APA Alberta-based Math Curricula: Grade 7 Math

Number theory
- Prime or composite
- Prime factorization
- Multiplicative inverses
- Divisibility rules
- Greatest common factor
- Least common multiple
- GCF and LCM: word problems
- Scientific notation
- Compare numbers written in scientific notation
- Classify numbers

Decimal numbers
- Decimal numbers review
- Compare and order decimals
- Decimal number lines
- Round decimals

Operations with decimals
- Add and subtract decimals
- Add and subtract decimals: word problems
- Multiply decimals
- Multiply decimals and whole numbers: word problems
- Divide decimals
- Divide decimals by whole numbers: word problems
- Estimate sums, differences and products of decimals
- Add, subtract, multiply and divide decimals: word problems
- Multi-step inequalities with decimals
- Maps with decimal distances
- Simplify expressions involving decimals

Integers
- Understanding integers
- Integers on number lines
- Graph integers on number lines
- Absolute value and opposite integers
- Compare and order integers
- Integer inequalities with absolute values

Operations with integers

- Integer addition and subtraction rules
- Add and subtract integers using counters
- Add and subtract integers
- Complete addition and subtraction sentences with integers
- Add and subtract integers: word problems
- Integer multiplication and division rules
- Multiply and divide integers
- Complete multiplication and division sentences with integers
- Simplify expressions involving integers

Fractions and mixed numbers

- Equivalent fractions
- Simplify fractions
- Understanding fractions
- Least common denominator
- Compare and order fractions
- Compare fractions: word problems
- Convert between mixed numbers and improper fractions
- Compare mixed numbers and improper fractions
- Round mixed numbers

Operations with fractions

- Add and subtract fractions with like denominators
- Add and subtract fractions with like denominators: word problems
- Add fractions with unlike denominators
- Subtract fractions with unlike denominators
- Add and subtract fractions with unlike denominators: word problems
- Add and subtract mixed numbers
- Add and subtract mixed numbers: word problems
- Inequalities with addition and subtraction of fractions and mixed numbers
- Estimate sums and differences of mixed numbers
- Multiply fractions and whole numbers
- Multiply fractions and whole numbers: word problems
- Multiply two fractions using models
- Multiply fractions
- Multiply fractions: word problems
- Multiply three or more fractions and whole numbers
- Divide whole numbers by unit fractions using models
- Reciprocals
- Divide whole numbers and unit fractions
- Divide fractions

- Divide fractions: word problems
- Estimate products and quotients of fractions and mixed numbers
- Add, subtract, multiply and divide fractions and mixed numbers: word problems

Rational numbers

- Identify rational numbers
- Convert between decimals and fractions or mixed numbers
- Absolute value of rational numbers
- Compare rational numbers
- Put rational numbers in order
- Add and subtract rational numbers
- Apply addition and subtraction rules
- Multiply and divide rational numbers
- Apply multiplication and division rules

Exponents and square roots

- Understanding exponents
- Evaluate exponents
- Exponents: solve for the variable
- Exponents with negative bases
- Exponents with decimal and fractional bases
- Simplify expressions involving exponents
- Square roots of perfect squares
- Estimate square roots

Ratios and proportions

- Understanding ratios
- Equivalent ratios
- Equivalent ratios: word problems
- Compare ratios: word problems
- Unit rates
- Do the ratios form a proportion?
- Do the ratios form a proportion: word problems
- Solve proportions
- Solve proportions: word problems
- Estimate population size using proportions
- Rate of change
- Constant rate of change
- Scale drawings and scale factors

Percents

- What percentage is illustrated?
- Convert between percents, fractions and decimals

- Compare percents to fractions and decimals
- Estimate percents of numbers
- Percents of numbers and money amounts
- Percents of numbers: word problems
- Solve percent equations
- Solve percent equations: word problems

Problem solving and estimation

- Estimate to solve word problems
- Multi-step word problems
- Guess-and-check word problems
- Use Venn diagrams to solve problems
- Find the number of each type of coin
- Elapsed time word problems

Consumer math

- Add, subtract, multiply and divide money amounts: word problems
- Price lists
- Unit prices
- Unit prices: find the total price
- Percent of a number: tax, discount and more
- Find the percent: tax, discount and more
- Sale prices: find the original price
- Multi-step problems with percents
- Estimate tips
- Simple interest
- Compound interest

Data and graphs

- Interpret tables
- Interpret line plots
- Create line plots
- Create and interpret line plots with fractions
- Interpret stem-and-leaf plots
- Interpret bar graphs
- Create bar graphs
- Interpret histograms
- Create histograms
- Create frequency charts
- Interpret circle graphs
- Circle graphs and central angles
- Interpret line graphs

- Create line graphs
- Interpret box-and-whisker plots
- Scatter plots
- Choose the best type of graph

  Geometry
- Lines, line segments and rays
- Parallel, perpendicular, intersecting
- Construct the midpoint or perpendicular bisector of a segment
- Construct a perpendicular line
- Name, measure and classify angles
- Identify complementary, supplementary, vertical, adjacent and congruent angles
- Find measures of complementary, supplementary, vertical and adjacent angles
- Construct an angle bisector
- Construct a congruent angle
- Transversal of parallel lines
- Construct parallel lines
- Classify triangles
- Classify quadrilaterals
- Find missing angles in triangles and quadrilaterals
- Identify and classify polygons
- Interior angles of polygons
- Construct an equilateral triangle or regular hexagon
- Similar and congruent figures
- Similar figures: side lengths and angle measures
- Similar figures and indirect measurement
- Congruent figures: side lengths and angle measures
- Congruence statements and corresponding parts
- Perimeter
- Area of rectangles and parallelograms
- Area of triangles and trapezoids
- Area with mixed numbers
- Area and perimeter: word problems
- Parts of a circle
- Circles: calculate area, circumference, radius and diameter
- Circles: word problems
- Find lengths and measures of bisected lines and angles
- Front, side and top view
- Names and bases of 3-dimensional figures
- Nets of 3-dimensional figures

- Surface area
- Volume
- Perimeter, area and volume: changes in scale
- Semicircles: calculate area, perimeter, radius and diameter
- Quarter circles: calculate area, perimeter and radius
- Area of compound figures with triangles, semicircles and quarter circles
- Area between two shapes

Transformations

- Identify reflections, rotations and translations
- Translations: graph the image
- Translations: find the coordinates
- Reflections: graph the image
- Reflections: find the coordinates
- Rotations: graph the image
- Rotations: find the coordinates
- Symmetry

Coordinate graphs

- Points on coordinate graphs
- Quadrants and axes
- Coordinate graphs as maps

Measurement

- Estimate metric measurements
- Compare and convert metric units
- Metric mixed units
- Convert square and cubic units of length
- Convert between cubic metres and litres
- Precision

Number sequences

- Identify arithmetic and geometric sequences
- Arithmetic sequences
- Geometric sequences
- Number sequences: mixed review
- Number sequences: word problems
- Evaluate variable expressions for number sequences
- Write variable expressions for arithmetic sequences

Variable expressions

- Write variable expressions
- Evaluate single-variable expressions I
- Evaluate single-variable expressions II

- Evaluate multi-variable expressions
- Evaluate variable expressions for numerators and denominators
- Add and subtract like terms

  Single-variable equations
- Does x satisfy the equation?
- Model and solve equations using algebra tiles
- Solve one-step linear equations
- Solve two-step linear equations
- Solve equations involving like terms

  Linear functions
- Identify proportional relationships
- Find the constant of variation
- Does (x, y) satisfy the equation?
- Complete a function table
- Write a rule for a function table
- Find points on a function graph
- Graph a line from a function table
- Graph a line from an equation
- Linear function word problems

  Properties
- Properties of addition and multiplication
- Distributive property
- Simplify variable expressions using properties
- Solve equations using properties

  Probability
- Probability of simple events
- Probability of opposite, mutually exclusive and overlapping events
- Experimental probability
- Make predictions
- Compound events: find the number of outcomes
- Counting principle

  Statistics
- Calculate mean, median, mode and range
- Interpret charts to find mean, median, mode and range
- Mean, median, mode and range: find the missing number
- Changes in mean, median, mode and range
- Identify representative, random and biased samples