MT.8.EE.3	CCSS.8.EE.A.3
MT.8.EE.4	CCSS.8.EE.A.4
MT.8.EE.5	CCSS.8.EE.B.5
MT.8.EE.6	CCSS.8.EE.B.6
MT.8.EE.7	CCSS.8.EE.C.7
MT.8.EE.8	CCSS.8.EE.C.8
MT.8.F.1	CCSS.8.F.A.1
MT.8.F.2	CCSS.8.F.A.2
MT.8.F.3	CCSS.8.F.A.3
MT.8.F.4	CCSS.8.F.B.4
MT.8.F.5	CCSS.8.F.B.5
MT.8.G.1	CCSS.8.G.A.1
MT.8.G.2	CCSS.8.G.A.2
MT.8.G.3	CCSS.8.G.A.3
MT.8.G.4	CCSS.8.G.A.4
MT.8.G.5	CCSS.8.G.A.5
MT.8.G.6	CCSS.8.G.B.6
MT.8.G.7	CCSS.8.G.B.7
MT.8.G.8	CCSS.8.G.B.8
MT.8.G.9	CCSS.8.G.C.9
MT.8.SP.1	CCSS.8.SP.A.1
MT.8.SP.2	CCSS.8.SP.A.2
MT.8.SP.3	CCSS.8.SP.A.3
MT.8.SP.4	CCSS.8.SP.A.4

High School Core Numeric Reasoning Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.CORE.NUM.REAL.1	No equivalent
MT.CORE.NUM.REAL.2	No equivalent
MT.CORE.NUM.REAL.3	N-RN.A.B, N-RN.B.3

High School Core Algebraic and Functional Reasoning Mathematics Content Standards			
Montana Standard Code	*Correlated Common Core Standard(s)*	*Montana Standard Code*	*Correlated Common Core Standard(s)*
MT.CORE.ALG.FUN.1	A-SSE.A, A-SSE.A.1,	MT.CORE.ALG.LIN.5	A-REI.D.12, A-REI.D.11
MT.CORE.ALG.FUN.2	F-IF.B.4, F-IF.A.1	MT.CORE.ALG.LIN.6	A-REI.D.11, A-REI.C.6, A.REI.C.5
MT.CORE.ALG.FUN.3	A-CED.A.2	MT.CORE.ALG.QUAD.1	F-LE.A.3, F-LE.A.1
MT.CORE.ALG.FUN.3.a	No equivalent	MT.CORE.ALG.QUAD.2	F-IF.C.7, F-IF.C.8, A-SSE.B.3
MT.CORE.ALG.FUN.3.b	F-IF.C.9	MT.CORE.ALG.QUAD.3	F-IF.C.8, A-SSE.B.3
MT.CORE.ALG.FUN.4	F-IF.A.2, F-IF.B.5, F-IF.A.1	MT.CORE.ALG.QUAD.3.a	A-SSE.B.3
MT.CORE.ALG.FUN.5	F-IF.B.5, A-CED.A.3	MT.CORE.ALG.QUAD.3.b	A-SSE.B.3, A-SSE.A.2
MT.CORE.ALG.FUN.6	A-REI.D.10	MT.CORE.ALG.QUAD.3.c	A-SSE.B.3
MT.CORE.ALG.FUN.7	A-SSE.A.1, A-SSE.A.2, A-SSE.B	MT.CORE.ALG.QUAD.3.d	A-SSE.B.3
MT.CORE.ALG.FUN.8	A-CED.A.4	MT.CORE.ALG.QUAD.4	A-REI.B.4
MT.CORE.ALG.LIN.1	F-IF.B.6, F-LE.A.1	MT.CORE.ALG.EXP.1	F-LE.A.2, F-LE.A.1
MT.CORE.ALG.LIN.2	F-IF.B.6, S-ID.C.7	MT.CORE.ALG.EXP.2	F-IF.C.8
MT.CORE.ALG.LIN.3	F-IF.C.7, F-IF.B.4, F-LE.A.2	MT.CORE.ALG.EXP.3	F-IF.C.8, A-SSE.B.3
MT.CORE.ALG.LIN.3.a	S-ID.C.7	MT.CORE.ALG.EXP.4	F-IF.C.7, F-IF.C.8, F-LE.A.2
MT.CORE.ALG.LIN.3.b	F-IF.C.9	MT.CORE.ALG.EXP.5	A-CED.A.1
MT.CORE.ALG.LIN.3.c	G-GPE.B.5	MT.CORE.ALG.MOD.1	F-LE-B, F-LE.B.5, F-BF.A.1
MT.CORE.ALG.LIN.4	F-IF.C.8	MT.CORE.ALG.MOD.1.a	F-LE.A.1
MT.CORE.ALG.LIN.4.a	No equivalent	MT.CORE.ALG.MOD.1.b	A-REI.D.12
MT.CORE.ALG.LIN.4.b	A-SSE.A.2	MT.CORE.ALG.MOD.2	A-SSE.A.1, F-IF.B.4
MT.CORE.ALG.LIN.4.c	No equivalent	MT.CORE.ALG.MOD.3	N-Q.A., N-Q.A.1
MT.CORE.ALG.LIN.4.d	No equivalent	MT.CORE.ALG.MOD.4	N-Q.A.3
MT.CORE.ALG.LIN.4.e	No equivalent		

High School Core Data Reasoning and Probability Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.CORE.DATA.LIT.1	S-ID.B.6
MT.CORE.DATA.LIT.2	S-ID.B
MT.CORE.DATA.LIT.3	S-ID.C9
MT.CORE.DATA.INT.1	No equivalent
MT.CORE.DATA.INT.2	S-ID.A.1
MT.CORE.DATA.INT.3	S-ID.A.2
MT.CORE.DATA.INT.4	S-ID.A, S-ID.A.3
MT.CORE.DATA.INT.5	S-ID.A.2
MT.CORE.DATA.INT.6	S-ID.C, S-ID.C.7, S-ID.B.6
MT.CORE.DATA.INT.6.a	S-ID.B6
MT.CORE.DATA.INT.6.b	S-ID.B6
MT.CORE.DATA.INT.6.c	S-ID.C8
MT.CORE.DATA.INT.6.d	S-ID.C.8
MT.CORE.DATA.INT.6.e	S-ID.C.8
MT.CORE.DATA.INT.7	S-ID.B5
MT.CORE.DATA.INT.7.a	S-ID.B5, S-CP.A.4
MT.CORE.DATA.INT.7.b	S-ID.B5
MT.CORE.DATA.INT.7.c	S-ID.B5
MT.CORE.DATA.PROB.1	S-CP.A.1
MT.CORE.DATA.PROB.2	S-CP.A, S-CP.A.2, S-CP.A.3, S-CP.A.5
MT.CORE.DATA.PROB.2.a	S-CP.A3 S-CP.B.6, S-CP.A.3, S-CP.A.4
MT.CORE.DATA.PROB.2.b	S-CP.A, S-CP.B, S-CP.A.2, S-CP.A.4

High School Core Geometric Reasoning Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.CORE.GEOM.TRANS.1	C-CO.A, G-CO.A.2, G-CO.A.5, G-SRT.B.5
MT.CORE.GEOM.TRANS.2	G-CO.B.6, G-CO.A.3
MT.CORE.GEOM.TRANS.2.a	G-CO.B.7, G-CO.B.6
MT.CORE.GEOM.TRANS.2.b	G-CO.B.8
MT.CORE.GEOM.TRANS.3	G-CO.A.2, G-CO.A.5, G-SRT.A.2
MT.CORE.GEOM.TRANS.3.a	G-SRT.A, G-SRT.A.2, G-SRT.B.5
MT.CORE.GEOM.TRANS.3.b	G-SRT.A, G-SRT.A.3
CORE.GEOM.ARG.1	G-CO.C, G-CO.D.12, G-CO.C.11, G-CO.C.9
CORE.GEOM.ARG.1.a	G-CO.C.9
CORE.GEOM.ARG.1.b	G-CO.C.10, G-SRT.B.4
CORE.GEOM.ARG.1.c	G-CO.C.11
CORE.GEOM.ARG.1.d	G-C.A, G-C.A.2
CORE.GEOM.MEAS.1	G-GPE.B.7
CORE.GEOM.MEAS.2	G.GPE.A.1
CORE.GEOM.MEAS.3	G-SRT.C.6
CORE.GEOM.MEAS.3.a	F-TF.A
CORE.GEOM.MEAS.3.b	G-SRT.C, G-SRT.C.8
CORE.GEOM.MEAS.4	G-MG.A, G-MG.A.1, G-MG.A.3
CORE.GEOM.MEAS.4.a	G-C.B, G-MG.A, G-MG.A.3
CORE.GEOM.MEAS.4.b	G-MG.A.1, G-GMD.A.3, G-MG.A
CORE.GEOM.MEAS.4.c	No equivalent

High School Core Plus Number and Quantity Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.PLUS.NUM.REAS.1	N-RN.A,N-RN.A.1, N-RN.A.2, N-CN.A.2
MT.PLUS.NUM.REAS.2	N-CN.A.1
MT.PLUS.NUM.REAS.2.a	N-CN.A
MT.PLUS.NUM.REAS.2.b	N-CN.A.3

High School Core Plus Algebraic and Functional Reasoning Mathematics Content Standards			
Montana Standard Code	*Correlated Common Core Standard(s)*	*Montana Standard Code*	*Correlated Common Core Standard(s)*
MT.PLUS.ALG.FUN.1	F-BF.B.3	MT.PLUS.ALG.TRIG.3.b	F-TF.B, F-IF.B.4
MT.PLUS.ALG.FUN.2	F-BF.B.4	MT.PLUS.ALG.TRIG.4	No equivalent
MT.PLUS.ALG.POLY.1	A-APR.B, A-SSE.A.1	MT.PLUS.ALG.TRIG.5	G-SRT.D.10, G-SRT.D.11
MT.PLUS.ALG.POLY.2	No equivalent	MT.PLUS.ALG.MOD.1	F.LE.A, F-BF.A.1, F-TF.B.5
MT.PLUS.ALG.POLY.2.a	F-IF.C.8	MT.PLUS.ALG.MOD.1.a	F.LE.A, F.LE.B, F-LE.B.5 F-LE.A.1, F-TF.B.5
MT.PLUS.ALG.POLY.2.b	F-IF.C.8, A-SSE.A.2	MT.PLUS.ALG.MOD.1.b	A-CED.A.3, A-REI.D.12
MT.PLUS.ALG.POLY.2.c	F-IF.C.8	MT.PLUS.ALG.MOD.2	F-IF.B, F-IF.B.4, F-TF.B.5
MT.PLUS.ALG.POLY.3	F-IF.C.7, F-IF.B.4	MT.PLUS.ALG.MOD.3	N-Q.A, N-Q.A.1
MT.PLUS.ALG.POLY.4	N-CN.C, N-CN.C.7,	MT.PLUS.ALG.MOD.4	N-Q.A.2, N-Q.A.3
MT.PLUS.ALG.EXP.1	F-BF.B.5		
MT.PLUS.ALG.EXP.2	F-LE.A.4		
MT.PLUS.ALG.EXP.3	F-LE.A.4		
MT.PLUS.ALG.EXP.3.a	F-LE.A.4		
MT.PLUS.ALG.EXP.3.b	F-LE.A.4		
MT.PLUS.ALG.EXP.4	F-IF.C.7, F-IF.B.4		
MT.PLUS.ALG.EXP.5	F-BF.B.5		
MT.PLUS.ALG.TRIG.1	F-TF.A, F-TF.A.2		
MT.PLUS.ALG.TRIG.1.a	F-TF.A.2		
MT.PLUS.ALG.TRIG.1.b	F-TF.C		
MT.PLUS.ALG.TRIG.2	F-TF.A.1, G-C.B.5		
MT.PLUS.ALG.TRIG.3	F-TF.B,		
MT.PLUS.ALG.TRIG.3.a	F-TF.B, F-IF.B.4		

High School Core Plus Data and Reasoning Mathematics Content Standards	
Montana Standard Code	*Correlated Common Core Standard(s)*
MT.PLUS.DATA.NORM.1	S-ID.A.4
MT.PLUS.DATA.NORM.2	S-ID.A.4
MT.PLUS.DATA.NORM.3	S-ID.A.4
MT.PLUS.DATA.DES.1	S-IC.B.3
MT.PLUS.DATA.DES.2	No equivalent
MT.PLUS.DATA.DES.2.a	S-IC.B.6
MT.PLUS.DATA.DES.2.b	S-IC.B.6
MT.PLUS.DATA.DES.3	No equivalent
MT.PLUS.DATA.DES.3.a	No equivalent
MT.PLUS.DATA.DES.3.b	No equivalent
MT.PLUS.DATA.INF.1	S-IC.A.1
MT.PLUS.DATA.INF.2	S-IC.A.1, S-IC.B.4
MT.PLUS.DATA.INF.2.a	S-IC.B.4
MT.PLUS.DATA.INF.2.b	S-IC.B.4
MT.PLUS.DATA.INF.2.b.i	S-IC.B.4
MT.PLUS.DATA.INF.2.b.ii	S-IC.B.4
MT.PLUS.DATA.INF.2.b.iii	S-IC.B.4
MT.PLUS.DATA.INF.2.b.iv	S-IC.B.4
MT.PLUS.DATA.INF.3	S-IC.B.5
MT.PLUS.DATA.INF.3.a	No equivalent
MT.PLUS.DATA.INF.3.b	S-IC.B.3

Appendix X: References

National Assessment Governing Board (NAGB). (2022). *5 Mathematical Practices for the NAEP Assessment*. https://www.nagb.gov/content/dam/nagb/en/documents/publications/frameworks/mathematics/2026-math-frameowork/2022-NAGB-Mathematics-One-Pager-508.pdf

Regional Educational Laboratory (REL) Northwest. (2023). *Task 4: Training Coaching and Technical Support: Handout Overview.* https://opi.mt.gov/LinkClick.aspx?fileticket=0hYodNygrDQ%3d&portalid=182

Regional Educational Laboratory (REL) Northwest. (2023). *Handout A: Literature Scan-Foundational Math Content for PK-5.* https://opi.mt.gov/LinkClick.aspx?fileticket=0lDdjFGNyIw%3d&portalid=182

Regional Educational Laboratory (REL) Northwest. (2023). *Handout B: Literature Scan - Process Standards*. https://opi.mt.gov/LinkClick.aspx?fileticket=hnkHrYtshpY%3d&portalid=182

Regional Educational Laboratory (REL) Northwest. (2023). *Handout C: High School Mathematics Pathways.* https://opi.mt.gov/LinkClick.aspx?fileticket=0lGFThaZqHw%3d&portalid=182