



## Math Priority Standards: 5<sup>th</sup> 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):**

#### **5.OA.A: Write and interpret numerical expressions.**

5.OA.A.1: Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

### **Number and Operations in Base Ten (NBT):**

#### **5.NBT.A: Understand the place value system.**

5.NBT.A.1: 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.

5.NBT.A.2: Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.

5.NBT.A.3: Read, write, and compare decimals to thousandths.

5.NBT.A.3a: Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g.,  $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$ .

5.NBT.A.4: Use place value understanding to round decimals to any place.

#### **5.NBT.B: Perform operations with multi-digit whole numbers and with decimals to hundredths.**

5.NBT.B.7: Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

### **Number and Operations—Fractions (NF):**

#### **5.NF.A: Use equivalent fractions as a strategy to add and subtract fractions.**

- 5.NF.A.1: Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example,  $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$ . (In general,  $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$ .)
- 5.NF.A.2: Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result  $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$  by observing that  $\frac{3}{7} < \frac{1}{2}$ .

#### **5.NF.B: Apply and extend previous understandings of multiplication and division to multiply and divide fractions.**

- 5.NF.B.4: Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- 5.NF.B.4.A: Interpret 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  $a \times q \div b$ . For example, use a visual fraction model to show  $(\frac{2}{3}) \times 4 = \frac{8}{3}$ , and create a story context for this equation. Do the same with  $(\frac{2}{3}) \times (\frac{4}{5}) = \frac{8}{15}$ . (In general,  $(\frac{a}{b}) \times (\frac{c}{d}) = \frac{ac}{bd}$ .)
- 5.NF.B.4.B: Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
- 5.NF.B.6: Solve real-world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

### **Measurement and Data (MD):**

#### **5.MD.C: Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.**

- 5.MD.C.3.B: 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.
- 5.MD.C.5: Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume.

### **Geometry (G):**

#### **5.G.A: Graph points on the coordinate plane to solve real-world and mathematical problems.**

- 5.G.A.1: Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (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 first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g.,  $x$ -axis and  $x$ -coordinate,  $y$ -axis and  $y$ -coordinate).