

## 6th Grade Arithmetic (with QuickTables)

This course covers the topics shown below.

Students navigate learning paths based on their level of readiness.

Institutional users may customize the scope and sequence to meet curricular needs.

Curriculum (184 topics + 38 additional topics)

- Whole Numbers (69 topics)
  - Expanded Form and Numeral Translation (6 topics)
    - Whole number place value: Problem type 1
    - Whole number place value: Problem type 2
    - Expanded form
    - Numeral translation: Problem type 1
    - Numeral translation: Problem type 2
    - Adding or subtracting 10, 100, or 1000
  - Addition and Subtraction (15 topics)
    - One-digit addition with regrouping
    - Addition of 3 or 4 one-digit numbers
    - Adding a 2-digit number and a 1-digit number with regrouping
    - Adding 2-digit numbers without regrouping
    - Adding 2-digit numbers with regrouping a ten
    - Adding with regrouping a hundred
    - Addition of large numbers
    - Finding the value of a collection of coins
    - Finding the value of a collection of bills and coins
    - Subtracting a 1-digit number from a 2-digit number
    - Subtraction of 2-digit numbers without regrouping
    - Subtraction of 2-digit numbers with regrouping
    - Subtraction with multiple regrouping steps
    - Subtraction and regrouping with zeros
    - Word problem with addition or subtraction of whole numbers
  - Multiplication and Division (27 topics)
    - Multiplication as repeated addition
    - One-digit multiplication
    - Multiplication by 10, 100, and 1000
    - Understanding multiplication of a one-digit number with a larger number
    - Multiplying 2-digit and 1-digit numbers without regrouping
    - Multiplying with regrouping
    - Introduction to multiplication of large numbers
    - Multiplication with trailing zeros: Problem type 1
    - Multiplication with trailing zeros: Problem type 2
    - Multiplication of large numbers
    - Using multiplication to find the number of squares
    - Using addition and multiplication to count the objects on a grid
    - Multiples: Problem type 1
    - Multiples: Problem type 2
    - Division facts
    - Division without regrouping
    - Division with regrouping
    - Division with trailing zeros: Problem type 1
    - Division with trailing zeros: Problem type 2
    - Division with remainder involving quotients with intermediate zeros: Problem type 2
    - Quotient with remainder: 1-digit divisor, 2-digit dividend
    - Word problem on quotient and remainder
    - Quotient with remainder: 1-digit divisor, 3-digit dividend
    - Quotient with remainder: 2-digit divisor, 3-digit dividend
    - Word problem with multiplication or division of whole numbers
    - Word problem with division of whole numbers and rounding: Problem type 2
    - Word problem with multiplication and addition or subtraction of whole numbers
  - Rounding, Estimation, and Order of Operations (13 topics)
    - Introduction to inequalities
    - Ordering large numbers
    - Rounding to tens or hundreds
    - Rounding to hundreds or thousands
    - Rounding to thousands, ten thousands, or hundred thousands
    - Estimating a sum of whole numbers: Problem type 2

- Estimating a difference of whole numbers: Problem type 2
  - Estimating a product
  - Estimating a quotient
  - Introduction to parentheses
  - Introduction to order of operations
  - Order of operations with whole numbers
  - Order of operations with whole numbers and grouping symbols
- Factors and Prime Numbers (8 topics)
  - Even and odd numbers
  - Divisibility rules for 2, 5, and 10
  - Factors
  - Prime numbers
  - Prime factorization
  - Greatest common factor of 2 numbers
  - Least common multiple of 2 numbers
  - Word problem with common multiples
- Fractions (32 topics)
  - Equivalent Fractions (5 topics)
    - Introduction to fractions
    - Understanding equivalent fractions
    - Equivalent fractions
    - Introduction to simplifying a fraction
    - Simplifying a fraction
  - Ordering and Plotting Fractions (5 topics)
    - Ordering fractions with the same denominator
    - Ordering fractions with the same numerator
    - Using a common denominator to order fractions
    - Fractional position on a number line
    - Plotting fractions on a number line
  - Operations with Fractions (12 topics)
    - Addition or subtraction of fractions with the same denominator
    - Addition or subtraction of unit fractions
    - Introduction to addition or subtraction of fractions with different denominators
    - Addition or subtraction of fractions with different denominators
    - Fractional part of a circle
    - The reciprocal of a number
    - Product of a unit fraction and a whole number
    - Introduction to fraction multiplication
    - Product of a fraction and a whole number: Problem type 1
    - Fraction multiplication
    - Multi-step word problem involving fractions and multiplication
    - Fraction division
  - Mixed Numbers (10 topics)
    - Writing a mixed number and an improper fraction for a shaded region
    - Writing an improper fraction as a mixed number
    - Writing a mixed number as an improper fraction
    - Addition or subtraction of mixed numbers with the same denominator
    - Mixed number addition with the same denominator and renaming
    - Mixed number subtraction with the same denominator and renaming
    - Addition or subtraction of mixed numbers with different denominators
    - Mixed number multiplication: Problem type 1
    - Mixed number multiplication: Problem type 2
    - Mixed number division
- Decimals (29 topics)
  - Place Value and Converting (13 topics)
    - Writing a decimal and a fraction for a shaded region
    - Decimal place value: Tenths and hundredths
    - Decimal place value: Hundreds to ten thousandths
    - Rounding decimals
    - Introduction to ordering decimals
    - Ordering decimals
    - Converting a decimal to a fraction: Basic
    - Converting a decimal to a proper fraction in simplest form: Advanced
    - Converting a fraction with a denominator of 10, 100, or 1000 to a decimal
    - Converting a fraction to a terminating decimal
    - Converting a fraction to a repeating decimal

- Converting a decimal to a mixed number
- Converting a mixed number to a decimal
- Operations with Decimals (16 topics)
  - Addition with money
  - Addition of aligned decimals
  - Decimal addition with 3 numbers
  - Subtraction of aligned decimals
  - Subtraction with money
  - Word problem with one decimal operation: Problem type 1
  - Word problem with one decimal operation: Problem type 2
  - Multiplication of a decimal by a power of ten
  - Multiplying a decimal by a whole number
  - Decimal multiplication: Problem type 1
  - Decimal multiplication: Problem type 2
  - Word problem with multiple decimal operations: Problem type 1
  - Division of a decimal by a power of ten
  - Division of a decimal by a whole number
  - Division of a decimal by a 2-digit decimal
  - Word problem with multiple decimal operations: Problem type 2
- Measurement and Geometry (22 topics)
  - Customary Measurement (5 topics)
    - U.S. Customary unit conversion with whole number values
    - U.S. Customary unit conversion with whole number values: Two-step conversion
    - U.S. Customary unit conversion with mixed number values: One-step conversion
    - Conversions involving measurements in feet and inches
    - Adding measurements in feet and inches
  - Metric Measurement (3 topics)
    - Metric distance conversion with whole number values
    - Metric mass or volume conversion with whole number values
    - Metric distance conversion with decimal values
  - Time (5 topics)
    - Time unit conversion with whole number values
    - Introduction to adding time
    - Adding time
    - Introduction to elapsed time
    - Elapsed time
  - Perimeter and Area (6 topics)
    - Perimeter and area on a grid
    - Perimeter of a square or a rectangle
    - Perimeter of a polygon
    - Area of a square or a rectangle
    - Finding the missing length in a figure
    - Area of a piecewise rectangular figure
  - Volume and Surface Area (3 topics)
    - Volume of a rectangular prism made of unit cubes
    - Volume of a rectangular prism
    - Surface area of a cube or a rectangular prism
- Proportions and Percents (14 topics)
  - Proportions (4 topics)
    - Writing ratios for real-world situations
    - Solving a word problem on proportions using a unit rate
    - Word problem with powers of ten
    - Word problem on rates
  - Percents (10 topics)
    - Finding the percentage of a grid that is shaded
    - Converting between percentages and decimals
    - Converting a percentage to a fraction in simplest form
    - Converting a fraction to a percentage: Denominator of 20, 25, or 50
    - Finding a percentage of a whole number without a calculator: Basic
    - Writing a ratio as a percentage without a calculator
    - Finding the sale price without a calculator given the original price and percent discount
    - Word problem on percentage: Problem type 2
    - Word problem on percentage: Problem type 3
    - Finding simple interest without a calculator

- Signed Numbers and Exponents (18 topics)
  - Integers and Signed Numbers (10 topics)
    - Reading the temperature from a thermometer
    - Plotting integers on a number line
    - Absolute value of a number
    - Integer addition: Problem type 1
    - Integer addition: Problem type 2
    - Integer subtraction: Problem type 1
    - Integer subtraction: Problem type 2
    - Integer subtraction: Problem type 3
    - Integer multiplication and division
    - Signed decimal addition and subtraction
  - Exponents and Square Roots (8 topics)
    - Introduction to exponents
    - Power of 10: Positive exponent
    - Power of 10: Negative exponent
    - Scientific notation with a positive exponent
    - Scientific notation with a negative exponent
    - Evaluating expressions with exponents: Problem type 1
    - Square root of a perfect square
    - Estimating a square root
  
- Other Topics Available(\*) (38 additional topics)
  - Whole Numbers (5 topics)
    - Expanded form with zeros
    - Divisibility rules for 3 and 9
    - Fact families for addition and subtraction
    - Fact families for multiplication and division
    - Finding the next terms of a sequence with whole numbers
  - Measurement and Geometry (17 topics)
    - Measuring length to the nearest inch
    - Measuring length to the nearest quarter or half inch
    - U.S. Customary unit conversion with mixed number values: Two-step conversion
    - Metric conversion with decimal values: Two-step problem
    - Telling time and determining a.m. or p.m.
    - Reading a calendar
    - Word problem with clocks
    - Interpreting a bar graph
    - Interpreting a double bar graph
    - Interpreting a line graph
    - Interpreting a circle graph or pie chart
    - Average of two numbers
    - Mean of a data set
    - Area of a triangle
    - Area of a parallelogram
    - Circumference of a circle
    - Circumference and area of a circle
  - Proportions and Percents (1 topics)
    - Word problem with inverse proportion
  - Signed Numbers and Exponents (15 topics)
    - Signed decimal addition and subtraction with 3 numbers
    - Signed fraction addition or subtraction: Basic
    - Signed fraction multiplication: Advanced
    - Operations with absolute value: Problem type 2
    - Evaluating expressions with exponents: Problem type 2
    - Order of operations with integers and exponents
    - Ordering numbers with positive exponents
    - Ordering numbers with negative exponents
    - Evaluating an expression with a negative exponent: Positive fraction base
    - Evaluating an expression with a negative exponent: Negative integer base
    - Square root of a rational perfect square
    - Simplifying the square root of a whole number less than 100
    - Cube root of an integer
    - Square root addition or subtraction
    - Square root multiplication: Advanced

**\*Other Topics Available** By default, these topics are NOT included in the course, but can be added using the content editor in the Teacher Module.

**QuickTables** ALEKS QuickTables is a research-based, math fact mastery program for multiplication, division, addition, and subtraction for grades 3 and up. The online program offers ongoing assessment, learning, review, and visual tracking of student progress.