



4th Grade Math Curriculum Overview

The primary focal areas in Grade 4 are use of operations, fractions, and decimals and describing and analyzing geometry and measurement. These focal areas are supported throughout the mathematical strands of number and operations, algebraic reasoning, geometry and measurement, and data analysis. In Grades 3-5, the number set is limited to positive rational numbers. In number and operations, students will apply place value and represent points on a number line that correspond to a given fraction or terminating decimal. In algebraic reasoning, students will represent and solve multi-step problems involving the four operations with whole numbers with expressions and equations and generate and analyze patterns. In geometry and measurement, students will classify two-dimensional figures, measure angles, and convert units of measure. In data analysis, students will represent and interpret data. Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

Year at a Glance

1st Nine Weeks

Unit 1: Numeration

- 4.2(A) interpret the value of each place-value position as 10 times the position to the right and as one-tenth of the value of the place to its left
- 4.2(B) represent the value of the digit in whole numbers through 1,000,000,000 and decimals to the hundredths using expanded notation and numerals
- 4.2(C) compare and order whole numbers to 1,000,000,000 and represent comparisons using the symbols $>$, $<$, or $=$
- 4.2(D) round whole numbers to a given place value through the hundred thousands place
- 4.2(E) represent decimals, including tenths and hundredths, using concrete and visual models and money
- 4.2(F) compare and order decimals using concrete and visual models to the hundredths
- 4.2(G) relate decimals to fractions that name tenths and hundredths
- 4.2(H) determine the corresponding decimal to the tenths or hundredths place of a specified point on a number line
- 4.3(G) represent fractions and decimals to the tenths or hundredths as distances from zero on a number line

Unit 2: Addition & Subtraction

- 4.4(A) add and subtract whole numbers and decimals to the hundredths place using the standard algorithm;
- 4.4(G) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers
- 4.5(A) represent multi-step problems involving the 4 operations w/ whole numbers using strip diagrams and equations w/a letter standing for the unknown
- 4.8(C) solve problems that deal w/ measurements of length, intervals of time, liquid volumes, mass, & money using add, sub, mult, or div as appropriate
- 4.10(B) calculate profit in a given situation

Unit 3: Multiplication

- 4.4(B) determine products of a number and 10 or 100 using properties of operations and place value understandings
- 4.4(C) represent the product of 2 two-digit numbers using arrays, area models, or equations, including perfect squares through 15 by 15
- 4.4(G) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers

2nd Nine Weeks

Unit 3: Multiplication cont.

- 4.4(D) use strategies and algorithms, including the standard algorithm, to multiply up to a 4- digit number by a 1-digit number & to multiply a 2-digit num. by a 2-digit num.. Strategies may include mental math, partial products, & the commutative, associative, and distributive properties
- 4.4(H) Solve with fluency one-and two-step problems involving multiplication and division, including interpreting remainders

Unit 4: Division

- 4.4(E) represent the quotient of up to a four-digit whole number divided by a one-digit whole number using arrays, area models, or equations
- 4.4(F) use strategies and algorithms, including the standard algorithm, to divide up to a four- digit dividend by a one-digit divisor
- 4.4(G) round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers
- 4.4(H) Solve with fluency one-and two-step problems involving multiplication and division, including interpreting remainders

Unit 5: Patterns and Equations

- 4.5(A) represent multi-step problems involving the 4 operations w/ whole numbers using strip diagrams and equations w/a letter standing for the unknown
- 4.5(B) represent problems using an input-output table and numerical expressions to generate a number pattern that follows a given rule representing the relationship of the values in the resulting sequence and their position in the sequence

Unit 6: Financial Literacy

- 4.10(A) distinguish between fixed and variable expenses
- 4.10(B) calculate profit in a given situation
- 4.10(C) compare the advantages and disadvantages of various savings options
- 4.10(D) describe how to allocate weekly allowance among spending, saving, including for college; and sharing
- 4.10(E) describe the basic purpose of financial institutions, including keeping money safe, borrowing money, and lending

3rd Nine Weeks**Unit 7: Fractions**

- 4.3(A) represent a fraction a/b as a sum of fractions $1/b$, where a and b are whole numbers and $b > 0$, including when $a > b$
- 4.3(C) determine if two given fractions are equivalent using a variety of methods
- 4.3(D) compare two fractions with different numerators and different denominators and represent the comparison using the symbols $>$, $=$, or $<$
- 4.3(G) See Unit 1
- 4.3(B) decompose a fraction in more than 1 way into a sum of fractions w/the same denominator using concrete & pictorial models & recording results w/symbolic representation
- 4.3(E) represent and solve addition & subtraction of fractions with equal denominators using objects and pictorial models that build to the number line and properties of operation
- 4.3(F) evaluate the reasonableness of sums and differences of fractions using benchmark fractions 0, $1/4$, $1/2$, $3/4$, and 1, referring to the same whole

Unit 8: Lines, Angles, Shapes

- 4.6(A) identify points, lines, line segments, rays, angles, & perpendicular and parallel lines
- 4.6(B) identify and draw one or more lines of symmetry, if they exist, for a 2-D fig
- 4.6(C) apply knowledge of right angles to identify acute, right, & obtuse triangles
- 4.6(D) 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
- 4.7(A) illustrate the measure of an angle as the part of a circle whose center is at the vertex of the angle that is 'cut out' by the rays of the angle. Angle measures are limited to whole numbers.
- 4.7(B) illustrate degrees as the units used to measure an angle, where $1/360$ of any circle is 1 degree and an angle that 'cuts' $n/360$ out of any circle whose center is at the angle's vertex has a measure of n degrees. Angle measures are limited to whole numbers.
- 4.7(C) determine the approximate measures of angles in degrees to the nearest whole num. using a protractor
- 4.7(D) draw an angle with a given measure
- 4.7(E) determine the measure of an unknown angle formed by two non-overlapping adjacent angles given one or both angle measures

Unit 9: Measurement Units & Conversions

- 4.5(C) use models to determine the formulas for the perimeter of a rectangle, including the special form for perimeter of a square & the area of a rectangle
- 4.5(D) solve problems related to perimeter and area of rectangles where dimensions are whole numbers

4th Nine Weeks**Unit 9: Measurement Units & Conversions**

- 4.8(A) identify relative sizes of measurement units within the customary and metric systems
- 4.8(B) convert measurements within the same measurement system, customary or metric, from a smaller unit into a larger unit or a larger unit into a smaller unit when given other equivalent measures represented in a table
- 4.8(C) solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate.

Unit 10: Data Analysis

- 4.9(A) represent data on a frequency table, dot plot, or stem-and-leaf plot marked w/whole num. and fractions
- 4.9(B) solve one- and two-step problems using data in whole number, decimal, and fraction form in a frequency table, dot plot, or stem-and-leaf plot