

Mathletics

Ontario Program of Studies

Skill Quests

Grades 7 – 8
May, 2022

Mathletics

Mathletics

Ontario Program of Studies

Skill Quests

May 2022

Grade 7	4
1 Number	4
1.1 Number sense: demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life	4
1.2 Operations: use knowledge of numbers and operations to solve mathematical problems encountered in everyday life.....	5
2 Algebra	7
2.1 Patterns and relationships: identify, describe, extend, create, and make predictions about a variety of patterns, including those found in real-life contexts.....	7
2.2 Equations and inequalities: demonstrate an understanding of variables, expressions, equalities, and inequalities, and apply this understanding in various contexts.....	7
2.3 Coding: solve problems and create computational representations of mathematical situations using coding concepts and skills.....	8
3 Data	9
3.1 Data literacy: manage, analyse, and use data to make convincing arguments and informed decisions, in various contexts drawn from real life	9
3.2 Probability: describe the likelihood that events will happen, and use that information to make predictions.....	10
4 Spatial Sense	11
4.1 Geometric and spatial reasoning: describe and represent shape, location, and movement by applying geometric properties and spatial relationships in order to navigate the world around them	11
4.2 Measurement: compare, estimate, and determine measurements in various contexts	11
5 Financial Literacy	13
5.1 Money and finances: demonstrate the knowledge and skills needed to make informed financial decisions	13
Grade 8	14
1 Number	14
1.1 Number sense: demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life	14
1.2 Operations: use knowledge of numbers and operations to solve mathematical problems encountered in everyday life.....	15
1.3 Patterns and relationships: identify, describe, extend, create, and make predictions about a variety of patterns, including those found in real-life contexts.....	16

1.4 Equations and inequalities: demonstrate an understanding of variables, expressions, equations, and inequalities, and apply this understanding in various contexts	17
1.5 Coding: solve problems and create computational representations of mathematical situations using coding concepts and skills	18
2 Data	19
2.1 Data literacy: manage, analyse, and use data to make convincing arguments and informed decisions, in various contexts drawn from real life	19
2.2 Probability: describe the likelihood that events will happen, and use that information to make predictions.....	20
3 Spatial Sense.....	21
3.1 Geometric and spatial reasoning: describe and represent shape, location, and movement by applying geometric properties and spatial relationships in order to navigate the world around them	21
3.2 Measurement: compare, estimate, and determine measurements in various contexts	21
4 Financial Literacy.....	23
4.1 Money and finances: demonstrate the knowledge and skills needed to make informed financial decisions	23

Grade 7

1 Number

1.1 Number sense: demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life

Outcome	Quests	Content
1. Rational numbers: 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	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
		Using place value to partition numbers of any size
		Rounding 6-digit numbers
2. Rational numbers: identify and represent perfect squares, and determine their square roots, in various contexts	Perfect squares & square roots	Finding square roots of perfect squares
		Identifying & representing perfect squares
3. Rational numbers: read, represent, compare, and order rational numbers, including positive and negative fractions and decimal numbers to thousandths, in various contexts	Represent/compare/order rational numbers	Comparing & ordering rational numbers
		Understanding rational numbers
4. Fractions, decimals, and percents: use equivalent fractions to simplify fractions, when appropriate, in various contexts	Simplify fractions	Simplifying fractions
5. Fractions, decimals, and percents: generate fractions and decimal numbers between any two quantities	Fractions/decimals between 2 quantities	Fractions & decimals between two quantities
6. Fractions, decimals, and percents: round decimal numbers to the nearest tenth, hundredth, or whole number, as applicable, in various contexts	Round decimals	Rounding decimals to any place

7. Fractions, decimals, and percents: convert between fractions, decimal numbers, and percents, in various contexts	Convert fractions, decimals, percents	Equivalent fractions, decimals & percents
		Representing percents & decimals
		Representing common fractions as percents

1.2 Operations: use knowledge of numbers and operations to solve mathematical problems encountered in everyday life

Outcome	Quests	Content
1. Properties and relationships: 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	Properties & order of operations	The commutative property
		The associative property
		The distributive property
		Order of operations
2. Math facts: understand and recall commonly used percents, fractions, and decimal equivalents	Percent/fraction/decimal equivalents	Common percents, fractions, & decimal equivalents
3. Mental math: use mental math strategies to increase and decrease a whole number by 1%, 5%, 10%, 25%, 50%, and 100%, and explain the strategies used	Mental math: percents	Use 50%, 10% & 1% to mentally calculate amounts
		Finding the percent of a number
		Increasing & decreasing amounts by percents
4. Addition and subtraction: use objects, diagrams, and equations to represent, describe, and solve situations involving addition and subtraction of integers	Understand integers	Investigating integers
		Comparing & ordering integers
	Add & subtract integers	Adding & subtracting integers
		Adding & subtracting integers with models
5. Addition and subtraction: add and subtract fractions, including by creating equivalent fractions, in various contexts	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
6. Multiplication and division: 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	GCF & LCM	Finding factors & the greatest common factor
		Finding multiples & the lowest common multiple
7. Multiplication and division: evaluate and express repeated multiplication of whole numbers using exponential notation, in various contexts	Exponential notation	Expressing numbers in exponential notation
		Describe/evaluate numbers in exponential notation
8. Multiplication and division: multiply and divide fractions by fractions, using tools in various contexts	Multiply & divide fractions	Multiplying fractions
		Dividing fractions
9. Multiplication and division: multiply and divide decimal numbers by decimal numbers, in various contexts	Multiply & divide decimals	Multiplying decimals
		Dividing decimals
		Decimal word problems, multiplying & dividing
10. Multiplication and division: identify proportional and non-proportional situations and apply proportional reasoning to solve problems	Proportional/non-proportional situations	Identifying proportional relationships
		Graphing proportional relationships
		Identifying the constant of proportionality, table
		Solving proportions problems

2 Algebra

2.1 Patterns and relationships: identify, describe, extend, create, and make predictions about a variety of patterns, including those found in real-life contexts

Outcome	Quests	Content
1. Patterns: 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	ID/compare patterns, including linear	Comparing pattern rules
		Identifying geometric patterns
2. Patterns: 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	Create patterns, whole numbers/decimals	Create patterns, whole numbers/fractions/decimals
		Linear growing patterns
3. Patterns: 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	Pattern rules, whole numbers & decimals	Investigate/extend patterns represented in a table
		Find & use the nth term, linear patterns
		Making predictions about linear growing patterns
4. Patterns: create and describe patterns to illustrate relationships among integers	Patterns with integers	Patterns with integers, adding & subtracting

2.2 Equations and inequalities: demonstrate an understanding of variables, expressions, equalities, and inequalities, and apply this understanding in various contexts

Outcome	Quests	Content
1. Variables and expressions: add and subtract monomials with a degree of 1 that involve whole numbers, using tools	Add & subtract monomials	Adding & subtracting monomials

2. Variables and expressions: evaluate algebraic expressions that involve whole numbers and decimal numbers	Evaluate algebraic expressions	Evaluating algebraic expressions
3. Variables and expressions: solve equations that involve multiple terms, whole numbers, and decimal numbers in various contexts, and verify solutions	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
4. Variables and expressions: solve inequalities that involve multiple terms and whole numbers, and verify and graph the solutions	Solve inequalities	Solving inequalities

2.3 Coding: solve problems and create computational representations of mathematical situations using coding concepts and skills

Outcome	Quests	Content
1. Coding skills: 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	Teacher directed	Teacher directed
2. Coding skills: 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	Teacher directed	Teacher directed

3 Data

3.1 Data literacy: manage, analyse, and use data to make convincing arguments and informed decisions, in various contexts drawn from real life

Outcome	Quests	Content
1. Data collection and organization: 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	Teacher directed	Teacher directed
2. Data collection and organization: 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	Qualitative & quantitative data	Statistical investigations using sampling
		Relative frequency
		Classifying data
3. Data visualization: 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	Select graphs & display data	Constructing histograms
		Constructing line plots
		Constructing stacked-bar graphs
		Constructing broken-line graphs
		Constructing circle graphs
		Selecting appropriate data displays
4. Data visualization: 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	Teacher directed	Teacher directed
5. Data analysis: 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	Measures of central tendency	Investigating the effect of outliers
		The effect of adding or removing data
6. Data analysis: analyse different sets of data presented in various ways, including in circle graphs and in misleading graphs, by asking and answering questions about the	Analyse data displays	Identifying skewed & symmetrical sets of data
		Analysing misleading data displays

data, challenging preconceived notions, and drawing conclusions, then make convincing arguments and informed decisions		
--	--	--

3.2 Probability: describe the likelihood that events will happen, and use that information to make predictions

Outcome	Quests	Content
1. Probability: describe the difference between independent and dependent events, and explain how their probabilities differ, providing examples	Understand independent/dependent events	Understanding independent & dependent events
2. Probability: determine and compare the theoretical and experimental probabilities of two independent events happening and of two dependent events happening	Probability independent/dependent events	Finding experimental & theoretical probabilities
		Identifying the sample space, 2 independent events
		Comparing experimental & theoretical probability

4 Spatial Sense

4.1 Geometric and spatial reasoning: describe and represent shape, location, and movement by applying geometric properties and spatial relationships in order to navigate the world around them

Outcome	Quests	Content
1. Geometric reasoning: describe and classify cylinders, pyramids, and prisms according to their geometric properties, including plane and rotational symmetry	Cylinders, pyramids & prisms	Comparing, describing & naming prisms & pyramids
		Properties of cylinders, prisms & pyramids
2. Geometric reasoning: draw top, front, and side views, as well as perspective views, of objects and physical spaces, using appropriate scales	Top, front & side views of 3-D objects	Drawing top, front & side views of 3-D objects
3. Location and movement: perform dilations and describe the similarity between the image and the original shape	Dilations & similarity	Exploring the effects of dilations
4. Location and movement: describe and perform translations, reflections, and rotations on a Cartesian plane, and predict the results of these transformations	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

4.2 Measurement: compare, estimate, and determine measurements in various contexts

Outcome	Quests	Content
1. The metric system: describe the differences and similarities between volume and capacity, and apply the relationship between millilitres (mL) and cubic centimetres (cm ³) to solve problems	Volume & capacity	Solving volume & capacity problems
2. The metric system: solve problems involving perimeter, area, and volume that require converting	Convert units of length, area, volume	Converting units of length
		Converting units of area
		Converting units of volume

from one metric unit of measurement to another		
3. Circles: 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	Circumference of a circle	Finding the circumference of a circle
		Introducing the parts of a circle
4. Circles: construct circles when given the radius, diameter, or circumference	Teacher directed	Teacher directed
5. Circles: 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	Area of a circle	Finding the area of a circle, formula
		Finding the radius or diameter given the area
6. Volume and surface area: represent cylinders as nets and determine their surface area by adding the areas of their parts	Surface area: cylinders	Finding the surface area of a cylinder
7. Volume and surface area: 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	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
		Solving volume problems, right prisms & cylinders

5 Financial Literacy

5.1 Money and finances: demonstrate the knowledge and skills needed to make informed financial decisions

Outcome	Quests	Content
1. Money concepts: identify and compare exchange rates, and convert foreign currencies to Canadian dollars and vice versa	Teacher directed	Teacher directed
2. Financial management: identify and describe various reliable sources of information that can help with planning for and reaching a financial goal	Teacher directed	Teacher directed
3. Financial management: create, track, and adjust sample budgets designed to meet longer-term financial goals for various scenarios	Simple financial plans	Creating simple financial plans
4. Financial management: identify various societal and personal factors that may influence financial decision making, and describe the effects that each might have	Teacher directed	Teacher directed
5. Consumer and civic awareness: explain how interest rates can impact savings, investments, and the cost of borrowing to pay for goods and services over time	Teacher directed	Teacher directed
6. Consumer and civic awareness: compare interest rates and fees for different accounts and loans offered by various financial institutions, and determine the best option for different scenarios	Teacher directed	Teacher directed

Grade 8

1 Number

1.1 Number sense: demonstrate an understanding of numbers and make connections to the way numbers are used in everyday life

Outcome	Quests	Content
1. Rational and irrational numbers: 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	Scientific notation	Introducing scientific notation
		Writing & comparing numbers in scientific notation
2. Rational and irrational numbers: describe, compare, and order numbers in the real number system (rational and irrational numbers), separately and in combination, in various contexts	The real number system	Classifying real numbers
		Comparing rational & irrational numbers
3. Rational and irrational numbers: estimate and calculate square roots, in various contexts	Square roots	Square roots of non-perfect squares
		Finding square roots
4. Fractions, decimals, and percents: 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	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

1.2 Operations: use knowledge of numbers and operations to solve mathematical problems encountered in everyday life

Outcome	Quests	Content
1. Properties and relationships: 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	Properties & order of operations	The commutative property
		The associative property
		The distributive property
		Order of operations, integers
		Order of operations, decimals & fractions
2. Math facts: understand and recall commonly used square numbers and their square roots	Recall square numbers & square roots	Recalling square numbers & their square roots
3. Mental math: 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	Multiply & divide by powers of 10	Multiplying decimals by powers of 10
		Dividing decimals by powers of 10
4. Addition and subtraction: add and subtract integers, using appropriate strategies, in various contexts	Add & subtract integers	Adding & subtracting integers
		Adding & subtracting integers with models
5. Addition and subtraction: add and subtract fractions, using appropriate strategies, in various contexts	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
6. Multiplication and division: multiply and divide fractions by fractions, as well as by whole numbers and mixed numbers, in various contexts	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
7. Multiplication and division: multiply and divide integers, using appropriate strategies, in various contexts	Multiply & divide integers	Multiplying integers
		Dividing integers
		Multiplying & dividing integers
8. Multiplication and division: compare proportional situations and determine unknown values in proportional situations, and apply proportional reasoning to solve problems in various contexts	Proportional reasoning	Solving proportions problems
		Comparing rates
		Identifying the constant of proportionality
		Comparing proportional relationships
		Graphs of proportional relationships

1.3 Patterns and relationships: identify, describe, extend, create, and make predictions about a variety of patterns, including those found in real-life contexts

Outcome	Quests	Content
1. Patterns: 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	Identify & compare patterns	Comparing linear growing & shrinking patterns
2. Patterns: 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	Create patterns, rational numbers	Modelling real-life relationships
		Continuing & creating sequences, rational numbers
		Representing linear growing patterns
3. Patterns: 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	Pattern rules, rational numbers	Finding the nth term, rational coefficients
		Use the nth term rule for a linear pattern
		Investigate linear relationships, Cartesian plane

values in linear growing and shrinking patterns		
4. Patterns: create and describe patterns to illustrate relationships among rational numbers	Create & describe patterns	Creating & describing patterns in rational numbers

1.4 Equations and inequalities: demonstrate an understanding of variables, expressions, equations, and inequalities, and apply this understanding in various contexts

Outcome	Quests	Content
1. Variables and expressions: add and subtract monomials with a degree of 1, and add binomials with a degree of 1 that involve integers, using tools	Add & subtract monomials & binomials	Adding & subtracting monomials & binomials
2. Variables and expressions: evaluate algebraic expressions that involve rational numbers	Evaluate algebraic expressions	Evaluating algebraic expressions
3. Equalities and inequalities: solve equations that involve multiple terms, integers, and decimal numbers in various contexts, and verify solutions	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
4. Equalities and inequalities: solve inequalities that involve integers, and verify and graph the solutions	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

1.5 Coding: solve problems and create computational representations of mathematical situations using coding concepts and skills

Outcome	Quests	Content
1. Coding skills: 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	Teacher directed	Teacher directed
2. Coding skills: 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	Teacher directed	Teacher directed

2 Data

2.1 Data literacy: manage, analyse, and use data to make convincing arguments and informed decisions, in various contexts drawn from real life

Outcome	Quests	Content
1. Data collection and organization: identify situations involving one-variable data and situations involving two-variable data, and explain when each type of data is needed	Identify one & two-variable data	Identifying one & two-variable data
2. Data collection and organization: collect continuous data to answer questions of interest involving two variables, and organize the data sets as appropriate in a table of values	Teacher directed	Teacher directed
3. Data visualization: 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	Select graphs & display data	Constructing line plots
		Constructing histograms
		Constructing line graphs
		Constructing scatter plots
4. Data visualization: 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	Teacher directed	Teacher directed
5. Data analysis: 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	Relationships in two-variable data	Describing relationships in scatter plots
6. Data analysis: 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	Analyse & interpret graphs	Interpreting information from secondary sources
		Interpreting data in various graphs
		Analyzing misleading graphs

notions, and drawing conclusions, then make convincing arguments and informed decisions		
---	--	--

2.2 Probability: describe the likelihood that events will happen, and use that information to make predictions

Outcome	Quests	Content
1. Probability: solve various problems that involve probability, using appropriate tools and strategies, including Venn and tree diagrams	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
2. Probability: determine and compare the theoretical and experimental probabilities of multiple independent events happening and of multiple dependent events happening	Probability independent/dependent events	Comparing experimental & theoretical probability
		Finding the probability of independent events
		Finding the probability of dependent events

3 Spatial Sense

3.1 Geometric and spatial reasoning: describe and represent shape, location, and movement by applying geometric properties and spatial relationships in order to navigate the world around them

Outcome	Quests	Content
1. Geometric reasoning: identify geometric properties of tessellating shapes and identify the transformations that occur in the tessellations	Tessellations	Recognizing tessellations
		Rotational symmetry
2. Geometric reasoning: make objects and models using appropriate scales, given their top, front, and side views or their perspective views	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
3. Geometric reasoning: use scale drawings to calculate actual lengths and areas, and reproduce scale drawings at different ratios	Scale drawings	Using scales on maps
		Solving problems using scale drawings
4. Location and movement: describe and perform translations, reflections, rotations, and dilations on a Cartesian plane, and predict the results of these transformations	Transformations on a 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		

3.2 Measurement: compare, estimate, and determine measurements in various contexts

Outcome	Quests	Content
1. The metric system: represent very large (mega, giga, tera) and very small (micro, nano, pico) metric units using models, base ten	Very large & small metric units	Very large & small metric units, exponents

relationships, and exponential notation		
2. Lines and angles: solve problems involving angle properties, including the properties of intersecting and parallel lines and of polygons	Solve problems using angle properties	Calculating the interior angles of polygons
		Calculating supplementary & complementary angles
		Angles on parallel lines cut by a transversal
3. Length, area, and volume: solve problems involving the perimeter, circumference, area, volume, and surface area of composite two-dimensional shapes and three-dimensional objects, using appropriate formulas	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
4. Length, area, and volume: 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	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

4 Financial Literacy

4.1 Money and finances: demonstrate the knowledge and skills needed to make informed financial decisions

Outcome	Quests	Content
1. Money concepts: describe some advantages and disadvantages of various methods of payment that can be used when dealing with multiple currencies and exchange rates	Teacher directed	Teacher directed
2. Financial management: create a financial plan to reach a long-term financial goal, accounting for income, expenses, and tax implications	Create simple financial plans	Creating simple financial plans
3. Financial management: identify different ways to maintain a balanced budget, and use appropriate tools to track all income and spending, for several different scenarios	Teacher directed	Teacher directed
4. Financial management: 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	Simple & compound interest	Solving problems involving simple interest
		Solving problems involving compound interest
		Comparing simple & compound interest
5. Consumer and civic awareness: 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	Teacher directed	Teacher directed
6. Consumer and civic awareness: 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	Teacher directed	Teacher directed



For more information about Mathletics,
contact our friendly team.

www.mathletics.com/contact



A 3P Learning Product