Montana Math

Grade 3

Operations and Algebraic Thinking MT.3.OA

1 **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

2 **Understand whole-number quotients of whole numbers:** MT.3.OA.2

- a *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. MT.3.OA.2.A
- b *Understand whole-number quotients of whole numbers* as the number of shares when a total number of objects is partitioned into equal-sized groups. MT.3.OA.2.B

3 **Use multiplication and division within 100 to solve problems in context in situations involving equal groups, arrays, and measurement quantities.** MT.3.OA.3

4 **Determine the unknown whole number in a multiplication or division equation relating three whole numbers.** MT.3.OA.4

5 **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

6 **Use division as an unknown factor problem.** MT.3.OA.6

7 **Flexibly, accurately, and efficiently multiply and divide within 100, using strategies such as the relationship between multiplication and division.** MT.3.OA.7

8 **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

9 **Identify arithmetic patterns and explain them using properties of operations.** MT.3.OA.9

Number and Operations in Base Ten MT.3.NBT

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

2 **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

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	3 **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 MT.3.NF	1 **Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts and understand a fraction a/b as the quantity formed by a parts of size 1/b.** MT.3.NF.1
	2 **Understand a fraction as a number on the number line by:** MT.3.NF.2 a *Understand a fraction as a number on the number line by* representing a unit fraction on a number line. MT.3.NF.2.A b *Understand a fraction as a number on the number line by* representing a fraction as multiple copies of a unit fraction on a number line. MT.3.NF.2.B c *Understand a fraction as a number on the number line by* representing fractions on a number line. MT.3.NF.2.C
	3 **Understand the equivalence of fractions in special cases and compare fractions by reasoning about their size by:** MT.3.NF.3 a *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. MT.3.NF.3.A b *Understand the equivalence of fractions in special cases and compare fractions by reasoning about their size by* recognizing and generating simple equivalent fractions and by demonstrating or justifying why the fractions are equivalent. MT.3.NF.3.B c *Understand the equivalence of fractions in special cases and compare fractions by reasoning about their size by* writing whole numbers as fractions, recognizing fractions that are equivalent to whole numbers, and locating them on a number line. MT.3.NF.3.C d *Understand the equivalence of fractions in special cases and compare fractions by reasoning about their size by* 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. MT.3.NF.3.D e *Understand the equivalence of fractions in special cases and compare fractions by reasoning about their size by* recording the results of fraction comparisons with the symbols >, =, or < and justifying the conclusions. MT.3.NF.3.E
Measurement and Data MT.3.MD	1 **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

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2 **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

3 **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

4 **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

5 **Recognize area as an attribute of plane figures and understand concepts of area measurement by:** MT.3.MD.5

a *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. MT.3.MD.5.A

b *Recognize area as an attribute of plane figures and understand concepts of area measurement by* 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.B

6 **Measure areas by counting unit squares.** MT.3.MD.6

7 **Relate area to the operations of multiplication and addition by:** MT.3.MD.7

a *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. MT.3.MD.7.A

b *Relate area to the operations of multiplication and addition by* 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. MT.3.MD.7.B

c *Relate area to the operations of multiplication and addition by* 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 x b and a x c. MT.3.MD.7.C

d *Relate area to the operations of multiplication and addition by* recognizing area as additive, finding areas of straight line figures by decomposing them into nonoverlapping rectangles and adding the areas of the nonoverlapping parts. MT.3.MD.7.D

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olve problems in context involving perimeters of polygons, including finding the erimeter 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 MT.3.G	1	**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
	2	**Partition shapes into parts with equal areas; express the area of each part as a unit fraction of the whole.** MT.3.G.2