

Mathletics Ontario Curriculum

Activities (Courses) and Skill Quests



Grades 7-8

September, 2025

Mathletics

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Ontario Curriculum

Activities (Courses) and Skill Quests

September, 2025

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Grade 7

B Number

B1 Number Sense: Rational Numbers

7.B1.1

represent and compare whole numbers up to and including one billion, including in expanded form using powers of ten, and describe various ways they are used in everyday life

Activities

B1 Rational numbers

Place Value to Billions

Equal, less or Greater Than?

Skill Quests

Represent/compare numbers to one billion

Reading & writing numbers of any size

Comparing & ordering numbers of any size

Identifying the place value of numbers of any size

Representing numbers using expanded form

Rounding 6-digit numbers

7.B1.2

identify and represent perfect squares, and determine their square roots, in various contexts

Activities

B1 Rational numbers

Square Roots 1

Square Roots

Skill Quests

Perfect squares & square roots

Finding square roots of perfect squares

Identifying & representing perfect squares

7.B1.3

read, represent, compare, and order rational numbers, including positive and negative fractions and decimal numbers to thousandths, in various contexts

Activities

B1 Rational numbers

Integers on a Number Line

Comparing Integers

Ordering Integers (Number Line)

Identifying Fractions on a Number Line

Mixed and Improper Fractions on a Number Line

Comparing Fractions with Signs

Decimals on a Number Line

Decimal Order 1

Comparing Decimals 1



Skill Quests



Represent/compare/order rational numbers



Comparing & ordering rational numbers



Understanding rational numbers

B1 Number Sense: Fractions, Decimals, and Percents

7.B1.4 use equivalent fractions to simplify fractions, when appropriate, in various contexts	
 Activities	
B1 Fractions, decimals & percents	Simplify Fractions
 Skill Quests	
Simplify fractions	Simplifying fractions

7.B1.5 generate fractions and decimal numbers between any two quantities	
 Activities	
Teacher directed	
 Skill Quests	
Fractions/decimals between 2 quantities	Fractions & decimals between two quantities

7.B1.6 round decimal numbers to the nearest tenth, hundredth, or whole number, as applicable, in various contexts	
 Activities	
B1 Fractions, decimals & percents	Nearest Whole Number
	Rounding Decimals 1
 Skill Quests	
Round decimals	Rounding decimals to any place

7.B1.7 convert between fractions, decimal numbers, and percents, in various contexts	
 Activities	
B1 Fractions, decimals & percents	Fractions to Decimals
	Decimals to Fractions 1
	Convert Decimals to Fractions 2
	Percents to Fractions
	Percents and Decimals
	Fraction to Terminating Decimal
 Skill Quests	
Convert fractions, decimals, percents	Equivalent fractions, decimals & percents
	Representing percents & decimals
	Representing common fractions as percents

B2 Operations: Properties and Relationships

7.B2.1 use the properties and order of operations, and the relationships between operations, to solve problems involving whole numbers, decimal numbers, fractions, ratios, rates, and percents, including those requiring multiple steps or multiple operations
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Activities	
B2 Order of operations	Addition Properties
	Multiplication Properties
	Order of Operations 1 (BEDMAS)
	Money Problems: Four Operations
	What Percentage?
	Percentage Word Problems
Skill Quests	
Properties & order of operations	The commutative property
	The associative property
	The distributive property
	Order of operations

B2 Operations: Math Facts


7.B2.2	
understand and recall commonly used percents, fractions, and decimal equivalents	
Activities	
B2 Order of operations	Match Decimals and Percentages
	Common Fractions as Percentages
	Fractions to Percentages (Non-Calculator)
Skill Quests	
Percent/fraction/decimal equivalents	Common percents, fractions, & decimal equivalents



B2 Operations: Mental Math

7.B2.3	
use mental math strategies to increase and decrease a whole number by 1%, 5%, 10%, 25%, 50%, and 100%, and explain the strategies used	
Activities	
B2 Order of operations	Percent of a Number (Mental)
	Percentage Change: Increase and Decrease
	Percent Increase and Decrease
Skill Quests	
Mental math: percents	Use 50%, 10% & 1% to mentally calculate amounts
	Finding the percent of a number
	Increasing & decreasing amounts by percents



B2 Operations: Addition and Subtraction



7.B2.4	
use objects, diagrams, and equations to represent, describe, and solve situations involving addition and subtraction of integers	
Activities	
B2 Addition & subtraction of integers	Add Integers
	Subtract Integers



	Integers: Add and Subtract
	Negative or Positive?
	More with Integers
 Skill Quests	
Add & subtract integers	Adding & subtracting integers
	Adding & subtracting integers with models



7.B2.5 add and subtract fractions, including by creating equivalent fractions, in various contexts	
 Activities	
B2 Addition & subtraction of integers	Equivalent Fractions
	Add: Common Denominator
	Add: No Common Denominator
	One Take Fraction
	Subtract: Common Denominator
	Subtract: No Common Denominator
 Skill Quests	
Add fractions & mixed numbers	Adding fractions, like denominator
	Adding a whole number & a fraction
	Adding fractions, unlike denominator
Subtract fractions & mixed numbers	Subtracting fractions, like denominator
	Subtracting a fraction from a whole number
	Subtracting fractions, unlike denominator
Add & subtract fractions, word problems	Adding & subtracting fractions, word problems



B2 Operations: Multiplication and Division

7.B2.6 determine the greatest common factor for a variety of whole numbers up to 144 and the lowest common multiple for two and three whole numbers	
 Activities	
B2 Multiplication & division	Greatest Common Factor
	Lowest Common Multiple
 Skill Quests	
GCF & LCM	Finding factors & the greatest common factor
	Finding multiples & the lowest common multiple

7.B2.7 evaluate and express repeated multiplication of whole numbers using exponential notation, in various contexts	
 Activities	
B2 Multiplication & division	Exponent Notation
	Exponent Form to Numbers
 Skill Quests	
Exponential notation	Expressing numbers in exponential notation
	Describe/evaluate numbers in exponential notation

7.B2.8 multiply and divide fractions by fractions, using tools in various contexts	
 Activities	
B2 Multiplication & division	Model Fractions to Multiply
	Multiply Fraction by Whole Number
	Multiply Fraction by Fraction
	Multiplying Fractions
	Divide by a Unit Fraction
	Divide Whole Number by Fraction
	Divide Fractions Visual Model
	Dividing Fractions
 Skill Quests	
Multiply & divide fractions	Multiplying fractions
	Dividing fractions

7.B2.9 multiply and divide decimal numbers by decimal numbers, in various contexts	
 Activities	
B2 Multiplication & division	Multiply Decimals: 10, 100, 1000
	Multiply Decimal by Whole Number
	Multiply Decimals: Area Model
	Multiply Decimals 1
	Divide Decimals: 10, 100, 1000
	Divide Decimal by Whole Number
	Divide Decimals
 Skill Quests	
Multiply & divide decimals	Multiplying decimals
	Dividing decimals
	Decimal word problems, multiplying & dividing

7.B2.10 identify proportional and non-proportional situations and apply proportional reasoning to solve problems	
 Activities	
B2 Ratio & rates	Ratio Word Problems
	Solve Proportions
	Ratio and Proportion
	Best Buy
	Average Speed
	Rate Word Problems
	Rates
 Skill Quests	
Proportional/non-proportional situations	Identifying proportional relationships
	Graphing proportional relationships
	Identifying the constant of proportionality, table
	Solving proportions problems

C Algebra

C1 Patterns and Relationships: Patterns

7.C1.1

identify and compare a variety of repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and compare linear growing patterns on the basis of their constant rates and initial values

Activities

C1 Patterns

Describing Patterns

Skill Quests

ID/compare patterns, including linear

Comparing pattern rules

Identifying geometric patterns

7.C1.2

create and translate repeating, growing, and shrinking patterns involving whole numbers and decimal numbers using various representations, including algebraic expressions and equations for linear growing patterns

Activities

C1 Patterns

Increasing Patterns

Decreasing Patterns

Skill Quests

Create patterns, whole numbers/decimals

Create patterns, whole numbers/fractions/decimals

Linear growing patterns

7.C1.3

determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns involving whole numbers and decimal numbers, and use algebraic representations of the pattern rules to solve for unknown values in linear growing patterns

Activities

C1 Patterns

Table of Values

Find the Pattern Rule

Pattern Rules and Tables

Skill Quests

Pattern rules, whole numbers & decimals

Investigate/extend patterns represented in a table

Find & use the n th term, linear patterns

Making predictions about linear growing patterns

7.C1.4

create and describe patterns to illustrate relationships among integers

Activities



Teacher directed



Skill Quests

Patterns with integers



Patterns with integers, adding & subtracting


C2 Equations and Inequalities: Variables and Expressions


7.C2.1	
add and subtract monomials with a degree of 1 that involve whole numbers, using tools	
 Activities	
Teacher directed	
 Skill Quests	
Add & subtract monomials	Adding & subtracting monomials

7.C2.2	
evaluate algebraic expressions that involve whole numbers and decimal numbers	
 Activities	
C2 Variables & expressions	Simple Substitution 1
	Simple Substitution
	Simple Substitution 2
	Simple Substitution 3
 Skill Quests	
Evaluate algebraic expressions	Evaluating algebraic expressions



C2 Equations and Inequalities: Equations and Inequalities



7.C2.3	
solve equations that involve multiple terms, whole numbers, and decimal numbers in various contexts, and verify solutions	
 Activities	
C2 Equations & inequalities	Solve Equations: Add, Subtract 1
	Solve Equations: Add, Subtract 2
	Solve Equations: Multiply, Divide 1
	Solve Equations: Multiply, Divide 2
	Solving Simple Equations
	Solve One-Step Equations
	Solving More Equations
	Checking Solutions
 Skill Quests	
Solve equations: whole numbers, decimals	Solving 1-step addition & subtraction equations
	Solving 1-step multiplication & division equations
	Solving 1-step equations, mixed operations
	Solving 2-step equations, mixed operations
	Solving linear equations, variables on both sides
	Solving linear equations with grouping symbols
Using substitution to verify solutions	

7.C2.4	
solve inequalities that involve multiple terms and whole numbers, and verify and graph the solutions	
 Activities	

C2 Equations & inequalities	Solve One-Step Inequalities 1
	Solve One-Step Inequalities 2
	Graphing Inequalities 2
	Graphing Inequalities on Number Line
 Skill Quests	
Solve inequalities	Solving inequalities



C3 Coding: Coding Skills



7.C3.1	
solve problems and create computational representations of mathematical situations by writing and executing efficient code, including code that involves events influenced by a defined count and/or sub-program and other control structures	
 Activities	
Teacher directed	
 Skill Quests	
Teacher directed	

7.C3.2	
read and alter existing code, including code that involves events influenced by a defined count and/or sub-program and other control structures, and describe how changes to the code affect the outcomes and the efficiency of the code	
 Activities	
Teacher directed	
 Skill Quests	
Teacher directed	

D Data



D1 Data Literacy: Data Collection and Organization



7.D1.1	
explain why percentages are used to represent the distribution of a variable for a population or sample in large sets of data, and provide examples	
 Activities	
Teacher directed	
 Skill Quests	
Teacher directed	

7.D1.2	
collect qualitative data and discrete and continuous quantitative data to answer questions of interest, and organize the sets of data as appropriate, including using percentages	
 Activities	
D1 Data literacy	Tally Charts
	Grouped Frequency
 Skill Quests	



Qualitative & quantitative data	Statistical investigations using sampling
	Relative frequency
	Classifying data

D1 Data Literacy: Data Visualization

7.D1.3	
select from among a variety of graphs, including circle graphs, the type of graph best suited to represent various sets of data; display the data in the graphs with proper sources, titles, and labels, and appropriate scales; and justify their choice of graphs	
 Activities	
Teacher directed	
 Skill Quests	
Select graphs & display data	Constructing histograms
	Constructing line plots
	Constructing stacked-bar graphs
	Constructing broken-line graphs
	Constructing circle graphs
	Selecting appropriate data displays

7.D1.4	
create an infographic about a data set, representing the data in appropriate ways, including in tables and circle graphs, and incorporating any other relevant information that helps to tell a story about the data	
 Activities	
Teacher directed	
 Skill Quests	
Teacher directed	

D1 Data Literacy: Data Analysis

7.D1.5	
determine the impact of adding or removing data from a data set on a measure of central tendency, and describe how these changes alter the shape and distribution of the data	
 Activities	
D1 Data literacy	Mean from Frequency Table
	Median from Frequency Table
	Mode from Frequency Table
	Which Measure of Central Tendency?
 Skill Quests	
Measures of central tendency	Investigating the effect of outliers
	The effect of adding or removing data

7.D1.6	
analyse different sets of data presented in various ways, including in circle graphs and in misleading graphs, by asking and answering questions about the data, challenging preconceived notions, and drawing conclusions, then make convincing arguments and informed decisions	

Activities	
D1 Data literacy	Interpreting Data Tables
	Bar Graphs 1
	Divided Bar Graphs
	Frequency Histograms
	Histograms
	Line Graphs: Interpretation
	Circle Graphs
	Stem and Leaf Plots: Concept
	Double Stem and Leaf Plots
Skill Quests	
Analyse data displays	Identifying skewed & symmetrical sets of data
	Analysing misleading data displays

D2 Probability: Probability


7.D2.1	
describe the difference between independent and dependent events, and explain how their probabilities differ, providing examples	
Activities	
Teacher directed	
Skill Quests	
Understand independent/dependent events	Understanding independent & dependent events



7.D2.2	
determine and compare the theoretical and experimental probabilities of two independent events happening and of two dependent events happening	
Activities	
D2 Probability	Simple Probability
	Introductory Probability
	Find the Probability
	Relative Frequency
	Probability With Replacement
	Dice and Coins
Skill Quests	
Probability independent/dependent events	Finding experimental & theoretical probabilities
	Identifying the sample space, 2 independent events
	Comparing experimental & theoretical probability

E Spatial Sense



E1 Geometric and Spatial Reasoning: Geometric and Spatial Reasoning



7.E1.1	
describe and classify cylinders, pyramids, and prisms according to their geometric properties, including plane and rotational symmetry	
Activities	

E1 Geometry & Spatial reasoning	Match the Object
	Collect the Objects 2
	Properties of Solids
 Skill Quests	
Cylinders, pyramids & prisms	Comparing, describing & naming prisms & pyramids
	Properties of cylinders, prisms & pyramids


7.E1.2	
draw top, front, and side views, as well as perspective views, of objects and physical spaces, using appropriate scales	
 Activities	
Teacher directed	
 Skill Quests	
Top, front & side views of 3-D objects	Drawing top, front & side views of 3-D objects


E1 Geometric and Spatial Reasoning: Location and Movement



7.E1.3	
perform dilations and describe the similarity between the image and the original shape	
 Activities	
E1 Geometry & Spatial reasoning	Scale Factor
	Similar Figures
	Similar Figures 1
 Skill Quests	
Dilations & similarity	Exploring the effects of dilations

7.E1.4	
describe and perform translations, reflections, and rotations on a Cartesian plane, and predict the results of these transformations	
 Activities	
E1 Geometry & Spatial reasoning	Transformations
	Transformations: Coordinate Plane
	Rotations: Coordinate Plane
	Rotational Symmetry
 Skill Quests	
Transformations on the Cartesian plane	Transformations of shapes on the Cartesian plane
	Translations on the Cartesian plane
	Reflections on the Cartesian plane
	Rotations on the Cartesian plane



E2 Measurement: The Metric System



7.E2.1	
describe the differences and similarities between volume and capacity, and apply the relationship between millilitres (mL) and cubic centimetres (cm ³) to solve problems	
 Activities	



E2 Measurement	Capacity Word Problems
 Skill Quests	
Volume & capacity	Solving volume & capacity problems

<p align="center">7.E2.2</p> <p align="center">solve problems involving perimeter, area, and volume that require converting from one metric unit of measurement to another</p>	
 Activities	
E2 Measurement	Converting cm and mm
	Metres and Kilometres
	Converting Units of Length
	Converting Units of Mass
	Converting Units of Area
	Converting Volume
	Perimeter: Triangles
	Calculate Area of Squares and Rectangles
	Area: Quadrilaterals
	Surface Area: Rectangular Prisms
	Volume: Rectangular Prisms 1
 Skill Quests	
Convert units of length, area, volume	Converting units of length
	Converting units of area
	Converting units of volume



E2 Measurement: Circles



<p align="center">7.E2.3</p> <p align="center">use the relationships between the radius, diameter, and circumference of a circle to explain the formula for finding the circumference and to solve related problems</p>	
 Activities	
E2 Measurement	Identify Parts of Circles 1
	Calculate Circumference of Circles
 Skill Quests	
Circumference of a circle	Finding the circumference of a circle
	Introducing the parts of a circle

<p align="center">7.E2.4</p> <p align="center">construct circles when given the radius, diameter, or circumference</p>	
 Activities	
Teacher directed	
 Skill Quests	
Teacher directed	

7.E2.5 show the relationships between the radius, diameter, and area of a circle, and use these relationships to explain the formula for measuring the area of a circle and to solve related problems	
 Activities	
E2 Measurement	Area: Circles 1
 Skill Quests	
Area of a circle	Finding the area of a circle, formula
	Finding the radius or diameter given the area



E2 Measurement: Volume and Surface Area

7.E2.6 represent cylinders as nets and determine their surface area by adding the areas of their parts	
 Activities	
E2 Measurement	Surface Area: Cylinders
 Skill Quests	
Surface area: cylinders	Finding the surface area of a cylinder

7.E2.7 show that the volume of a prism or cylinder can be determined by multiplying the area of its base by its height, and apply this relationship to find the area of the base, volume, and height of prisms and cylinders when given two of the three measurements	
 Activities	
E2 Measurement	Volume: Cylinders
 Skill Quests	
Volume: prisms & cylinders	Finding the volume of a cube
	Finding the volume of a prism
	Finding the height or area, rectangular prism
	Finding the volume of a triangular prism
	Finding a missing dimension, triangular prism
	Finding the volume of a cylinder
	Finding a missing dimension, cylinder

F Financial Literacy

F1 Money and Finances: Money Concepts

7.F1.1 identify and compare exchange rates, and convert foreign currencies to Canadian dollars and vice versa	
 Activities	
Teacher directed	
 Skill Quests	
Teacher directed	

F1 Money and Finances: Financial Management

7.F1.2

identify and describe various reliable sources of information that can help with planning for and reaching a financial goal

Activities

Teacher directed

Skill Quests

Teacher directed

7.F1.3

create, track, and adjust sample budgets designed to meet longer-term financial goals for various scenarios

Activities

F1 Money & finances

Budgeting

Skill Quests

Simple financial plans

Creating simple financial plans

7.F1.4

identify various societal and personal factors that may influence financial decision making, and describe the effects that each might have

Activities

Teacher directed

Skill Quests

Teacher directed

F1 Money and Finances: Consumer and Civic Awareness

7.F1.5

explain how interest rates can impact savings, investments, and the cost of borrowing to pay for goods and services over time

Activities

F1 Money & finances

Simple Interest

Compound Interest

Credit Card Repayments

Skill Quests

Teacher directed

7.F1.6

compare interest rates and fees for different accounts and loans offered by various financial institutions, and determine the best option for different scenarios

Activities

Teacher directed

Skill Quests

Teacher directed

Grade 8

B Number

B1 Number Sense: Rational and Irrational Numbers

8.B1.1

represent and compare very large and very small numbers, including through the use of scientific notation, and describe various ways they are used in everyday life

Activities

B1 Rational & irrational numbers

Scientific Notation 1

Scientific Notation

Scientific Notation 2

Skill Quests

Scientific notation

Introducing scientific notation

Writing & comparing numbers in scientific notation

8.B1.2

describe, compare, and order numbers in the real number system (rational and irrational numbers), separately and in combination, in various contexts

Activities

B1 Rational & irrational numbers

Irrational Numbers

Ordering Integers (Number Line)

Mixed and Improper Fractions on a Number Line

Comparing Fractions with Signs

Decimals on the Number Line

Decimal Order 1

Comparing Decimals 1

Skill Quests

The real number system

Classifying real numbers

Comparing rational & irrational numbers

8.B1.3

estimate and calculate square roots, in various contexts

Activities

B1 Rational & irrational numbers

Square Roots 1

Square Roots

Estimating Square Roots



Skill Quests

Square roots



Square roots of non-perfect squares

Finding square roots



B1 Number Sense: Fractions, Decimals, and Percents

8.B1.4 use fractions, decimal numbers, and percents, including percents of more than 100% or less than 1%, interchangeably and flexibly to solve a variety of problems	
 Activities	
B1 Fractions, decimals & percents	Percentage Word Problems
	Percentage of an amount using fractions (<100%)
	Percents of a quantity (>100%)
	Quantities to Percents (no units)
	Percentage of an amount using decimals (calculator)
	Solve Percent Equations
	Percent Increase and Decrease
	Successive Discounts
	Commission
	Profit and Loss
 Skill Quests	
Fractions, decimals & percents	Converting decimals to percents & fractions
	Converting fractions to decimals & percents
	Converting percents to fractions
	Converting percents to decimals
	Solving word problems involving percents
	Percents greater than 100%
	Solving problems involving consecutive percents
	Increasing & decreasing amounts by percents
	Solving problems involving combined percents



B2 Operations: Properties and Relationships

8.B2.1 use the properties and order of operations, and the relationships between operations, to solve problems involving rational numbers, ratios, rates, and percents, including those requiring multiple steps or multiple operations	
 Activities	
B2 Order of operations	Addition Properties
	Multiplication Properties
	Order of Operations 1 (BEDMAS)
	Adding and Subtracting Decimals
	Decimal by Decimal
	Divide Decimals
 Skill Quests	
Properties & order of operations	The commutative property
	The associative property
	The distributive property
	Order of operations, integers
	Order of operations, decimals & fractions



B2 Operations: Math Facts


8.B2.2 understand and recall commonly used square numbers and their square roots	
 Activities	
Teacher directed	
 Skill Quests	
Recall square numbers & square roots	Recalling square numbers & their square roots


B2 Operations: Mental Math

8.B2.3 use mental math strategies to multiply and divide whole numbers and decimal numbers up to thousandths by powers of ten, and explain the strategies used	
 Activities	
B2 Order of operations	Mental Methods Multiplication 1
	Mental Methods Multiplication 2
	Mental Methods Multiplication 3
	Mental Methods Division 1
	Mental Methods Division 2
	Mental Methods Division 3
 Skill Quests	
Multiply & divide by powers of 10	Multiplying decimals by powers of 10
	Dividing decimals by powers of 10



B2 Operations: Addition and Subtraction



8.B2.4 add and subtract integers, using appropriate strategies, in various contexts	
 Activities	
B2 Addition & subtraction of integers	Add Integers
	Subtract Integers
	Integers: Add and Subtract
	Negative or Positive?
	More with Integers
 Skill Quests	
Add & subtract integers	Adding & subtracting integers
	Adding & subtracting integers with models


8.B2.5 add and subtract fractions, using appropriate strategies, in various contexts	
 Activities	
B2 Addition & subtraction of integers	Add: Common Denominator
	Add: No Common Denominator


	Add Mixed Numbers: Same Sign
	Add Unlike Mixed Numbers
	One Take Fraction
	Subtract: Common Denominator
	Subtract: No Common Denominator
	Subtract Like Mixed Numbers
	Subtract Mixed Numbers: Signs Differ
 Skill Quests	
Add fractions & mixed numbers	Adding fractions, like denominator
	Adding a whole number & a fraction
	Adding fractions, unlike denominator
Subtract fractions & mixed numbers	Subtracting fractions, like denominator
	Subtracting a fraction from a whole number
	Subtracting fractions, unlike denominator
Add & subtract fractions, word problems	Adding & subtracting fractions, word problems

B2 Operations: Multiplication and Division

8.B2.6	
multiply and divide fractions by fractions, as well as by whole numbers and mixed numbers, in various contexts	
 Activities	
B2 Multiplication & division	Multiply Fraction by Whole Number
	Multiply Fraction by Fraction
	Multiplying Fractions
	Dividing Fractions
 Skill Quests	
Multiply fractions & mixed numbers	Multiplying fractions by whole numbers
	Multiplying fractions & mixed numbers
Divide fractions & mixed numbers	Dividing fractions & whole numbers
	Dividing fractions & mixed numbers



8.B2.7	
multiply and divide integers, using appropriate strategies, in various contexts	
 Activities	
B2 Multiplication & division	Multiplying and Dividing Integers
	Integers: Multiply and Divide
 Skill Quests	
Multiply & divide integers	Multiplying integers
	Dividing integers
	Multiplying & dividing integers



8.B2.8	
compare proportional situations and determine unknown values in proportional situations, and apply proportional reasoning to solve problems in various contexts	
 Activities	



B2 Multiplication & division	Ratio Word Problems
	Solve Proportions
	Ratio and Proportion
 Skill Quests	
Proportional reasoning	Solving proportions problems
	Comparing rates
	Identifying the constant of proportionality
	Comparing proportional relationships
	Graphs of proportional relationships



C Algebra

C1 Patterns and Relationships: Patterns



8.C1.1	
identify and compare a variety of repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and compare linear growing and shrinking patterns on the basis of their constant rates and initial values	
 Activities	
C1 Patterns	Describing Patterns
 Skill Quests	
Identify & compare patterns	Comparing linear growing & shrinking patterns



8.C1.2	
create and translate repeating, growing, and shrinking patterns involving rational numbers using various representations, including algebraic expressions and equations for linear growing and shrinking patterns	
 Activities	
Teacher directed	
 Skill Quests	
Create patterns, rational numbers	Modelling real-life relationships
	Continuing & creating sequences, rational numbers
	Representing linear growing patterns

8.C1.3	
determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in growing and shrinking patterns involving rational numbers, and use algebraic representations of the pattern rules to solve for unknown values in linear growing and shrinking patterns	
 Activities	
C1 Patterns	Table of Values
	Increasing Patterns
	Decreasing Patterns
	Find the Pattern Rule
	Pattern Rules and Tables
 Skill Quests	
Pattern rules, rational numbers	Finding the nth term, rational coefficients
	Use the nth term rule for a linear pattern
	Investigate linear relationships, Cartesian plane



8.C1.4 create and describe patterns to illustrate relationships among rational numbers	
 Activities	
Teacher directed	
 Skill Quests	
Teacher directed	



C2 Equations and Inequalities: Variables and Expressions

8.C2.1 add and subtract monomials with a degree of 1, and add binomials with a degree of 1 that involve integers, using tools	
 Activities	
Teacher directed	
 Skill Quests	
Add & subtract monomials & binomials	Adding & subtracting monomials & binomials



8.C2.2 evaluate algebraic expressions that involve rational numbers	
 Activities	
C2 Variables & expressions	Substitution with Fractions
	Complex Substitution
 Skill Quests	
Evaluate algebraic expressions	Evaluating algebraic expressions



C2 Equations and Inequalities: Equations and Inequalities

8.C2.3 solve equations that involve multiple terms, integers, and decimal numbers in various contexts, and verify solutions	
 Activities	
C2 Equations & inequalities	Equations with Grouping Symbols
	Solve Multi-Step Equations
	Equations with Decimals
	Equations: Variables, Both Sides
	Solving More Equations
	Equations to Solve Problems
	Checking Solutions
 Skill Quests	
Solve equations: integers, decimals	Solving 1-step equations, add & subtract
	Solving 1-step equations, multiply & divide
	Solving 1 & 2-step equations, mixed operations
	Solving 3-step equations, mixed operations
	Solving linear equations, variables on both sides
	Solving linear equations, expanding brackets
	Checking solutions to equations by substituting

8.C2.4 solve inequalities that involve integers, and verify and graph the solutions	
 Activities	
C2 Equations & inequalities	Solving Inequalities 1
	Solve Two-Step Inequalities
	Solving Inequalities 2
	Solving Inequalities 3
	Graphing Inequalities 3
 Skill Quests	
Solve inequalities involving integers	Solving 1-step inequalities
	Solving 2-step inequalities
	Solving inequalities with variables on both sides
	Graphing solutions of inequalities, number line
	Checking solutions of inequalities
	Graphing inequalities with two variables



C3 Coding: Coding Skills



.C3.1 solve problems and create computational representations of mathematical situations by writing and executing code, including code that involves the analysis of data in order to inform and communicate decisions
 Activities
Teacher directed
 Skill Quests
Teacher directed

8.C3.2 read and alter existing code involving the analysis of data in order to inform and communicate decisions, and describe how changes to the code affect the outcomes and the efficiency of the code
 Activities
Teacher directed
 Skill Quests
Teacher directed



D Data



D1 Data Literacy: Data Collection and Organization

8.D1.1	
identify situations involving one-variable data and situations involving two-variable data, and explain when each type of data is needed	
 Activities	
Teacher directed	
 Skill Quests	
Identify one & two-variable data	Identifying one & two-variable data



8.D1.2 collect continuous data to answer questions of interest involving two variables, and organize the data sets as appropriate in a table of values	
 Activities	
Teacher directed	
 Skill Quests	
Teacher directed	

D1 Data Literacy: Data Visualization

8.D1.3 select from among a variety of graphs, including scatter plots, the type of graph best suited to represent various sets of data; display the data in the graphs with proper sources, titles, and labels, and appropriate scales; and justify their choice of graphs	
 Activities	
D1 Bivariate data	Travel Graphs
	Data Analysis: Scatter Plots
 Skill Quests	
Select graphs & display data	Constructing line plots
	Constructing histograms
	Constructing line graphs
	Constructing scatter plots

8.D1.4 create an infographic about a data set, representing the data in appropriate ways, including in tables and scatter plots, and incorporating any other relevant information that helps to tell a story about the data	
 Activities	
Teacher directed	
 Skill Quests	
Teacher directed	

D1 Data Literacy: Data Analysis

8.D1.5 use mathematical language, including the terms “strong”, “weak”, “none”, “positive”, and “negative”, to describe the relationship between two variables for various data sets with and without outliers	
 Activities	
D1 Bivariate data	Scatter Plots
	Correlation
 Skill Quests	
Relationships in two-variable data	Describing relationships in scatter plots

8.D1.6

analyse different sets of data presented in various ways, including in scatter plots and in misleading graphs, by asking and answering questions about the data, challenging preconceived notions, and drawing conclusions, then make convincing arguments and informed decisions

Activities

D1 Bivariate data

Line Graphs: Interpretation

Travel Graphs

Data Analysis: Scatter Plots

Skill Quests

Analyse & interpret graphs

Interpreting information from secondary sources

Interpreting data in various graphs

Analyzing misleading graphs

D2 Probability: Probability

8.D2.1

solve various problems that involve probability, using appropriate tools and strategies, including Venn and tree diagrams

Activities

D2 Probability

Venn Diagrams

Venn Diagram 1

Tree Diagrams

Tree Diagram

Probability Tables

Two-way Table Probability

Skill Quests

Probability with Venn & tree diagrams

Theoretical probability with tree diagrams

Identifying & representing the sample space

Probability: independent/dependent combined events

Using data presented in Venn diagrams

The counting principle

8.D2.2

determine and compare the theoretical and experimental probabilities of multiple independent events happening and of multiple dependent events happening

Activities

D2 Probability

Relative Frequency

Skill Quests

Probability independent/dependent events

Comparing experimental & theoretical probability

Finding the probability of independent events

Finding the probability of dependent events

E Spatial Sense

E1 Geometric and Spatial Reasoning: Geometric and Spatial Reasoning

8.E1.1	
identify geometric properties of tessellating shapes and identify the transformations that occur in the tessellations	
Activities	
Teacher directed	
Skill Quests	
Tessellations	Recognizing tessellations
	Rotational symmetry

8.E1.2	
make objects and models using appropriate scales, given their top, front, and side views or their perspective views	
Activities	
Teacher directed	
Skill Quests	
Top, front & side views of 3- D objects	Drawing top, front & side views of 3-D objects
Nets of 3-D objects	Connecting 3-D objects with their nets



8.E1.3	
use scale drawings to calculate actual lengths and areas, and reproduce scale drawings at different ratios	
Activities	
E1 Spatial reasoning	Floor Plans
	Similar Triangles
	Ratio of Intercepts
Skill Quests	
Scale drawings	Using scales on maps
	Solving problems using scale drawings

E1 Geometric and Spatial Reasoning: Location and Movement



8.E1.4	
describe and perform translations, reflections, rotations, and dilations on a Cartesian plane, and predict the results of these transformations	
Activities	
E1 Spatial reasoning	Transformations: Coordinate Plane
	Rotations: Coordinate Plane
Skill Quests	
Transformations on the Cartesian plane	Plotting transformations on the Cartesian plane
	Dilations with mapping rules
	Translations with mapping rules
	Rotations with mapping rules
	Reflections with mapping rules
	Combinations of transformations with mapping rules

	Congruency
	Similarity
	Identifying the scale factor


E2 Measurement: The Metric System

8.E2.1 represent very large (mega, giga, tera) and very small (micro, nano, pico) metric units using models, base ten relationships, and exponential notation	
 Activities	
Teacher directed	
 Skill Quests	
Very large & small metric units	Very large & small metric units, exponents

E2 Measurement: Lines and Angles

8.E2.2 solve problems involving angle properties, including the properties of intersecting and parallel lines and of polygons	
 Activities	
E2 Angle relationships	Angle Measures in a Triangle
	Exterior Angles of a Triangle
	Interior Angles
	Quadrilaterals: Angle Sum with Equations
	Plane Figure Theorems
	Vertically Opposite: Value of x
	Equal, Complementary or Supplementary Angles?
	Complementary, Supplementary or Neither
	Angles of Revolution: Unknown Values
	Parallel Lines
	Introduction to Angles on Parallel Lines 1
	Angles on Parallel Lines
	Introduction to Angles on Parallel Lines 3
	Are the Lines Parallel?
 Skill Quests	
Solve problems using angle properties	Calculating the interior angles of polygons
	Calculating supplementary & complementary angles
	Angles on parallel lines cut by a transversal

E2 Measurement: Length, Area, and Volume

7.E2.6 represent cylinders as nets and determine their surface area by adding the areas of their parts	
 Activities	
E2 Perimeter, area & volume	Perimeter Detectives 1
	Perimeter Detectives 2
	Calculate Circumference of Circles

	Area: Triangles
	Area: Composite Shapes
	Area: Sectors (Degrees)
	Surface Area: Triangular Prisms 1
	Volume: Prisms
	Volume of Triangular Prisms
	Volume: Composite Figures
	Similar Areas and Volumes
👑 Skill Quests	
Composite shapes & objects	Calculating the area of composite shapes
	Calculating the perimeter of composite shapes
	Calculating the volume of composite shapes
	Calculating the surface area of composite shapes



8.E2.4 describe the Pythagorean relationship using various geometric models, and apply the theorem to solve problems involving an unknown side length for a given right triangle	
📋 Activities	
E2 Pythagoras' Theorem	Pythagorean Theorem
	Pythagoras' Theorem
	Pythagorean Triads
	Pythagoras: Find a Short Side (integers only)
	Pythagoras: Find a Short Side (rounding needed)
	Pythagoras: Find a Short Side (decimal values)
👑 Skill Quests	
The Pythagorean theorem	Identifying the sides of a right triangle
	Identifying right triangles, Pythagorean Theorem
	Identifying Pythagorean triples
	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



F Financial Literacy



F1 Money and Finances: Money Concepts

8.F1.1 describe some advantages and disadvantages of various methods of payment that can be used when dealing with multiple currencies and exchange rates	
📋 Activities	
Teacher directed	
👑 Skill Quests	
Teacher directed	



F1 Money and Finances: Financial Management

8.F1.2 create a financial plan to reach a long-term financial goal, accounting for income, expenses, and tax implications	
 Activities	
F1 Money & finances	Calculating Income Tax
	Net Pay
	Deductions and Net Pay
	Wages and Salaries
 Skill Quests	
Create simple financial plans	Creating simple financial plans

8.F1.3 identify different ways to maintain a balanced budget, and use appropriate tools to track all income and spending, for several different scenarios	
 Activities	
F1 Money & finances	Calculating Income Tax
	Net Pay
	Deductions and Net Pay
	Wages and Salaries
 Skill Quests	
Teacher directed	

8.F1.4 determine the growth of simple and compound interest at various rates using digital tools, and explain the impact interest has on long-term financial planning	
 Activities	
F1 Money & finances	Simple Interest
	Compound Interest
 Skill Quests	
Simple & compound interest	Solving problems involving simple interest
	Solving problems involving compound interest
	Comparing simple & compound interest

F1 Money and Finances: Consumer and Civic Awareness

8.F1.5 compare various ways for consumers to get more value for their money when spending, including taking advantage of sales and customer loyalty and incentive programs, and determine the best choice for different scenarios	
 Activities	
F1 Money & finances	Purchase Options
	Best Buy
 Skill Quests	
Teacher directed	

8.F1.6

compare interest rates, annual fees, and rewards and other incentives offered by various credit card companies and consumer contracts to determine the best value and the best choice for different scenarios

Activities

F1 Money & finances

Credit Card Repayments

Skill Quests

Teacher directed



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