ALEKS®

Basic Math

This course covers the topics outlined below and is available for use with integrated, interactive eBooks. You can customize the scope and sequence of this course to meet your curricular needs.

Curriculum (358 topics + 277 additional topics)

- Whole Numbers (82 topics)
  - ♦ Place Value, Expanded Form, and Numeral Translation (6 topics)
    - ◊ Whole number place value: Problem type 1
    - ◊ Whole number place value: Problem type 2
    - ◊ Expanded form
    - ◊ Expanded form with zeros
    - ◊ Numeral translation: Problem type 1
    - ◊ Numeral translation: Problem type 2
  - ♦ Addition and Subtraction (15 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 with regrouping a hundred
    - ◊ Addition of large numbers
    - ◊ Subtracting a 1−digit number from a 2−digit number
    - ◊ Subtraction of 2−digit numbers without regrouping
    - ◊ Adding or subtracting 10, 100, or 1000
    - ◊ 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
    - ◊ Introduction to properties of addition
  - ♦ Multiplication and Division (27 topics)
    - ◊ Multiplication as repeated addition
    - ◊ One−digit multiplication
    - ◊ Multiplication by 10, 100, and 1000
    - ◊ Multiplying 2−digit and 1−digit numbers without regrouping
    - ◊ Multiplying with regrouping
    - ◊ Multiplication with trailing zeros: Problem type 1
    - ◊ Introduction to multiplication of large numbers
    - ◊ Multiplication with trailing zeros: Problem type 2
    - ◊ Multiplication of large numbers
    - ◊ Multiples: Problem type 1
    - ◊ Multiples: Problem type 2
    - ◊ Introduction to properties of multiplication
    - ◊ Division facts
    - ◊ Word problem with multiplication or division of whole numbers
    - ◊ Word problem with multiplication and addition or subtraction of whole numbers

- ◊ Division of whole numbers given in fractional form
- ◊ Division involving zero
- ◊ Division without regrouping
- ◊ Division with regrouping
- ◊ Division with trailing zeros: Problem type 1
- ◊ Division with trailing 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
- ◊ Division with remainder involving quotients with intermediate zeros: Problem type 2
- ◊ Word problem with division of whole numbers and rounding: Problem type 2

♦ Ordering, Rounding, and Estimating (8 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 or quotient of whole numbers

♦ Exponents and Order of Operations (10 topics)

- ◊ Writing expressions using exponents
- ◊ Introduction to exponents
- ◊ Power of 10: Positive exponent
- ◊ Introduction to parentheses
- ◊ Introduction to order of operations
- ◊ Order of operations with whole numbers
- ◊ 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
- ◊ Understanding the distributive property

♦ Prime Numbers, Factors, and Multiples (10 topics)

- ◊ Even and odd numbers
- ◊ Divisibility rules for 2, 5, and 10
- ◊ Divisibility rules for 3 and 9
- ◊ Factors
- ◊ Prime numbers
- ◊ Prime factorization
- ◊ Greatest common factor of 2 numbers
- ◊ Least common multiple of 2 numbers
- ◊ Least common multiple of 3 numbers
- ◊ Word problem with common multiples

♦ Introduction to Expressions and Equations (6 topics)

- ◊ Evaluating an algebraic expression: Whole number addition or subtraction
- ◊ Evaluating an algebraic expression: Whole number multiplication or division
- ◊ Evaluating an algebraic expression: Whole numbers with two operations
- ◊ Additive property of equality with whole numbers
- ◊ Multiplicative property of equality with whole numbers
- ◊ Using two steps to solve an equation with whole numbers

• Fractions (50 topics)

♦ Equivalent Fractions (5 topics)

- ◊ Introduction to fractions

- ◊ Understanding equivalent fractions
- ◊ Equivalent fractions
- ◊ Introduction to simplifying a fraction
- ◊ Simplifying a fraction

♦ Plotting and Ordering (5 topics)

- ◊ Fractional position on a number line
- ◊ Plotting fractions on a number line
- ◊ Ordering fractions with the same denominator
- ◊ Ordering fractions with the same numerator
- ◊ Using a common denominator to order fractions

♦ Multiplication and Division (11 topics)

- ◊ Product of a unit fraction and a whole number
- ◊ Product of a fraction and a whole number: Problem type 1
- ◊ Introduction to fraction multiplication
- ◊ Fraction multiplication
- ◊ Product of a fraction and a whole number: Problem type 2
- ◊ Multiplication of 3 fractions
- ◊ Word problem involving fractions and multiplication
- ◊ The reciprocal of a number
- ◊ Division involving a whole number and a fraction
- ◊ Fraction division
- ◊ Word problem involving fractions and division

♦ Addition and Subtraction (9 topics)

- ◊ Addition or subtraction of fractions with the same denominator
- ◊ Addition or subtraction of fractions with the same denominator and simplification
- ◊ Finding the LCD of two fractions
- ◊ Addition or subtraction of unit fractions
- ◊ Introduction to addition or subtraction of fractions with different denominators
- ◊ 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

♦ Mixed Numbers (16 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 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
- ◊ Mixed number multiplication
- ◊ Multiplication of a mixed number and a whole number
- ◊ Division with a mixed number and a whole number
- ◊ Mixed number division
- ◊ Word problem involving multiplication or division with mixed numbers

♦ Exponents and Order of Operations (4 topics)

- ◊ 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

- Decimals (61 topics)
  - ♦ Place Value, Ordering, and Rounding (10 topics)
    - ◊ Decimal place value: Tenths and hundredths
    - ◊ 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
    - ◊ Reading decimal position on a number line: Tenths
    - ◊ Reading decimal position on a number line: Hundredths
    - ◊ Introduction to ordering decimals
    - ◊ Ordering decimals
    - ◊ Rounding decimals
  - ♦ Converting Decimals to Fractions (7 topics)
    - ◊ Converting a decimal to a proper fraction without simplifying: Basic
    - ◊ Converting a decimal to a proper fraction without simplifying: Advanced
    - ◊ 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
  - ♦ Addition and Subtraction (10 topics)
    - ◊ Addition of aligned decimals
    - ◊ Decimal addition with 3 numbers
    - ◊ Subtraction of aligned decimals
    - ◊ Decimal subtraction: Basic
    - ◊ Decimal subtraction: Advanced
    - ◊ 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
  - ♦ Multiplication (10 topics)
    - ◊ Introduction to decimal multiplication
    - ◊ Multiplying a decimal by a whole number
    - ◊ Decimal multiplication: Problem type 1
    - ◊ Decimal multiplication: Problem type 2
    - ◊ Multiplication of a decimal by a power of ten
    - ◊ Multiplication of a decimal by a power of 0.1
    - ◊ Multiplying decimals less than 1: Problem type 2
    - ◊ Word problem with multiplication of a decimal and a whole number
    - ◊ Word problem with multiplication of two decimals
    - ◊ Word problem with decimal addition and multiplication
  - ♦ Division (9 topics)
    - ◊ Whole number division with decimal answers
    - ◊ Division of a decimal by a whole number
    - ◊ Division of a decimal by a 1−digit decimal
    - ◊ Division of a decimal by a 2−digit decimal
    - ◊ Division of a decimal by a power of ten
    - ◊ Decimal division with rounding
    - ◊ Word problem with division of a decimal and a whole number
    - ◊ Word problem with division of two decimals
    - ◊ Word problem with decimal subtraction and division

- ♦ Converting Fractions to Decimals (11 topics)
  - ◊ Converting a fraction with a denominator of 10 or 100 to a decimal
  - ◊ Converting a fraction with a denominator of 100 or 1000 to a decimal
  - ◊ Ordering fractions and decimals
  - ◊ 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
- ♦ Exponents and Order of Operations (4 topics)
  - ◊ 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

• Ratios, Proportions, and Percents (42 topics)

- ♦ Ratios and Unit Rates (8 topics)
  - ◊ Writing ratios using different notations
  - ◊ Writing ratios for real−world situations
  - ◊ Simplifying a ratio of whole numbers: Problem type 1
  - ◊ Simplifying a ratio of decimals
  - ◊ Finding a unit price
  - ◊ Computing unit prices to find the better buy
  - ◊ Solving a word problem on proportions using a unit rate
  - ◊ Word problem on unit rates associated with ratios of whole numbers: Decimal answers
- ♦ Proportions (3 topics)
  - ◊ Solving a proportion of the form $x/a = b/c$
  - ◊ Word problem on proportions: Problem type 1
  - ◊ Word problem with powers of ten
- ♦ Converting Between Fractions, Decimals, and Percentages (12 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
  - ◊ Introduction to converting a percentage to a decimal
  - ◊ Introduction to converting a decimal to a percentage
  - ◊ Converting between percentages and decimals
  - ◊ Converting between percentages and decimals in a real−world situation
  - ◊ Converting a percentage to a fraction in simplest form
  - ◊ Converting a fraction to a percentage: Denominator of 4, 5, or 10
  - ◊ 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
- ♦ Applications Involving Percentages (19 topics)
  - ◊ 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
  - ◊ Applying the percent equation: Problem type 1
  - ◊ Applying the percent equation: Problem type 2
  - ◊ Finding a percentage of a total amount: Real−world situations
  - ◊ Finding a percentage of a total amount without a calculator: Sales tax, commission, discount
  - ◊ Writing a ratio as a percentage without a calculator

- ◊ Finding the rate of a tax or commission
- ◊ Finding the total amount given the percentage of a partial amount
- ◊ 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
- ◊ 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
- ◊ Finding simple interest without a calculator
- ◊ Introduction to compound interest

• Geometry (38 topics)

♦ Perimeter (5 topics)

- ◊ Perimeter of a polygon
- ◊ Perimeter of a square or a rectangle
- ◊ Perimeter of a polygon involving mixed numbers and fractions
- ◊ Finding the missing length in a figure
- ◊ Perimeter of a piecewise rectangular figure

♦ Lines, Angles, and Triangles (8 topics)

- ◊ Identifying parallel and perpendicular lines
- ◊ Measuring an angle with the protractor
- ◊ Acute, obtuse, and right angles
- ◊ Finding supplementary and complementary angles
- ◊ Identifying supplementary and vertical angles
- ◊ Acute, obtuse, and right triangles
- ◊ Classifying scalene, isosceles, and equilateral triangles by side lengths or angles
- ◊ Finding an angle measure of a triangle given two angles

♦ Area of Polygons (11 topics)

- ◊ Area of a square or a rectangle
- ◊ Perimeter and area on a grid
- ◊ Area of a rectangle involving fractions
- ◊ Area of a rectangle involving mixed numbers and fractions
- ◊ Distinguishing between the area and perimeter of a rectangle
- ◊ Finding the side length of a rectangle given its perimeter or area
- ◊ Area of a piecewise rectangular figure
- ◊ Word problem involving the area between two rectangles
- ◊ Area of a triangle
- ◊ Area of a parallelogram
- ◊ Area of a trapezoid

♦ Circumference and Area of Circles (4 topics)

- ◊ Circumference of a circle
- ◊ Perimeter involving rectangles and circles
- ◊ Circumference and area of a circle
- ◊ Area involving rectangles and circles

♦ Volumes (3 topics)

- ◊ Volume of a rectangular prism made of unit cubes
- ◊ Volume of a rectangular prism
- ◊ Volume of a cylinder

♦ Square Roots and the Pythagorean Theorem (5 topics)

- ◊ Square root of a perfect square
- ◊ Using a calculator to approximate a square root
- ◊ Introduction to the Pythagorean Theorem
- ◊ Pythagorean Theorem

- ◊ Word problem involving the Pythagorean Theorem
- ♦ Congruent and Similar Figures (2 topics)
  - ◊ Similar polygons
  - ◊ Indirect measurement

• Measurement (16 topics)
- ♦ U.S. Customary Units of Measurement (8 topics)
  - ◊ Choosing U.S. Customary measurement units
  - ◊ U.S. Customary unit conversion with whole number values
  - ◊ Conversions involving measurements in feet and inches
  - ◊ Adding measurements in feet and inches
  - ◊ 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
- ♦ Metric Units of Measurement (5 topics)
  - ◊ Choosing metric measurement units
  - ◊ Metric distance conversion with whole number values
  - ◊ Metric mass or volume conversion with whole number values
  - ◊ Metric distance conversion with decimal values
  - ◊ Metric conversion with decimal values: Two−step problem
- ♦ Time and Temperature (2 topics)
  - ◊ Time unit conversion with whole number values
  - ◊ Converting between temperatures in Fahrenheit and Celsius
- ♦ Converting Between Measurement Systems (1 topics)
  - ◊ Converting between metric and U.S. Customary unit systems

• Data Analysis and Statistics (10 topics)
- ♦ Tables and Graphs of Data (7 topics)
  - ◊ Interpreting a tally table
  - ◊ Constructing a bar graph for non−numerical data
  - ◊ Interpreting a bar graph
  - ◊ Interpreting a double bar graph
  - ◊ Interpreting a pictograph table
  - ◊ Interpreting a line graph
  - ◊ Finding a percentage of a total amount in a circle graph
- ♦ Mean, Median, and Mode (3 topics)
  - ◊ Finding the mode and range of a data set
  - ◊ Mean of a data set
  - ◊ Mean and median of a data set

• Real Numbers (28 topics)
- ♦ Plotting and Ordering (4 topics)
  - ◊ Plotting integers on a number line
  - ◊ Writing a signed number for a real−world situation
  - ◊ Ordering integers
  - ◊ Absolute value of a number
- ♦ Operations with Rational Numbers (20 topics)
  - ◊ 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
  - ◊ Addition and subtraction with 3 integers
  - ◊ Addition and subtraction with 4 or 5 integers
  - ◊ Word problem with addition or subtraction of integers

- ◊ Integer multiplication and division
- ◊ Multiplication of 3 or 4 integers
- ◊ Signed fraction addition or subtraction: Basic
- ◊ Signed fraction subtraction involving double negation
- ◊ Addition and subtraction of 3 fractions involving signs
- ◊ Signed fraction multiplication: Basic
- ◊ Signed fraction multiplication: Advanced
- ◊ Signed fraction division
- ◊ Signed decimal addition and subtraction
- ◊ Signed decimal addition and subtraction with 3 numbers
- ◊ Signed decimal multiplication
- ◊ Signed decimal division

♦ Exponents and Order of Operations (4 topics)

- ◊ Exponents and integers: Problem type 1
- ◊ Exponents and integers: Problem type 2
- ◊ Order of operations with integers
- ◊ Order of operations with integers and exponents

• Algebraic Expressions and Equations (31 topics)

♦ Algebraic Expressions (8 topics)

- ◊ Evaluating a linear expression: Integer multiplication with addition or subtraction
- ◊ Evaluating an algebraic expression: Whole number operations and exponents
- ◊ Evaluating a quadratic expression: Integers
- ◊ Multiplying a constant and a linear monomial
- ◊ Distributive property: Whole number coefficients
- ◊ Combining like terms: Whole number coefficients
- ◊ Combining like terms: Integer coefficients
- ◊ Using distribution and combining like terms to simplify: Univariate

♦ One−Step Linear Equations (7 topics)

- ◊ Additive property of equality with decimals
- ◊ Additive property of equality with integers
- ◊ Additive property of equality with signed fractions
- ◊ Multiplicative property of equality with fractions
- ◊ Multiplicative property of equality with decimals
- ◊ Multiplicative property of equality with integers
- ◊ Multiplicative property of equality with signed fractions

♦ Multi−Step Linear Equations (9 topics)

- ◊ Identifying solutions to a linear equation in one variable: Two−step equations
- ◊ Additive property of equality with a negative coefficient
- ◊ Solving a two−step equation with integers
- ◊ Introduction to solving an equation with parentheses
- ◊ 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
- ◊ Solving a linear equation with several occurrences of the variable: Variables on both sides
- ◊ Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution
- ◊ Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution

♦ Writing Expressions and Equations (4 topics)

- ◊ 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
- ◊ Translating a sentence into a one−step equation

♦ Applications of Linear Equations (3 topics)

- ◊ Solving a fraction word problem using a linear equation of the form Ax = B
- ◊ Solving a word problem involving rates and time conversion
- ◊ Solving a word problem with two unknowns using a linear equation

- Other Topics Available(*) (277 additional topics)
  - ♦ Whole Numbers (3 topics)
    - ◊ Finding the next terms of an arithmetic sequence with whole numbers
    - ◊ Finding the next terms of a geometric sequence with whole numbers
    - ◊ Finding patterns in shapes
  - ♦ Fractions (2 topics)
    - ◊ Multi−step word problem involving fractions and multiplication
    - ◊ Complex fraction without variables: Problem type 1
  - ♦ Decimals (9 topics)
    - ◊ Writing a decimal and a fraction for a shaded region
    - ◊ Understanding decimal position on a number line using zoom: Hundredths
    - ◊ Understanding decimal position on a number line using zoom: Thousandths
    - ◊ Estimating a product of decimals
    - ◊ Division of a decimal by a power of 0.1
    - ◊ Solving a one−step word problem using the formula d = rt
    - ◊ Order of operations with decimals: Problem type 3
    - ◊ Addition or subtraction with a decimal and a mixed number
    - ◊ Multiplication with a decimal and a fraction
  - ♦ Ratios, Proportions, and Percents (10 topics)
    - ◊ Word problem on proportions: Problem type 2
    - ◊ Word problem on mixed number proportions
    - ◊ Converting a mixed number percentage to a decimal
    - ◊ Converting a decimal percentage to a fraction
    - ◊ Estimating a tip without a calculator
    - ◊ Computing a percentage from a table of values
    - ◊ Finding the multiplier to give a final amount after a percentage increase or decrease
    - ◊ Finding the original amount given the result of a percentage increase or decrease
    - ◊ Finding the final amount in a word problem on compound interest
    - ◊ Computing a percent mixture
  - ♦ Geometry (39 topics)
    - ◊ Sides of polygons having the same perimeter
    - ◊ Naming segments, rays, and lines
    - ◊ Drawing an angle with the protractor
    - ◊ Identifying corresponding and alternate 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
    - ◊ Naming polygons
    - ◊ Interpreting a Venn diagram of 2 sets
    - ◊ Identifying parallelograms, rectangles, and squares
    - ◊ Properties of quadrilaterals
    - ◊ Classifying parallelograms
    - ◊ Areas of rectangles with the same perimeter
    - ◊ Area involving rectangles and triangles
    - ◊ Introduction to a circle: Diameter, radius, and chord
    - ◊ Word problem involving the area between two concentric circles
    - ◊ Area involving inscribed figures
    - ◊ Classifying solids

- ◊ Vertices, edges, and faces of a solid
- ◊ Counting the cubes in a solid made of cubes
- ◊ Volume of a piecewise rectangular prism
- ◊ Volume of a triangular prism
- ◊ Volume of a pyramid
- ◊ Word problem involving the rate of filling or emptying a cylinder
- ◊ Volume of a cone
- ◊ Volume of a sphere
- ◊ Nets of solids
- ◊ Side views of a solid made of cubes
- ◊ Surface area of a cube or a rectangular prism
- ◊ Surface area of a piecewise rectangular prism made of unit cubes
- ◊ Surface area of a triangular prism
- ◊ Surface area of a cylinder
- ◊ Surface area of a sphere
- ◊ Estimating a square root
- ◊ Square root of a rational perfect square
- ◊ Identifying congruent shapes on a grid
- ◊ Identifying and naming congruent triangles
- ◊ Identifying similar or congruent shapes on a grid
- ◊ Similar right triangles

♦ Measurement (7 topics)

- ◊ Metric area unit conversion with decimal values
- ◊ Adding time
- ◊ Elapsed time
- ◊ Word problem with clocks
- ◊ Simplifying a ratio of whole numbers: Problem type 2
- ◊ Converting between compound units: Basic
- ◊ Converting between compound units: Advanced

♦ Data Analysis and Statistics (40 topics)

- ◊ Constructing a line plot
- ◊ Constructing a histogram for numerical data
- ◊ Interpreting a stem−and−leaf plot
- ◊ Interpreting a circle graph or pie chart
- ◊ Computations from a circle graph
- ◊ Angle measure in a circle graph
- ◊ Calculating relative frequencies in a contingency table
- ◊ Making a reasonable inference based on proportion statistics
- ◊ Finding if a question can be answered by the data
- ◊ Mode of a data set
- ◊ Average of two numbers
- ◊ Finding the value for a new score that will yield a given mean
- ◊ How changing a value affects the mean and median
- ◊ Choosing the best measure to describe data
- ◊ Rejecting unreasonable claims based on average statistics
- ◊ Weighted mean
- ◊ 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
- ◊ Interpreting a Venn diagram of 3 sets
- ◊ Interpreting a tree diagram
- ◊ Introduction to the counting principle

- ◊ Counting principle
- ◊ Factorial expressions
- ◊ Computing permutations and combinations
- ◊ Word problem involving permutations
- ◊ Word problem involving combinations
- ◊ Introduction to the probability of an event
- ◊ Probability of an event
- ◊ Understanding likelihood
- ◊ Odds of an event
- ◊ Outcomes and event probability
- ◊ Probabilities involving two rolls of a die
- ◊ Area as probability
- ◊ Experimental and theoretical probability
- ◊ Introduction to expectation
- ◊ Probability of independent events
- ◊ Probability of dependent events
- ◊ Probability of the union of two events

♦ Real Numbers (13 topics)

- ◊ Plotting rational numbers on a number line
- ◊ Reading the temperature from a thermometer
- ◊ Ordering real numbers
- ◊ Identifying numbers as integers or non−integers
- ◊ Identifying numbers as rational or irrational
- ◊ Signed fraction addition or subtraction: Advanced
- ◊ Operations with absolute value: Problem type 2
- ◊ Finding the absolute error and percent error of a measurement
- ◊ Exponents and signed fractions
- ◊ Complex fraction without variables: Problem type 2
- ◊ Scientific notation with positive exponent
- ◊ Scientific notation with negative exponent
- ◊ Converting between scientific notation and standard form in a real−world situation

♦ Algebraic Expressions and Equations (39 topics)

- ◊ Evaluating a linear expression: Signed fraction multiplication with addition or subtraction
- ◊ Evaluating a linear expression: Signed decimal addition and subtraction
- ◊ Evaluating a linear expression: Signed decimal multiplication with addition or subtraction
- ◊ Distributive property: Integer coefficients
- ◊ Using distribution with double negation and combining like terms to simplify: Multivariate
- ◊ Combining like terms in a quadratic expression
- ◊ Introduction to adding fractions with variables and common denominators
- ◊ Adding rational expressions with different denominators and a single occurrence of a variable
- ◊ Adding rational expressions with denominators ax and bx: Basic
- ◊ Properties of addition
- ◊ Properties of real numbers
- ◊ Additive property of equality with fractions and mixed numbers
- ◊ 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
- ◊ Solving an equation to find the value of an expression
- ◊ Solving a multi−step equation given in fractional form
- ◊ Identifying properties used to solve a linear equation
- ◊ Solving a two−step equation with signed decimals
- ◊ Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions

- ◊ Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators
- ◊ Solving a two−step equation with signed fractions
- ◊ Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients
- ◊ Solving equations with zero, one, or infinitely many solutions
- ◊ Solving a proportion of the form $(x+a)/b = c/d$
- ◊ Solving a proportion of the form $a/(x+b) = c/x$
- ◊ Solving for a variable in terms of other variables using addition or subtraction: Advanced
- ◊ Translating a sentence into a multi−step equation
- ◊ Solving a decimal word problem using a linear equation of the form $Ax + B = C$
- ◊ Solving a decimal word problem using a linear equation with the variable on both sides
- ◊ Solving a fraction word problem using a linear equation with the variable on both sides
- ◊ Solving a word problem involving consecutive integers
- ◊ Solving equations involving vertical angles
- ◊ Solving equations involving angles and a pair of parallel lines
- ◊ Finding angle measures of a triangle given angles with variables
- ◊ Finding angle measures of a right or isosceles triangle given angles with variables
- ◊ Finding a side length given the perimeter and side lengths with variables
- ◊ Finding the perimeter or area of a rectangle given one of these values
- ◊ Finding the radius or the diameter of a circle given its circumference
- ◊ Circumference ratios

♦ Inequalities (15 topics)

- ◊ Translating a sentence by using an inequality symbol
- ◊ Graphing a linear inequality on the number line
- ◊ Writing an inequality given a graph on the number line
- ◊ Translating a sentence into a one−step inequality
- ◊ Translating a sentence into a multi−step inequality
- ◊ Writing an inequality for a real−world situation
- ◊ Identifying solutions to a two−step linear inequality in one variable
- ◊ Additive property of inequality with whole numbers
- ◊ Additive property of inequality with integers
- ◊ Additive property of inequality with signed fractions
- ◊ Additive property of inequality with signed decimals
- ◊ Multiplicative property of inequality with integers
- ◊ Multiplicative property of inequality with signed fractions
- ◊ Solving a two−step linear inequality: Problem type 1
- ◊ Solving a two−step linear inequality: Problem type 2

♦ Graphs of Linear Equations (37 topics)

- ◊ Reading a point in the coordinate plane
- ◊ Plotting a point in the coordinate plane
- ◊ Table for a linear equation
- ◊ Identifying solutions to a linear equation in two variables
- ◊ Finding a solution to a linear equation in two variables
- ◊ Writing a function rule given a table of ordered pairs: One−step rules
- ◊ Midpoint of a line segment in the plane
- ◊ 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 line given its equation in standard form
- ◊ Graphing a vertical or horizontal line
- ◊ Finding x− and y−intercepts given the graph of a line on a grid
- ◊ Finding x− and y−intercepts of a line given the equation: Basic

- ◊ Finding x− and y−intercepts of a line given the equation: Advanced
- ◊ Graphing a line given its x− and y−intercepts
- ◊ Graphing a line by first finding its x− and y−intercepts
- ◊ Graphing a parabola of the form $y = ax^2$
- ◊ Classifying slopes given graphs of lines
- ◊ Finding slope given the graph of a line on a grid
- ◊ Finding slope given two points on the line
- ◊ Finding the slope of horizontal and vertical lines
- ◊ Finding the coordinate that yields a given slope
- ◊ Graphing a line given its slope and y−intercept
- ◊ Graphing a line through a given point with a given slope
- ◊ Writing an equation and drawing its graph to model a real−world situation: Advanced
- ◊ Interpreting the graphs of two functions
- ◊ Solving a rational equation that simplifies to linear: Denominator x
- ◊ Identifying direct variation equations
- ◊ Identifying direct variation from ordered pairs and writing equations
- ◊ Writing a direct variation equation
- ◊ Word problem on direct variation
- ◊ Interpreting direct variation from a graph
- ◊ Writing an inverse variation equation
- ◊ Identifying direct and inverse variation equations
- ◊ Identifying direct and inverse variation from ordered pairs and writing equations
- ◊ Word problem on inverse variation

♦ Exponents and Polynomials (63 topics)

- ◊ Degree and leading coefficient of a univariate polynomial
- ◊ Simplifying a sum or difference of two univariate polynomials
- ◊ Simplifying a sum or difference of three univariate polynomials
- ◊ Simplifying a sum or difference of multivariate polynomials
- ◊ Understanding the product rule of exponents
- ◊ Introduction to the product rule of exponents
- ◊ Product rule with positive exponents: Univariate
- ◊ Product rule with positive exponents: Multivariate
- ◊ Understanding the power rules of exponents
- ◊ Introduction to the power of a power rule of exponents
- ◊ Introduction to the power of a product rule of exponents
- ◊ Power rules with positive exponents: Multivariate products
- ◊ Power rules with positive exponents: Multivariate quotients
- ◊ Power and product rules with positive exponents
- ◊ Ordering numbers with positive exponents
- ◊ Multiplying a univariate polynomial by a monomial with a positive coefficient
- ◊ Multiplying a univariate polynomial by a monomial with a negative coefficient
- ◊ Multiplying a multivariate polynomial by a monomial
- ◊ Multiplying binomials with leading coefficients of 1
- ◊ Multiplying binomials with leading coefficients greater than 1
- ◊ Multiplying binomials in two variables
- ◊ Multiplying conjugate binomials: Univariate
- ◊ Multiplying conjugate binomials: Multivariate
- ◊ Squaring a binomial: Univariate
- ◊ Squaring a binomial: Multivariate
- ◊ Multiplication involving binomials and trinomials in one variable
- ◊ Multiplication involving binomials and trinomials in two variables
- ◊ Introduction to the GCF of two monomials
- ◊ Greatest common factor of two multivariate monomials

◊ Greatest common factor of three univariate monomials
◊ Introduction to the LCM of two monomials
◊ Least common multiple of two monomials
◊ Factoring a linear binomial
◊ Factoring out a monomial from a polynomial: Univariate
◊ Factoring out a monomial from a polynomial: Multivariate
◊ Simplifying a ratio of multivariate monomials: Basic
◊ Introduction to the quotient rule of exponents
◊ Simplifying a ratio of univariate monomials
◊ Quotient of expressions involving exponents
◊ Simplifying a ratio of multivariate monomials: Advanced
◊ Evaluating expressions with exponents of zero
◊ Power of 10: Negative exponent
◊ Evaluating an expression with a negative exponent: Whole number base
◊ Evaluating an expression with a negative exponent: Positive fraction base
◊ Evaluating an expression with a negative exponent: Negative integer base
◊ Rewriting an algebraic expression without a negative exponent
◊ Introduction to the product rule with negative exponents
◊ Product rule with negative exponents
◊ Power of a power rule with negative exponents
◊ Power rules with negative exponents
◊ Quotient rule with negative exponents: Problem type 1
◊ Multiplying numbers written in scientific notation: Basic
◊ Multiplying numbers written in scientific notation: Advanced
◊ Dividing numbers written in scientific notation: Basic
◊ Dividing numbers written in scientific notation: Advanced
◊ Finding all square roots of a number
◊ Simplifying the square root of a whole number less than 100
◊ Simplifying the square root of a whole number greater than 100
◊ Introduction to square root multiplication
◊ Square root multiplication: Basic
◊ Introduction to square root addition or subtraction
◊ Square root addition or subtraction
◊ Square root addition or subtraction with three terms

***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.*

