



CCSS Math Content Priority Standards: 4th Grade

2020 Colorado Academic Standards for Mathematics are now more closely aligned to Common Core State Standards (CCSS). Please click this link for information regarding new features and adjustments to the 2020 Colorado Academic Standards for Mathematics.

<https://www.cde.state.co.us/comath/2020cas-ma-lookfor>

The language in some 2020 Colorado Academic Standards for Mathematics is slightly different from CCSS. For this document, the language from CCSS is used.

Operations and Algebraic Thinking (OA):

4.OA.A: Use the four operations with whole numbers to solve problems.

4.OA.A.3: Solve multistep word problems posed 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. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

4.OA.C: Generate and analyze patterns.

4.OA.C.5: Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.

Number and Operations in Base Ten (NBT):

4.NBT.A: Generalize place value understanding for multi-digit whole numbers.

4.NBT.A.1: Explain that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.

4.NBT.A.3: Use place value understanding to round multi-digit whole numbers to any place.

4.NBT.B: Use place value understanding and properties of operations to perform multi-digit arithmetic.

4.NBT.B.5: Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

4.NBT.B.6: Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Number and Operations – Fractions (NF):

4.NF.A: Extend understanding of fraction equivalence and ordering.

4.NF.A.1: Explain why a fraction a/b is equivalent to a fraction $n \times a/n \times b$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

4.NF.A.2: Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. 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, e.g., by using a visual fraction model.

4.NF.B: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

4.NF.B.3: Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.

4.NF.B.3.A: Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

4.NF.B.3.B: Decompose a fraction into a sum of fractions with like denominators in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples:
 $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2 \frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.

4.NF.B.3.D: Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.

4.NF.C: Understand decimal notation for fractions and compare decimal fractions.

4.NF.C.6: Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $\frac{62}{100}$ describe a length as 0.62 meters; locate 0.62 on a number line diagram.

Measurement and Data (MD):

4.MD.B: Represent and interpret data.

4.MD.B.4: Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

4.MD.C: Geometric Measurement: Understand concepts of angle and measure angles.

4.MD.C.5: Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint and understand concepts of angle measurement:

4.MD.C.5.A: An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles.

4.MD.C.5.B: An angle that turns through n one-degree angles is said to have an angle measure of n degrees.

Geometry (G):

4.G.A: Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

4.G.A.1: Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.