ALEKS®

Focus on Middle School Foundations I

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 (134 topics + 729 additional topics)

- Whole Numbers (76 topics)
  - Place Value and Numeral Translation (1 topics)
    - Whole number place value: Problem type 1
  - Addition and Subtraction (23 topics)
    - One-digit addition with regrouping
    - Addition of 3 or 4 one-digit numbers
    - Adding 2-digit numbers without regrouping
    - Adding a 2-digit number and a 1-digit number with regrouping
    - Adding 2-digit numbers with regrouping a ten
    - Adding multiples of 10 and 100
    - Adding 2-digit numbers with regrouping a hundred
    - Adding 3 or 4 numbers with two-digits with regrouping
    - Adding 3-digit numbers with regrouping
    - Adding 3 numbers with two, three, and four-digits
    - Subtracting a 1-digit number from a 2-digit number
    - Subtraction of 2-digit numbers without regrouping
    - Subtracting multiples of 10 and 100
    - Subtraction involving 3-digit numbers without regrouping
    - Subtraction of 2-digit numbers with regrouping
    - Subtraction with multiple regrouping steps involving 3-digit numbers
    - Subtraction with multiple regrouping steps involving 4-digit numbers
    - Subtraction and regrouping with zeros
    - Fact families for addition and subtraction
    - Word problem with addition or subtraction of whole numbers
    - Describing an increasing or decreasing pattern from a table of values
    - Perimeter of a polygon
    - Perimeter of a square or a rectangle
  - Multiplication (19 topics)
    - Multiplying one-digit numbers: Problem type 2
    - Multiplication as repeated addition
    - Using multiplication to find the number of squares
    - Multiplying 2-digit and 1-digit numbers without regrouping
    - Introduction to multiplication with a trailing zero
    - Multiplication by 10, 100, and 1000
    - Multiplication with trailing zeros: Problem type 1
    - Multiplying 2-digit and 1-digit numbers with regrouping: Problem type 2
    - Multiplying multi-digit and 1-digit numbers with regrouping
    - Area of a rectangle on a grid
    - Area of a rectangle with one-digit side lengths
    - Area of a rectangle with two-digit by one-digit side lengths
    - Introduction to multiplication of large numbers
    - Multiplication of large numbers
    - Multiplication with trailing zeros: Problem type 2
    - Multiples: Problem type 1
    - Multiples: Problem type 2
    - Introduction to properties of addition
    - Introduction to properties of multiplication
  - Division (15 topics)
    - Division facts: Problem type 2
    - Fact families for multiplication and division
    - Division of whole numbers given in fractional form
    - Function tables with one-step rules
    - Division without regrouping
    - Division with regrouping: 1-digit divisor, 2-digit dividend
    - Quotient with remainder: 1-digit divisor, 2-digit dividend
    - Whole number division: 2-digit by 2-digit, no remainder
    - Word problem with multiplication or division of whole numbers
    - Word problem with multiplication and addition or subtraction of whole numbers
    - Division with trailing zeros: Problem type 1

        - Division with regrouping: 1-digit divisor, 3-digit or 4-digit dividend
        - Division with trailing zeros: Problem type 2
        - Whole number division: 3-digit by 2-digit, no remainder
        - Division with no remainder and a two-digit divisor: Problem type 2

    - Ordering and Estimation (7 topics)
        - Introduction to inequalities
        - Ordering large numbers
        - Rounding to tens or hundreds
        - Rounding to hundreds or thousands
        - Estimating a sum of whole numbers: Problem type 1
        - Estimating a difference of whole numbers: Problem type 1
        - Estimating a product

    - Exponents and Order of Operations (3 topics)
        - Introduction to parentheses
        - Introduction to order of operations
        - Order of operations with whole numbers

    - Prime Numbers, Factors, and Multiples (4 topics)
        - Even and odd numbers
        - Divisibility rules for 2, 5, and 10
        - Factors
        - Prime numbers

    - Evaluating and Writing Expressions (2 topics)
        - Evaluating an algebraic expression: Whole number addition or subtraction
        - Evaluating an algebraic expression: Whole number multiplication or division

    - Introduction to One-Step Equations (2 topics)
        - Additive property of equality with whole numbers
        - Introduction to solving an equation with multiplication or division

- Decimals (19 topics)

    - Place Value and Ordering (4 topics)
        - Decimal place value: Tenths and hundredths
        - Reading decimal position on a number line: Tenths
        - Reading decimal position on a number line: Hundredths
        - Introduction to ordering decimals

    - Relating Fractions and Decimals (4 topics)
        - Introduction to non-unit fractions
        - Writing a decimal and a fraction for a shaded region
        - Converting a fraction with a denominator of 10 or 100 to a decimal
        - Converting a decimal to a proper fraction without simplifying: Basic

    - Addition and Subtraction (8 topics)
        - Addition of decimals: Vertically aligned
        - Decimal addition with 2 numbers
        - Subtraction of aligned decimals
        - Decimal subtraction: Basic
        - Decimal subtraction: Advanced
        - Rounding decimals
        - Addition with money
        - Subtraction with money

    - Multiplication (3 topics)
        - Multiplication of a decimal by a power of ten
        - Multiplying a decimal less than 1 by a whole number
        - Multiplying a decimal by a whole number

- Fractions (25 topics)

    - Equivalent Fractions (8 topics)
        - Understanding equivalent fractions: Problem type 1
        - Modeling and writing equivalent fractions
        - Conversions involving division in fractional form and whole numbers
        - Introduction to finding equivalent fractions: Multiplying
        - Introduction to finding equivalent fractions: Dividing
        - Equivalent fractions
        - Introduction to simplifying a fraction
        - Simplifying a fraction

- Plotting and Ordering Fractions (4 topics)
  - Position of fractions on a number line
  - Plotting fractions using a number line
  - Comparing fractions with the same denominator
  - Comparing fractions by finding a common denominator
- Mixed Numbers and Improper Fractions (2 topics)
  - Writing an improper fraction as a mixed number
  - Writing a mixed number as an improper fraction
- Addition and Subtraction with Fractions (5 topics)
  - Addition or subtraction of fractions with the same denominator
  - Addition or subtraction of fractions with the same denominator and simplification
  - Word problem involving addition or subtraction of fractions with the same denominator
  - Writing unit fractions with a common denominator to add or subtract
  - Writing fractions with a common denominator to add or subtract
- Multiplication with Fractions (6 topics)
  - Product of a unit fraction and a whole number
  - Product of a fraction and a whole number: Problem type 1
  - Product of a fraction and a whole number: Problem type 2
  - Word problem involving multiplying a fraction and a whole number
  - Introduction to fraction multiplication
  - Fraction multiplication

- Lines, Angles, and Polygons (4 topics)
  - Segments, Rays, and Lines (1 topics)
    - Identifying parallel and perpendicular lines
  - Classifying and Measuring Angles (1 topics)
    - Acute, obtuse, and right angles
  - Classifying Triangles (2 topics)
    - Acute, obtuse, and right triangles
    - Classifying scalene, isosceles, and equilateral triangles by side lengths
- Perimeter, Area, and Volume (6 topics)
  - Perimeter (2 topics)
    - Finding the missing length in a figure
    - Finding an unknown side length of a polygon given the perimeter
  - Area of Composite Figures (3 topics)
    - Finding the area of a composite figure on a grid
    - Introduction to area of a piecewise rectangular figure
    - Word problem on finding the area of a piecewise rectangular figure
  - Volume of Rectangular Prisms (1 topics)
    - Volume of a rectangular prism
- Data Analysis and Probability (4 topics)
  - Frequency Tables (1 topics)
    - Interpreting a tally table
  - Graphs of Data (3 topics)
    - Constructing a line plot
    - Constructing a bar graph for non-numerical data
    - Interpreting a bar graph

- Other Topics Available(*) (729 additional topics)
  - Whole Numbers (57 topics)
    - Whole number place value: Problem type 2
    - Comparing place values of digits in a whole number: Problem type 1
    - Numeral translation: Problem type 1
    - Numeral translation: Problem type 2
    - Expanded form: 2 and 3-digit numbers
    - Expanded form: 4 and 5-digit numbers
    - Expanded form with zeros
    - Perimeter of a rectangle on a grid
    - Understanding multiplication of a one-digit number with a larger number

- Introduction to multiplication using an area model
- Multiplying a multi-digit and a 1-digit number using an area model
- Division involving zero
- Writing a division sentence for equal groups
- Writing a division sentence for equal groups and a remainder
- Word problem on unit rates associated with ratios of whole numbers: Whole number answers
- Quotient with remainder: 1-digit divisor, 3-digit or 4-digit dividend
- Division involving quotients with intermediate zeros: Problem type 1
- Division involving quotients with intermediate zeros: Problem type 2
- Division with remainder involving quotients with intermediate zeros: Problem type 1
- Division with remainder involving quotients with intermediate zeros: Problem type 2
- Division with remainder and a two-digit divisor: Problem type 1
- Division with remainder and a two-digit divisor: Problem type 2
- Word problem on quotient and remainder
- Word problem with division of whole numbers and rounding: Problem type 1
- Word problem with division of whole numbers and rounding: Problem type 2
- Comparing a numerical expression with a number
- 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 quotient
- Writing expressions using exponents
- Introduction to exponents
- Power of 10: Positive exponent
- Comparing numerical expressions with parentheses
- Order of operations with whole numbers and grouping symbols
- Order of operations with whole numbers and exponents: Basic
- Order of operations with whole numbers and exponents: Advanced
- Divisibility rules for 3 and 9
- Prime factorization
- Greatest common factor of 2 numbers
- Greatest common factor of 3 numbers
- Least common multiple of 2 numbers
- Least common multiple of 3 numbers
- Word problem involving the least common multiple of 2 numbers
- Word problem with common multiples
- Evaluating an algebraic expression: Whole numbers with two operations
- Evaluating a formula
- Evaluating an algebraic expression: Whole numbers with one operation and an exponent
- Evaluating an algebraic expression: Whole number operations and exponents
- Writing a one-step expression for a real-world situation
- Translating a phrase into a one-step expression
- Translating a phrase into a two-step expression
- Identifying solutions to a one-step linear equation: Problem type 1
- Identifying solutions to a one-step linear equation: Problem type 2
- Writing an equation and solving a multiplicative comparison word problem
- Multiplicative property of equality with whole numbers
- Translating a sentence into a one-step equation

- Decimals (42 topics)
  - Decimal place value: Hundreds to ten thousandths
  - Writing a decimal number less than 1 given its name
  - Writing a decimal number greater than 1 given its name
  - Writing a decimal number given its name: Advanced
  - Understanding decimal position on a number line using zoom: Hundredths
  - Understanding decimal position on a number line using zoom: Thousandths
  - Ordering decimals
  - Converting a fraction with a denominator of 100 or 1000 to a decimal
  - Converting a decimal to a proper fraction without simplifying: Advanced
  - Decimal addition with 3 numbers
  - Decimal addition and subtraction with 3 or more numbers
  - Estimating a decimal sum or difference
  - Word problem with addition or subtraction of 2 decimals
  - Word problem with addition of 3 or 4 decimals and whole numbers
  - Word problem with subtraction of a whole number and a decimal: Regrouping with zeros
  - Multiplying decimals less than 1: Problem type 1
  - Decimal multiplication: Problem type 1
  - Decimal multiplication: Problem type 2
  - Multiplication of a decimal by a power of 0.1
  - Multiplying decimals less than 1: Problem type 2
  - Estimating a product of decimals
  - Word problem with multiplication of a decimal and a whole number
  - Word problem with multiple decimal operations: Problem type 1
  - Word problem with multiplication of two decimals

- Division of a decimal by a power of ten
- Division of a decimal by a power of 0.1
- Whole number division with decimal answers
- Division of a decimal by a whole number
- Division of a decimal by a 1-digit decimal: Problem type 1
- Division of a decimal by a 2-digit decimal
- Decimal division with rounding
- Average of two numbers
- Word problem with division of a decimal and a whole number
- Word problem with multiple decimal operations: Problem type 2
- Word problem with division of two decimals
- Squaring decimal bases: Products greater than 0.1
- Exponents and decimals: Products less than 0.1
- Order of operations with decimals: Problem type 1
- Order of operations with decimals: Problem type 2
- Order of operations with decimals: Problem type 3
- Introduction to scientific notation with positive exponents
- Scientific notation with a positive exponent

- Fractions (63 topics)
  - Understanding equivalent fractions: Problem type 2
  - Comparing fractions with the same numerator
  - Writing a mixed number and an improper fraction for a shaded region
  - Position of mixed numbers on a number line
  - Plotting mixed numbers on a number line
  - Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal
  - Converting a mixed number with a denominator of 2, 4, or 5 to a decimal
  - Converting a fraction to a terminating decimal: Basic
  - Converting a fraction to a terminating decimal: Advanced
  - Converting a fraction to a repeating decimal: Basic
  - Converting a fraction to a repeating decimal: Advanced
  - Using a calculator to convert a fraction to a rounded decimal
  - Converting a mixed number to a terminating decimal: Basic
  - Converting a mixed number to a terminating decimal: Advanced
  - Converting a fraction or mixed number to a rounded decimal
  - Converting a decimal to a proper fraction in simplest form: Basic
  - Converting a decimal to a proper fraction in simplest form: Advanced
  - Converting a decimal to a mixed number and an improper fraction without simplifying
  - Converting a decimal to a mixed number and an improper fraction in simplest form: Basic
  - Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced
  - Ordering fractions and decimals
  - Decomposing a fraction into a sum of fractions with the same denominator
  - Finding the LCD of two fractions
  - Addition or subtraction of fractions with different denominators
  - Addition and subtraction of 3 fractions with different denominators
  - Word problem involving addition or subtraction of fractions with different denominators
  - Fractional part of a circle
  - Addition or subtraction of mixed numbers with the same denominator
  - Addition of mixed numbers with the same denominator and renaming: Problem type 1
  - Addition of mixed numbers with the same denominator and renaming: Problem type 2
  - Subtraction of mixed numbers with the same denominator and renaming: Problem type 1
  - Subtraction of mixed numbers with the same denominator and renaming: Problem type 2
  - Addition or subtraction of mixed numbers with different denominators without renaming
  - Addition of mixed numbers with different denominators and renaming
  - Subtraction of mixed numbers with different denominators and renaming
  - Addition and subtraction of 3 mixed numbers with different denominators
  - Word problem involving addition or subtraction of mixed numbers with different denominators
  - Multiplication of 3 fractions
  - Modeling multiplication of proper fractions
  - Word problem involving fractions and multiplication
  - Multi-step word problem involving fractions and multiplication
  - Determining if a quantity is increased or decreased when multiplied by a fraction
  - The reciprocal of a number
  - Division involving a whole number and a unit fraction
  - Division involving a whole number and a fraction
  - Fraction division
  - Fact families for multiplication and division of fractions
  - Modeling division of a whole number by a fraction
  - Word problem involving fractions and division
  - Multiplying mixed numbers: Problem type 1
  - Multiplying mixed numbers: Problem type 2
  - Multiplying a mixed number and a whole number: Problem type 1
  - Multiplying a mixed number and a whole number: Problem type 2
  - Division with a mixed number and a whole number

- Mixed number division
- Word problem involving multiplication or division with mixed numbers
- Exponents and fractions
- Order of operations with fractions: Problem type 1
- Order of operations with fractions: Problem type 2
- Order of operations with fractions: Problem type 3
- Complex fraction without variables: Problem type 1
- Addition or subtraction with a decimal and a mixed number
- Multiplication with a decimal and a fraction

- Ratios, Proportions, and Measurement (73 topics)
  - Writing ratios using different notations
  - Writing ratios for real-world situations
  - Identifying statements that describe a ratio
  - Simplifying a ratio of whole numbers: Problem type 1
  - Simplifying a ratio of decimals
  - Finding a unit price
  - Using tables to compare ratios
  - Computing unit prices to find the better buy
  - Word problem on unit rates associated with ratios of whole numbers: Decimal answers
  - Solving a word problem on proportions using a unit rate
  - Solving a one-step word problem using the formula d = rt
  - Finding missing values in a table of equivalent ratios
  - Using a table of equivalent ratios to find a missing quantity in a ratio
  - Solving a proportion of the form x/a=b/c: Basic
  - Solving a proportion of the form x/a = b/c
  - Word problem on proportions: Problem type 1
  - Word problem on proportions: Problem type 2
  - Word problem with powers of ten
  - Identifying congruent shapes on a grid
  - Identifying similar or congruent shapes on a grid
  - Finding a missing side length given two similar triangles
  - Relationships about ratios within and between similar triangles
  - Similar polygons
  - Similar right triangles
  - Indirect measurement
  - Finding lengths using scale models
  - Finding a scale factor: Same units
  - Using a scale drawing to find actual area
  - Reproducing a scale drawing at a different scale
  - Choosing a measuring tool
  - Choosing U.S. Customary measurement units
  - Measuring length to the nearest inch
  - Measuring length to the nearest quarter or half inch
  - U.S. Customary length conversion with whole number values
  - Conversions involving measurements in feet and inches
  - Adding measurements in feet and inches
  - U.S. Customary length conversions involving rounding decimals
  - Word problem involving a U.S. Customary length conversion
  - U.S. Customary volume conversion with whole number values
  - U.S. Customary weight conversions 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
  - U.S. Customary unit conversion with mixed number values: Two-step conversion
  - U.S. Customary area unit conversion with whole number values
  - Word problem on area involving conversions of U.S. Customary units: Problem type 1
  - Unit conversions involving acres and hectares
  - Choosing metric measurement units
  - Measuring length to the nearest centimeter
  - Measuring length to the nearest millimeter
  - Finding a rate given a pictorial representation of a real-world situation
  - Metric distance conversion with whole number values
  - Metric distance conversion with decimal values
  - Metric mass or volume conversion with whole numbers
  - Metric conversion with decimal values: Two-step problem
  - Metric area unit conversion with decimal values
  - Time unit conversion with whole number values
  - Word problem involving adding or subtracting time within the hour
  - Introduction to adding time
  - Adding time
  - Word problem on elapsed time within the hour
  - Word problem on elapsed time less than one hour
  - Word problem on elapsed time more than one hour
  - Word problem on elapsed times crossing a.m. and p.m.

- Reading a positive temperature from a thermometer
- Converting between temperatures in Fahrenheit and Celsius
- Simplifying a ratio of whole numbers: Problem type 2
- Solving a word problem involving rates and time conversion
- Converting between metric and U.S. Customary unit systems
- U.S. Customary length conversions involving dimensional analysis
- Converting between compound units: Basic
- Word problem involving U.S. Customary length conversions using dimensional analysis
- Word problem involving a conversion between U.S. Customary units of weight and metric units of mass
- Converting between compound units: Advanced

- Percents (57 topics)
  - Converting a fraction with a denominator of 100 to a percentage
  - Converting a percentage to a fraction with a denominator of 100
  - Finding the percentage of a grid that is shaded
  - Representing benchmark percentages on a grid
  - Introduction to converting a percentage to a decimal
  - Introduction to converting a decimal to a percentage
  - Converting between percentages and decimals
  - Converting a mixed number percentage to a decimal
  - Converting between percentages and decimals in a real-world situation
  - Converting a percentage to a fraction in simplest form
  - Converting a decimal percentage to a fraction
  - Converting a fraction to a percentage: Denominator of 4, 5, or 10
  - Finding benchmark fractions and percentages for a figure
  - Converting a fraction to a percentage: Denominator of 20, 25, or 50
  - Using a calculator to convert a fraction to a rounded percentage
  - Converting a fraction to a percentage in a real-world situation
  - Writing a ratio as a percentage
  - Writing a ratio as a percentage without a calculator
  - Finding the rate of a tax or commission
  - Making a reasonable inference based on proportion statistics
  - Finding a percentage of a whole number
  - Finding a percentage of a whole number without a calculator: Basic
  - Finding a percentage of a whole number without a calculator: Advanced
  - Finding a percentage of a total amount: Real-world situations
  - Finding a percentage of a total amount without a calculator: Sales tax, commission, discount
  - Estimating a tip without a calculator
  - Finding a percentage of a total amount in a circle graph
  - Making part-to-part and equivalence comparisons given a circle graph
  - Applying the percent equation: Problem type 1
  - Applying the percent equation: Problem type 2
  - Finding the total amount given the percentage of a partial amount
  - Interpreting a circle graph or pie chart
  - Computations from a circle graph
  - Finding the multiplier to give a final amount after a percentage increase or decrease
  - Finding the final amount given the original amount and a percentage increase or decrease
  - Finding the sale price given the original price and percent discount
  - Finding the sale price without a calculator given the original price and percent discount
  - Finding the total cost including tax or markup
  - Combined effect of more than one markup or discount
  - Finding the original amount given the result of a percentage increase or decrease
  - Finding the original price given the sale price and percent discount
  - Finding the percentage increase or decrease: Basic
  - Finding the percentage increase or decrease: Advanced
  - Comparing discounts
  - Calculations involving paying for college
  - Computing percentages for categories of a budget
  - Comparing annual salaries of different occupations
  - Hourly gross pay with overtime
  - Gross pay with commission and salary
  - Calculations involving purchases with debit and credit cards
  - Comparing costs of checking accounts
  - Balancing a check register
  - Reading a credit report
  - Understanding the impact of a credit score
  - Finding simple interest without a calculator
  - Finding the interest and future value of a simple interest loan or investment
  - Finding the principal, rate, or time of a simple interest loan or investment

- Integers and Rational Numbers (83 topics)
  - Plotting integers on a number line
  - Plotting opposite integers on a number line
  - Plotting rational numbers on a number line

- Reading the temperature from a thermometer
- Ordering integers
- Comparing integers using a number line
- Writing a signed number for a real-world situation
- Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1
- Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2
- Comparing signed numbers relating to a real-world situation
- Finding opposites of integers
- Absolute value of a number
- Finding all numbers with a given absolute value
- Integer addition: Problem type 1
- Integer addition: Problem type 2
- Identifying a sum as a point located a given distance from another point
- Identifying relative change when combining two quantities
- Integer subtraction: Problem type 1
- Integer subtraction: Problem type 2
- Integer subtraction: Problem type 3
- Addition and subtraction with 3 integers
- Addition and subtraction with 4 or 5 integers
- Word problem with addition or subtraction of integers
- Operations with absolute value: Problem type 1
- Operations with absolute value: Problem type 2
- Computing the distance between two integers on a number line
- Computing and understanding distances between integers on a number line
- Finding a point on a number line given the length of a segment and another point
- Integer multiplication and division
- Multiplication of 3 or 4 integers
- Word problem with multiplication or division of integers
- Exponents and integers: Problem type 1
- Order of operations with integers
- Order of operations with integers and exponents
- Evaluating expressions with exponents of zero
- Power of 10: Negative exponent
- Introduction to scientific notation with negative exponents
- Scientific notation with a negative exponent
- Converting between scientific notation and standard form in a real-world situation
- Signed decimal addition and subtraction
- Signed decimal addition and subtraction with 3 numbers
- Signed fraction addition or subtraction: Basic
- Signed fraction subtraction involving double negation
- Signed fraction addition or subtraction: Advanced
- Addition and subtraction of 3 fractions involving signs
- Computing distances between decimals on a number line
- Signed decimal multiplication
- Signed decimal division
- Identifying equivalent signed fractions
- Signed fraction multiplication: Basic
- Signed fraction multiplication: Advanced
- Signed fraction division
- Evaluating a linear expression: Integer multiplication with addition or subtraction
- Evaluating a quadratic expression: Integers
- Evaluating a linear expression: Signed decimal addition and subtraction
- Evaluating a linear expression: Signed decimal multiplication with addition or subtraction
- Evaluating a linear expression: Signed fraction multiplication with addition or subtraction
- Identifying numbers as integers or non-integers
- Identifying rational decimal numbers
- Interpreting a Venn diagram of 2 sets
- Interpreting a Venn diagram of 3 sets
- Constructing a Venn diagram to classify rational numbers
- Constructing a Venn diagram to describe relationships between sets of rational numbers
- Introduction to the distributive property
- Understanding the distributive property
- Introduction to factoring with numbers
- Factoring a sum or difference of whole numbers
- Multiplying a constant and a linear monomial
- Distributive property: Whole number coefficients
- Distributive property: Fractional coefficients
- Factoring a linear binomial
- Identifying like terms
- Combining like terms: Whole number coefficients
- Properties of addition
- Properties of real numbers
- Combining like terms: Integer coefficients
- Combining like terms: Decimal coefficients

- Combining like terms: Fractional coefficients
- Using algebra tiles to determine if two expressions are equivalent
- Identifying parts in an algebraic expression
- Identifying equivalent algebraic expressions
- Using distribution and combining like terms to simplify: Univariate
- Identifying properties used to simplify an algebraic expression

- Equations and Inequalities (48 topics)
  - Additive property of equality with decimals
  - Additive property of equality with fractions and mixed numbers
  - Additive property of equality with integers
  - Additive property of equality with signed fractions
  - Multiplicative property of equality with decimals
  - Multiplicative property of equality with whole numbers: Fractional answers
  - Multiplicative property of equality with fractions
  - Multiplicative property of equality with integers
  - Plotting the solution for a one-step equation on a number line
  - Multiplicative property of equality with signed fractions
  - Distinguishing between expressions and equations
  - Identifying solutions to a linear equation in one variable: Two-step equations
  - Using two steps to solve an equation with whole numbers
  - Additive property of equality with a negative coefficient
  - Solving a two-step equation with integers
  - Plotting the solution for a two-step equation on a number line
  - Introduction to solving an equation with parentheses
  - Solving a multi-step equation given in fractional form
  - Introduction to using substitution to solve a linear equation
  - Introduction to solving a rational equation
  - Introduction to solving an equation with variables on the same side
  - Solving a linear equation with several occurrences of the variable: Variables on the same side
  - Introduction to solving a linear equation with a variable on each side
  - Solving a fraction word problem using a linear equation of the form Ax = B
  - Choosing stories that can be represented by given one-step equations
  - Translating a sentence into a multi-step equation
  - Writing an equation of the form Ax + B = C to solve a word problem
  - Comparing arithmetic and algebraic solutions to a word problem
  - Choosing stories that can be represented by given two-step equations
  - Solving a word problem with two unknowns using a linear equation
  - Solving for a variable in terms of other variables using addition or subtraction: Basic
  - Solving for a variable in terms of other variables using multiplication or division: Basic
  - Translating a sentence by using an inequality symbol
  - Translating a sentence into a one-step inequality
  - Introduction to identifying solutions to an inequality
  - Writing an inequality for a real-world situation
  - Graphing a linear inequality on the number line
  - Writing an inequality given a graph on the number line
  - Graphing a compound inequality on the number line
  - Identifying solutions to a one-step linear inequality
  - Additive property of inequality with whole numbers
  - Additive property of inequality with integers
  - Multiplicative property of inequality with whole numbers
  - Multiplicative property of inequality with integers
  - Solving a two-step linear inequality with whole numbers
  - Translating a sentence into a multi-step inequality
  - Solving a word problem using a one-step linear inequality
  - Solving a word problem using a two-step linear inequality

- Graphs and Functions (58 topics)
  - Reading a point in quadrant 1
  - Plotting a point in quadrant 1
  - Reading a point in the coordinate plane
  - Plotting a point in the coordinate plane
  - Plotting a point in quadrant 1: Mixed number coordinates
  - Plotting a point in the coordinate plane: Mixed number coordinates
  - Naming the quadrant or axis of a point given its graph
  - Naming the quadrant or axis of a point given its coordinates
  - Naming the quadrant or axis of a point given the signs of its coordinates
  - Finding distances between points that share a common coordinate given the graph
  - Finding distances between points that share a common coordinate given their coordinates
  - Making a table and plotting points given a unit rate
  - Graphing whole number functions
  - Function tables with two-step rules
  - Table for a linear equation
  - Table for a linear function

- Writing a function rule given a table of ordered pairs: One-step rules
- Writing a function rule given a table of ordered pairs: Two-step rules
- Identifying solutions to a linear equation in two variables
- Finding a solution to a linear equation in two variables
- Graphing a line in quadrant 1
- Comparing two rules with forms of y=ax and y=x+a
- Graphing a linear equation of the form y = mx
- Graphing a line given its equation in slope-intercept form: Integer slope
- Graphing a line given its equation in slope-intercept form: Fractional slope
- Graphing a vertical or horizontal line
- Finding x- and y-intercepts given the graph of a line on a grid
- Interpreting a line graph
- Finding slope given the graph of a line in quadrant 1 that models a real-world situation
- Classifying slopes given graphs of lines
- Finding slope given the graph of a line on a grid
- Finding slope given two points on a line
- Finding the slopes of horizontal and vertical lines
- Finding outputs of a one-step function that models a real-world situation: Two variable equation
- Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation
- Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation
- Writing an equation to represent a proportional relationship
- Writing and evaluating a function that models a real-world situation: Basic
- Writing and evaluating a function that models a real-world situation: Advanced
- Graphing ordered pairs and writing an equation from a table of values in context
- Writing an equation and drawing its graph to model a real-world situation: Basic
- Writing an equation and drawing its graph to model a real-world situation: Advanced
- Finding the intercepts and rate of change given a graph of a linear function
- Identifying independent and dependent quantities from tables and graphs
- Identifying independent and dependent variables from equations or real-world situations
- Finding where a function is increasing, decreasing, or constant given the graph
- Choosing a graph to fit a narrative: Basic
- Choosing a graph to fit a narrative: Advanced
- Interpreting the graphs of two functions
- Finding the next terms of an arithmetic sequence with whole numbers
- Finding the next terms of an arithmetic sequence with integers
- Identifying arithmetic sequences and finding the common difference
- Finding a specified term of an arithmetic sequence given the first terms
- Finding the next terms of a geometric sequence with whole numbers
- Finding the next terms of a geometric sequence with signed numbers
- Identifying arithmetic and geometric sequences
- Identifying geometric sequences and finding the common ratio
- Finding patterns in shapes

- Lines, Angles, and Polygons (50 topics)
  - Naming segments, rays, and lines
  - Measuring an angle with the protractor
  - Drawing an angle with the protractor
  - Introduction to angle addition
  - Finding an angle measure in a figure with a right or straight angle
  - Finding supplementary and complementary angles
  - Identifying supplementary and vertical angles
  - Finding angle measures given two intersecting lines
  - Identifying corresponding and alternate angles
  - Finding angle measures given two parallel lines cut by a transversal
  - Constructing congruent line segments
  - Constructing an angle bisector
  - Constructing congruent angles
  - Constructing the perpendicular bisector of a line segment
  - Constructing a pair of perpendicular lines
  - Constructing a pair of parallel lines
  - Classifying scalene, isosceles, and equilateral triangles by side lengths or angles
  - Finding an angle measure of a triangle given two angles
  - Finding an angle measure for a triangle with an extended side
  - Finding an angle measure given extended triangles
  - Finding an angle measure given a triangle and parallel lines
  - Identifying and naming congruent parts of congruent triangles
  - Creating triangles from given side lengths: Problem type 1
  - Creating triangles from given side lengths: Problem type 2
  - Using triangle inequality to determine if side lengths form a triangle
  - Determining if a triangle is possible based on given angle measures
  - Drawing triangles with given conditions: Angle measures
  - Drawing triangles with given conditions: Side lengths and angle measures
  - Drawing a circle with a given radius or diameter
  - Drawing triangles with given side lengths using a compass

- Relationship between angle measures and side lengths in a triangle
- Relationship between angle measures and side lengths in two triangles
- Naming polygons
- Drawing and identifying a polygon in the coordinate plane
- Shared attributes among categories of quadrilaterals
- Identifying parallelograms, rectangles, and squares
- Properties of quadrilaterals
- Classifying parallelograms
- Finding the coordinates of a point to make a parallelogram
- Sum of the angle measures of a quadrilateral
- Finding the sum of the interior angle measures of a convex polygon given the number of sides
- Finding the number of sides of a convex polygon given the sum of the measures of the interior angles
- Square root of a perfect square
- Finding all square roots of a number
- Using a calculator to approximate a square root
- Estimating a square root
- Introduction to the Pythagorean Theorem
- Pythagorean Theorem
- Word problem involving the Pythagorean Theorem
- Identifying side lengths that give right triangles

- Transformations (30 topics)
  - Identifying transformations
  - Introduction to translations
  - Translating a point and giving its coordinates: One step
  - Translating a point and giving its coordinates: Two steps
  - Properties of translated figures
  - Determining if figures are related by a translation
  - Translating a polygon
  - Introduction to reflections
  - Reflecting a point across an axis
  - Reflecting a point across both coordinate axes
  - Reflecting a point across an axis and giving its coordinates
  - Finding the coordinates of a point reflected across an axis
  - Finding the coordinates of a point reflected across both axes
  - Reflecting a polygon across the x-axis or y-axis
  - Properties of reflected figures
  - Determining if figures are related by a reflection
  - Reflecting a polygon over a vertical or horizontal line
  - Finding the coordinates of a point reflected across an axis and translated
  - Drawing lines of symmetry
  - Finding an angle of rotation
  - Identifying rotational symmetry and angles of rotation
  - Rotating a point and giving its coordinates
  - Properties of rotated figures
  - Determining if figures are related by a rotation
  - Rotating a figure about the origin
  - Determining if figures are congruent and related by a transformation
  - Dilating a segment and giving the coordinates of its endpoints
  - The effect of dilation on side length
  - Determining if figures are related by a dilation
  - The effect of dilation on area

- Perimeter, Area, and Volume (88 topics)
  - Perimeter of a piecewise rectangular figure
  - Writing algebraic expressions for the perimeter of a figure
  - Sides of polygons having the same perimeter
  - Perimeter of a polygon involving mixed numbers and fractions
  - Area of a rectangle with fractional side lengths
  - Area of a rectangle involving mixed number and fractional side lengths
  - Distinguishing between the area and perimeter of a rectangle
  - Areas of rectangles with the same perimeter
  - Word problem involving the area of a rectangle: Problem type 2
  - Word problem on area involving conversions of U.S. Customary units: Problem type 2
  - Word problem on area involving conversions between systems
  - Estimates and exact answers
  - Writing algebraic expressions for the area of a figure
  - Finding side lengths of rectangles given one dimension and an area or a perimeter
  - Finding side lengths of squares given an area and a perimeter
  - Word problem on optimizing an area or perimeter
  - Finding the perimeter or area of a rectangle in the coordinate plane
  - Area of a parallelogram
  - Finding the area of a right triangle on a grid
  - Finding the area of a right triangle or its corresponding rectangle

- Area of a triangle
- Solving a word problem involving area using a one-step linear inequality: Area and lengths
- Finding the area of a triangle or parallelogram in the coordinate plane
- Finding the area of a trapezoid on a grid by using triangles and rectangles
- Area of a trapezoid
- Area of a piecewise rectangular figure
- Area between two rectangles
- Word problem involving the area between two rectangles
- Area involving rectangles and triangles
- Finding the area of a trapezoid, rhombus, or kite in the coordinate plane
- Introduction to a circle: Diameter, radius, and chord
- Circumference of a circle
- Finding the radius or the diameter of a circle given its circumference
- Informal argument for the formula of the circumference of a circle
- Circumference ratios
- Perimeter involving rectangles and circles
- Area of a circle
- Circumference and area of a circle
- Circumference and area of a circle: Exact answers in terms of pi
- Distinguishing between the area and circumference of a circle
- Informal argument for the formula of the area of a circle
- Area involving rectangles and circles
- Area between two concentric circles
- Word problem involving the area between two concentric circles
- Area involving inscribed figures
- Classifying solids
- Vertices, edges, and faces of a solid
- Identifying geometric shapes that model real-world objects
- Nets of solids
- Counting the cubes in a solid made of cubes
- Side views of a solid made of cubes
- Identifying horizontal and vertical cross sections of solids
- Volume of a rectangular prism made of unit cubes
- Volume of a solid made of cubes with unit fraction edge lengths
- Volume of a rectangular prism with fractional edge lengths
- Writing equivalent expressions for the volume of a rectangular prism
- Word problem involving the volume of a rectangular prism
- Word problem involving the rate of filling or emptying a rectangular prism
- Word problem on volume involving conversions of U.S. Customary units
- Volume of a piecewise rectangular prism
- Word problem involving the volume of a piecewise rectangular prism
- Volume of a triangular prism
- Word problem involving the volume of a triangular prism
- Volume of a pyramid
- Relating the volumes of a rectangular prism and a rectangular pyramid
- Relating the volumes of a triangular prism and a triangular pyramid
- Volume of a cylinder
- Word problem involving the volume of a cylinder
- Word problem involving the rate of filling or emptying a cylinder
- Volume of a cone
- Volume of a cone: Exact answers in terms of pi
- Relating the volumes of a cylinder and a cone
- Word problem involving the volume of a cone
- Surface area of a rectangular prism made of unit cubes
- Surface area of a cube or a rectangular prism
- Distinguishing between surface area and volume
- Using a net to find the surface area of a rectangular prism
- Using a net to find the lateral surface area and total surface area of a rectangular prism
- Word problem involving the surface area of a rectangular prism
- Word problem involving U.S. Customary conversions, surface area, and cost
- Surface area of a piecewise rectangular prism made of unit cubes
- Surface area of a triangular prism
- Using a net to find the surface area of a triangular prism
- Using a net to find the lateral surface area and total surface area of a triangular prism
- Using a net to find the lateral surface area and total surface area of a pyramid
- Surface area of a cylinder
- Surface area of a cylinder: Exact answers in terms of pi
- Word problem involving the surface area of a cylinder

- Data Analysis and Probability (80 topics)
  - Identifying statistical questions
  - Choosing an appropriate method for gathering data: Problem type 1
  - Choosing an appropriate method for gathering data: Problem type 2
  - Introduction to expectation

- Making predictions using experimental data for compound events
- Constructing a frequency distribution for grouped data
- Constructing a frequency distribution for non-grouped data
- Constructing a relative frequency distribution for grouped data
- Constructing a two-way frequency table: Basic
- Constructing a two-way frequency table: Advanced
- Computing a percentage from a table of values
- Making an inference using a two-way frequency table
- Calculating relative frequencies in a contingency table
- Finding if a question can be answered by the data
- Constructing a line plot with fractional values: Fourths
- Making part-to-whole, part-to-part, and equivalence comparisons given a line plot
- Making part-to-whole, part-to-part, and equivalence comparisons given a bar graph
- Interpreting a double bar graph
- Constructing a frequency distribution and a histogram
- Interpreting a histogram
- Introduction to interpreting a pictograph
- Interpreting a pictograph table
- Interpreting a stem-and-leaf plot
- Angle measure in a circle graph
- Constructing a percent bar graph
- Constructing a scatter plot
- Sketching the line of best fit
- Scatter plots and correlation
- Mean of a data set
- Using a model to find the mean
- Understanding the mean graphically: Two bars
- Understanding the mean graphically: Four or more bars
- Finding the mean of a symmetric distribution
- Finding sample size and comparing samples for estimating the mean
- Computations involving the mean, sample size, and sum of a data set
- Finding the value for a new score that will yield a given mean
- Rejecting unreasonable claims based on average statistics
- Weighted mean
- Mean and median of a data set
- How changing a value affects the mean and median
- Mode of a data set
- Choosing the best measure to describe data
- Range of a data set
- Finding the mode and range from a line plot
- Identifying peaks, symmetry, gaps, and clusters in a line plot
- Identifying the center, spread, and shape of a data set
- Comparing measures of center and variation
- Using back-to-back stem-and-leaf plots to compare data sets
- Five-number summary and interquartile range
- Constructing a box-and-whisker plot
- Using box-and-whisker plots to compare data sets
- Computing mean absolute deviation from a list of numerical values
- Computing mean absolute deviation from a bar graph
- Finding outliers in a data set
- Interpreting a tree diagram
- Introduction to the counting principle
- Counting principle
- Counting principle with repetition allowed
- Factorial expressions
- Computing permutations and combinations
- Word problem involving permutations
- Word problem involving combinations
- Introduction to permutations and combinations
- Classifying likelihood
- Determining a sample space and outcomes for an event: Experiment involving a single selection
- Introduction to the probability of an event
- Probability involving one die or choosing from n distinct objects
- Probability involving choosing from objects that are not distinct
- Understanding likelihood
- Probabilities of an event and its complement
- Experimental and theoretical probability
- Finding the odds in favor and against
- Converting between probability and odds
- Area as probability
- Determining a sample space and outcomes for an event: Experiment involving multiple selections
- Outcomes and event probability
- Experimental and theoretical probability for compound events
- Identifying independent events given descriptions of experiments

- Probability of independent events
- Probability of dependent events

*__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.