

Mathletics

British Columbia Curriculum

Activities (Courses) and Skill Quests



Grades 7-8

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Mathletics

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Grade 7

1 Number

1.1 Number

7.N.Decimals/fractions/ratios/percents Relationships between decimals, fractions, ratios, and percents	
Course Topics	Activities
Fractions, decimals and percents	Fractions to Decimals
	Decimals to Fractions 2
	Fraction to Terminating Decimal
	Fractions to Decimals 2
	Match Decimals and Percentages
	Fractions to Percentages (Non-Calculator)
	Fractions to Percentages (Calculator)
	Percentages to Fractions (with and without simplification)
	Common Fractions as Percentages
Topics	Skill Quests
Decimals, fractions, ratios, percents	Investigating terminating and repeating decimals
	Ordering fractions and decimals on a number line
	Converting decimals to percents
	Converting terminating decimals to fractions
	Converting repeating decimals to fractions
	Converting fractions to terminating decimals
	Converting fractions to repeating decimals
	Converting fractions to percents
	Converting fractions to repeating percents
	Comparing/ordering: fractions, decimals, percents
	Converting percents to fractions and mixed numbers
	Converting percents to decimals
	Converting repeating percents to decimals
	Equivalence: decimals, fractions, ratios, percents

2 Computational fluency

2.1 Computational fluency

7.F.Multiply divide facts to 100 Multiplication and division facts to 100 (extending computational fluency)	
Course Topics	Activities
Whole numbers - Multiplying, dividing	Dividing by 10, 100, 1000
	Multiplying by 10, 100, 1000
	Multiply More Multiples of 10
	Estimate Quotients
	Mental Methods Division
	Mental Methods Division 1
	Mental Methods Division 2
	Mental Methods Division 3
	Mental Methods Multiplication 1
	Mental Methods Multiplication 2
	Mental Methods Multiplication 3
	Multiply 2 Digits Area Model
Topics	Skill Quests
Multiplication and division facts to 100	Multiplying using known facts
	Using factors to multiply
	Using place value to divide
	Multiplying by 10 then halving
	Dividing using known facts

7.F.Operations with integers	
Operations with integers (addition, subtraction, multiplication, division, and order of operations)	
Course Topics	Activities
Integers - Operations	Integers: Add and Subtract
	Add Integers
	Order of Operations 1 (BEDMAS)
	Negative or Positive?
	Comparing Integers
	More with Integers
	Integers on a Number Line
	Integers: Multiplication and Division
	Integers: Order of Operations (BEDMAS)
	Ordering Integers (Number Line)
	Identifying errors in applying the order of operations
	Adding Integers: Positive, Negative or Zero
	Multiplying and Dividing Integers
	Integers: Subtraction
Topics	Skill Quests
Operations with integers	Investigating integers
	Comparing and ordering integers
	Adding and subtracting integers
	Adding integers, two-sided counters
	Adding and subtracting integers, number line
	Understanding opposites in context
	Adding integers
	Subtracting integers
	Adding & subtracting integers, order of operations
	Multiplying integers
	Dividing integers
	Multiplying and dividing integers
	Order of operations, integers
	Using the 4 operations with integers

7.F.Operations with decimals	
Operations with decimals (addition, subtraction, multiplication, division, and order of operations)	
Course Topics	Activities
Decimals - Operations	Adding Decimals
	Subtract Decimals 2
	Multiply Decimals: 10, 100, 1000
	Multiply Decimal by Whole Number
	Adding and Subtracting Decimals
	Decimal by Decimal
	Divide Decimal by Whole Number
	Divide Decimal by Decimal
	Estimate Decimal Differences 1
	Estimate Decimal Sums 1
	Estimate Decimal Operations
	Decimal Complements
	Multiply Decimals: Area Model
	Multiply Decimals 1
Topics	Skill Quests
Operations with decimals	Solving decimal word problems, 4 operations
	Adding decimals
	Subtracting decimals
	Multiplying decimals
	Multiplying decimals, place value
	Dividing decimals
	Order of operations, decimals

7.L.Two-step equations	
Two-step equations with whole-number coefficients, constants, and solutions	
Course Topics	Activities
Equations	I am Thinking of a Number!
	Find the Missing Number 2
Topics	Skill Quests
Two-step equations	Preserving equality
	Solving two-step equations
	Model and solve two-step equations, algebra tiles
	Modelling real-life scenarios using equations
	Checking solutions of twostep equations

3 Patterning

3.1 Patterns

7.L.Linear relations	
Discrete linear relations, using expressions, tables, and graphs	
Course Topics	Activities
Cartesian coordinates & linear relations	Table of Values
	Graphing from a Table of Values
	Reading Values from a Line
Topics	Skill Quests
Discrete linear relations	Graphing discrete linear relations
	Deriving the expression, discrete linear relations

4 Geometry and measurement

4.1 Geometry and measurement

7.S.Circles	
Circumference and area of circles	
Course Topics	Activities
Circumference & area of circles	Labelling Circles
	Identify Parts of Circles 1
	Calculate Circumference of Circles
	Area: Circles 1
	Area: Annulus
Topics	Skill Quests
Circumference and area of circles	Finding the area of circles
	Finding the circumference of circles
	Introducing the parts of a circle
	Introducing circumference

7.S.Volume	
Volume of rectangular prisms and cylinders	
Course Topics	Activities
Volume of rectangular prisms & cylinders	Volume: Rectangular Prisms 1
	Volume: Cylinders
Topics	Skill Quests
Volume: rectangular prisms and cylinders	Finding the volume of rectangular prisms
	Finding the missing dimension, rectangular prisms
	Finding the volume of cylinders
	Finding the missing dimension, cylinders
	Volume: cylinder, word problems

7.S.Cartesian coordinates	
Cartesian coordinates and graphing	
Course Topics	Activities
Cartesian coordinates & linear relations	Number Plane
	Coordinate Graphs
Topics	Skill Quests
Cartesian coordinates and graphing	Introducing Cartesian coordinates
	Drawing shapes on the coordinate plane

7.S.Transformations Combinations of transformations	
Course Topics	Activities
Cartesian coordinates & linear relations	Transformations: Coordinate Plane
	Rotations: Coordinate Plane
	Horizontal and Vertical Change
Topics	Skill Quests
Combinations of transformations	Successive translations on the coordinate plane
	Rotations on the coordinate plane
	Reflections on the coordinate plane
	Combinations of transformations
	Investigating tessellations using transformations

5 Data and probability

5.1 Data and probability

7.D.Circle graphs Circle graphs	
Course Topics	Activities
Circle graphs (sector graphs)	Sector Graphs
	Creating a Sector Graph
	Sector Graph Angles
Topics	Skill Quests
Circle graphs	Interpreting and constructing circle graphs

7.D.Probability Experimental probability with two independent events	
Course Topics	Activities
Probability	Dice and Coins
Topics	Skill Quests
Experimental probability	Understanding independent events

6 Financial literacy

6.1 Financial literacy

7.F.Financial literacy Financial literacy – financial percentage	
Course Topics	Activities
Financial literacy	Profit and Loss
	GST
Topics	Skill Quests
Financial percentage	Calculating percentage discounts
	Calculating tips
	Calculating tax

Grade 8

1 Number

1.1 Number

8.F.Perfect squares and cubes Perfect squares and cubes	
Course Topics	Activities
Squares, cubes, square roots, cube roots	Square Roots
Topics	Skill Quests
Perfect squares and cubes	Perfect squares
	Perfect cubes
	Finding perfect squares and cubes

8.F.Square and cube roots Square and cube roots	
Course Topics	Activities
Squares, cubes, square roots, cube roots	Estimating Square Roots
	Estimating Cube Roots
	Square Roots 1
	Square Roots
Topics	Skill Quests
Square and cube roots	Finding square roots
	Finding square roots, fractions
	Finding cube roots
	Finding cube roots, fractions
	Finding square and cube roots
	Estimating square roots
	Estimating cube roots

8.N.Percents Percents less than 1 and greater than 100 (decimal and fractional percents)	
Course Topics	Activities
Percents - Conversions	Decimal to Percentage
	Decimals to Percentages
	Percentages to Decimals
	Percentages greater than 100% to Mixed Numerals
	Mixed Numerals to Percentages greater than 100%
Topics	Skill Quests
Percents less than 1 & greater than 100	Percents greater than 100
	Percents less than 1

8.N.Numerical proportional reasoning Numerical proportional reasoning (rates, ratio, proportions, and percent)	
Course Topics	Activities
Proportional reasoning - Ratios	Ratio
	Equivalent Ratios
	Dividing a Quantity Into a Ratio
	Ratio Word Problems
	Word Problems: Ratio
	Simplify Ratios: 2 Whole Numbers
	Simplify Ratios: 3 Whole Numbers
	Simplify Ratios: Fractions
	Simplify Ratios: Mixed Numbers
	Simplify Ratios: Decimals
Proportional reasoning - Rates	Time Taken
	Average Speed
	Distance Travelled
	Rates Word Problems
	Travel Graphs
	Rates Calculations
	Unitary Method
Proportional reasoning - Finance	Wages and Salaries
	Working Overtime
	Piecework and Royalties
Topics	Skill Quests
Numerical proportional reasoning	Unit rate
	Simplifying and comparing rates
	Solving rate problems
	Dividing a quantity in a given ratio
	Solving ratio problems
	Proportions
	Percents

2 Computational fluency

2.1 Computational fluency

8.F.Operations with fractions	
Operations with fractions (addition, subtraction, multiplication, division, and order of operations)	
Course Topics	Activities
Fractions - Adding & subtracting	One Take Fraction
	Add: Common Denominator
	Subtract: Common Denominator
	Add: No Common Denominator
	Subtract: No Common Denominator
	Mixed Numerals
	Add Unlike Mixed Numbers
	Add Like Mixed Numbers
	Subtract Unlike Mixed Numbers
Fractions - Multiplying & fraction of	Multiply Fraction by Whole Number
	Multiplying Fractions
	Multiply Two Fractions 1
	Fraction Word Problems
	More Fraction Problems
	Multiply Mixed Numbers
	Multiply Fraction by Fraction
Fractions - Dividing	Dividing Fractions
	Divide Fractions by Fractions 1
	Divide Mixed Numbers
	Divide Whole Number by Fraction
	Using Reciprocals
	Divide by a Unit Fraction
	Divide Fractions Visual Model
Topics	Skill Quests
Operations with fractions	Adding fractions, same denominator
	Adding a whole number and a fraction
	Adding improper fractions, same denominator
	Adding with mixed numbers, same denominator
	Adding fractions, unlike denominator
	Adding improper fractions, unlike denominator
	Adding with mixed numbers, unlike denominator
	Subtracting fractions, same denominator
	Subtracting a fraction from a whole number
	Subtracting improper fractions, same denominator
	Subtracting with mixed numbers, same denominator
	Subtracting fractions, unlike denominator
	Subtracting improper fractions, unlike denominator
	Subtracting with mixed numbers, unlike denominator
	Adding/subtracting fractions, word problems
	Multiplying fractions by whole numbers

	Multiplying mixed numbers by whole numbers
	Multiplying fractions
	Multiplying improper fractions
	Multiplying mixed numbers
	Multiplying fractions and mixed numbers
	Dividing fractions and whole numbers
	Dividing fractions
	Dividing whole numbers and improper fractions
	Dividing whole numbers and mixed numbers
	Dividing mixed numbers and fractions
	Dividing mixed numbers
	Dividing improper fractions and mixed numbers
	Dividing fractions, word problems
	Order of operations with fractions

8.L.Expressions	
Expressions – writing and evaluating using substitution	
Course Topics	Activities
Algebraic expressions	Simple Substitution
	Complex Substitution
	Writing Algebraic Expressions
	Algebra Tiles
Topics	Skill Quests
Writing and evaluating expressions	Writing expressions
	Evaluating expressions using substitution
	Writing and evaluating expressions

8.L.Two-step equations	
Two-step equations with integer coefficients, constants, and solutions	
Course Topics	Activities
Equations	Solving Simple Equations
	Solve Two-Step Equations
	Solve Equations: Multiply, Divide 2
Topics	Skill Quests
Two-step equations	Two-step equations
	Equation word problems

3 Patterning

3.1 Patterns

8.L.Linear relations	
Discrete linear relations (extended to larger numbers, limited to integers)	
Course Topics	Activities
Linear relations	Find the Pattern Rule
	Pattern Rules and Tables
	Coordinate Graphs
	Graphing from a Table of Values
	Reading Values from a Line
	Determining a Rule for a Line
Topics	Skill Quests
Discrete linear relations	Discrete linear relations
	Identifying the equation from a graph

4 Geometry and measurement

4.1 Geometry and measurement

8.S.Surface area and volume	
Surface area and volume of regular solids, including triangular and other right prisms and cylinders	
Course Topics	Activities
Teacher directed	
Topics	Skill Quests
Surface area and volume: regular solids	Finding the surface area of regular solids
	Finding the surface area of rectangular prisms
	Finding the surface area of triangular prisms
	Finding the surface area of cylinders
	Finding the surface area of pyramids
	Solving surface area and volume problems, cylinder
	Finding the volume of pyramids
	Finding the volume of cubes and rectangular prisms
	Finding the volume of triangular prisms
	Finding the volume of cylinders

8.S.Pythagorean theorem	
Pythagorean theorem	
Course Topics	Activities
Pythagorean theorem	Pythagorean Triads
	Hypotenuse of a Right Triangle
	Pythagorean Theorem
	Pythagoras and Perimeter
	Pythagoras: Find a Short Side (integers only)
	Pythagoras: Find a Short Side (rounding needed)
	Pythagoras: Find a Short Side (decimal values)
Topics	Skill Quests
Pythagorean theorem	Identifying the sides of a right triangle
	Proving right triangles, Pythagorean theorem
	Finding the length of the missing side, short side
	Finding the length of the missing side, hypotenuse
	Finding the length of the missing side
	Matching right triangles to word problems
	Pythagorean triples

8.S.3D objects	
Construction, views, and nets of 3D objects	
Course Topics	Activities
Teacher directed	
Topics	Skill Quests
Construction, views, & nets: 3D objects	Top, front, and side views of 3D objects
	Connecting prisms with their nets
	Connecting prisms and pyramids with their nets
	Connecting 3D objects with their nets

5 Data and probability

5.1 Data and probability

8.D.Central tendency	
Central tendency	
Course Topics	Activities
Statistics - Central tendency	Mean
	Median
	The Median
	Mode
	Mean from Frequency Table
	Mode from Frequency Table
	Median from Frequency Table
	Which Measure of Central Tendency?
Topics	Skill Quests
Central tendency	Mean
	Median
	Mode

8.D.Probability	
Theoretical probability with two independent events	
Course Topics	Activities
Probability	Probability Tables
	Probability With Replacement
	Dice and Coins
	Fair Games
Topics	Skill Quests
Theoretical probability	Determining theoretical probability, tree diagrams
	Identifying the sample space
	Exploring fair games

6 Financial literacy

6.1 Financial literacy

8.F.Financial literacy	
Best buys	
Course Topics	Activities
Teacher directed	
Topics	Skill Quests
Best buys	Best buys



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