

Mathletics

Alberta Program of Studies

Skill Quests & Activities



Grades K-3

September 2023

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Kindergarten

Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.

Children investigate quantity to 10	
Course Topic	Activities Title
Number: Representing quantities to 10	Count to 5
	Dot Display
	Matching Numbers to 10
	Concept of zero
	How Many?
	More, Less or the Same to 10
	Order Numbers to 10
	Picture Graphs: More or Less

Children interpret compositions of quantities within 10	
Course Topic	Activities Title
Number: Addition & Subtraction	Adding to 5
	Subtracting from 5
	Adding to Ten
	All about Ten
	Subtracting from Ten
	Model Addition
	Model Subtraction
	Adding to make 5 and 10
	Adding to 10 Word Problems
	Balance Numbers to 10
	Doubles and Halves to 10
	Add and subtract using graphs

Geometry: Shapes are defined and related by geometric attributes

Children investigate shape	
Course Topic	Activities Title
Geometry: Shapes	Collect the Shapes
	Collect Simple Shapes
	Same and Different
	Match the Solid 1
	Count Sides and Corners
	Relate Shapes and Solids

Measurement: Attributes such as length, area, volume, and angle are quantified by measurement

Children explore size through direct comparison	
Course Topic	Activities Title
Measurement	Compare Length
	Everyday Length
	Measuring Length with Blocks
	Everyday Mass
	Balancing Act
	How Full?
	Which Holds More?

Patterns: Awareness of patterns supports problem solving in various situations

Children identify and create repeating patterns	
Course Topic	Activities Title
Patterns	Complete the Pattern
	Simple Patterns
	Missing it!

Time: Duration is described and quantified by time.

Children interpret time as a sequence of events	
Course Topic	Activities Title
Time	Tomorrow and Yesterday (Scaffolded)
	Tomorrow and Yesterday (without scaffold)

Grade 1

Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.

Students interpret and explain quantity to 100	
Quests	Content
Number sequences to 100	Counting by 1s to 100
	Skip counting by 2s to 20
	Skip counting by 10s to 100
Counting strategies	Counting collections to 20
	Counting collections to 50
	Counting collections to 100
Understand the conservation of number	Understanding the conservation of number
Numbers more than & less than	Numbers more than & less than
Compare & order sets up to 20	Comparing & ordering sets up to 20
Compare & order numbers to 100	Comparing & ordering numbers to 100
	Exploring change in quantity up to 20
Equality & inequality	Exploring equality & inequality
	Sharing objects to divide
Topic	Activity Title
Number: Representing Quantities	How Many?
	Matching Numbers to 20
	Concept of Zero
Numbers to 100	Going Up
	Counting Backwards
	Counting by Fives
	Counting by Tens
	Counting by Twos
	Going Down
	Balancing Objects
	Balancing Act
	Before, After, and Between to 100
	Compare Numbers to 20
	Compare Numbers to 50
	Compare Numbers to 100

Students examine addition and subtraction within 20	
Quests	Content
Addition & subtraction to 20	Adding to 20
	Adding to 20 by bridging to 10

	Subtracting within 20
	Subtracting within 20 by bridging to 10
	Adding & subtracting using a bar model
	Creating addition & subtraction word problems
	Finding fact families for addition & subtraction
	Adding & subtracting within 20 fluently
Addition combinations	Adding to 5
	Adding to 6
	Adding to 7
	Adding to 8
	Adding to 9
	Adding 0 to a number
Addition & subtraction strategies	Making a 10
	Adding & subtracting to 20
	Adding & subtracting using doubles
	Adding & subtracting 0
Record equalities	Recording equalities
	Solving addition & subtraction equality problems
Topic	Activity Title
Number: Addition and Subtraction	Making Teen Numbers
	Model Addition
	Model Subtraction
	Add and Subtract Using Graphs
	Doubles and Near Doubles
	Addition Facts
	Subtraction Facts to 18
	All About 10
	All About 20
	Adding to 10 Word Problems
	Fact Families: Add and Subtract

Students examine one-half as a part-whole relationship	
Quests	Content
Fraction concepts	Finding halves
Topic	Activity Title
Number: Fractions	Is It Half?
	Halves
	Halve it!

Geometry: Shapes are defined and related by geometric attributes

Students interpret shape in two and three dimensions	
Quests	Content
Sort 2-D shapes & 3-D objects	Sorting 2-D shapes
	Sorting 3-D objects
Replicate composite 2-D shapes	Replicating composite 2-D shapes
Replicate composite 3-D objects	Replicating composite 3-D objects
Compare 2-D shapes to 3-D objects	Comparing 2-D shapes to parts of 3-D objects
3-D objects	Introducing spheres
	Introducing cones
	Introducing cubes
	Introducing cylinders
	Introducing pyramids
	Introducing prisms
	Identifying 3-D objects
	Identifying attributes of 3-D objects
	Comparing 3-D objects
	Building 3-D structures
2-D shapes	Naming 2-D shapes
	Comparing 2-D shapes
Topic	Activity Title
Geometry: Shapes	Collect the Shapes
	Collect the Simple Shapes
	Same or Different
	Match the Solid

Measurement: Attributes such as length, area, volume, and angle are quantified by measurement

Students relate length to the understanding of size	
Quests	Content
Measurement	Exploring length
	Exploring volume
	Comparing area
Topic	Activity Title
Measurement	Everyday Length
	Compare Length
	How Full?
	Which Holds More?
	Filling Fast!
	Comparing Volume
	Everyday Mass

Patterns: Awareness of patterns supports problem solving in various situations

Students examine patterns in cycles	
Quests	Content
Awareness of patterns	Recognizing repeating patterns
	Reproducing repeating patterns
	Manipulating repeating patterns
	Extending repeating patterns
	Describing & creating repeating patterns
	Relating patterns
Translate repeating patterns	Translating repeating patterns
	Creating & extending repeating patterns
	Identifying repeating patterns
	Numeric patterns
Topic	Activity Title
Patterns	Simple Patterns
	Pattern Error
	Missing it!
	Complete the Pattern
	Colour Patterns

Time: Duration is described and quantified by time.

Students explain time in relation to cycles	
Quests	Content
Duration – calendars	Using calendars
Seasons	Introducing seasons
Topic	Activity Title
Time	Days: After and Before
	Tomorrow and Yesterday (Scaffolded)
	Tomorrow and Yesterday (without scaffold)
	Weekdays and Weekends
	Months After and Before
	Using a calendar

Statistics: The science of collecting, analyzing, visualizing, and interpreting data can inform understanding and decision making.

Students investigate and represent data.	
Quests	Content
Sort objects using 1 attribute	Sorting objects using 1 attribute
Gather & record data	Gathering, sorting & recording data
	Collecting simple data
Topic	Activity Title
Statistics	Sorting Data / Analyzing Data (US)
	Read Graphs

Grade 2

Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.

Students analyze quantity to 1000	
Quests	Content
Number sequences to 100	Counting by 2s to 100
	Counting by 10s from multiples of 10
	Counting by 10s to 100 from any number
	Counting a sum of money to 100¢
Even & odd numbers	Even & odd numbers
Equality & inequality	Introducing equality & inequality
Use the equal & not equal symbol	Using the equal & not equal symbol
Skip counting sequences to 1000	Counting by 5s to 1000, forward & backward
	Counting by 10s to 1000, forward & backward
	Counting by 100s to 1000, forward & backward
	Counting by 1s to 1000
	Counting by 2s, 3s & 5s from any number
Compare & order numbers to 1000	Identifying numbers before & after within 1000
	Comparing numbers to 1000
	Ordering numbers to 1000
Represent & describe numbers to 1000	Representing & describing numbers to 1000
	Connecting multiples of 10 & 100 to number words
	Finding numbers 10 or 100 before/after a 3-digit
Place value of numbers up to 1000	Identifying place value of numbers to 1000
	Using place value to partition 3-digit numbers
	Non-standard partitioning, 3-digit numbers
	Solving place value number problems
Estimate quantities less than 1000	Estimating quantities using referents
Topic	Activity Title
Numbers to 1000	Going Up
	Going Down
	Before, After & Between to 100
	The Number Line
	Place Value to Thousands
	Place Value 2
	Number Line Order
	Model Numbers
	Count by 2s, 5s, and 10s
	Counting by Twos
	Count by Tens
	Counting by Tens

	Everyday Money
	Odd or Even
	Ascending Order
	Descending Order
	Greater Than or Less Than?
	Which is Greater?
	Which is Less?

Students investigate addition and subtraction within 100.	
Quests	Content
Compare & order numbers to 1000	Adding 2-digit & 1-digit numbers using place value
	Adding by bridging to 10 with 2- & 1-digit numbers
	Adding tens to a 2-digit number using models
	Adding two 2-digit numbers using place value
	Adding two 2-digit numbers using a number line
	Adding by compensating
	Adding using compatible numbers
	Using number bonds to 100
	Adjusting addends
Subtraction within 100	Subtracting by bridging to 10
	Subtracting 2- & 1-digit numbers using place value
	Subtracting using mixed strategies
	Subtracting tens from a 2-digit number
	Subtracting two 2-digit numbers using place value
	Subtracting two 2-digit numbers, number line
	Subtracting by compensating
Addition & subtraction	Addition & subtraction to 18
	Adding using doubles
	Subtracting using doubles
	Adding doubles or near doubles
	Finding fact families for addition & subtraction
	Using the commutative property of addition
	Counting on by bridging to 10
	Addition & subtraction facts - word problems
Topic	Activity Title
Number: Addition	Adding In Any Order
	Adding to 5
	Adding to 10
	Adding to Make 5 and 10
	Addition
	Additive Addition
	Adding 3 Single Digit Numbers
	Add 3 Number Using Bonds to 10
	Add 3 Numbers: Bonds to Multiples of 10
	Doubles and Near Doubles
	Column Addition 1
	Commutative Property of Addition
	Adding to 2-digit numbers

Number: Subtraction	Subtract Tens
	Simple Subtraction
	Subtracting from 20
	Fact Families: Add and Subtract
	Magic Mental Subtraction/Mental Subtraction (US)
	Repartition to Subtract/Decompose numbers to subtract
	Subtraction Facts to 18

Students interpret part-whole relationships using unit fractions	
Quests	Content
Introducing fractions	Finding halves & fourths
	Counting in halves & fourths
	Recognizing equivalence
Topic	Activity Title
Fractions	Unit Fractions
	Shade Fractions
	Compare Fractions 1A
	Halves and Quarters
	Thirds and Sixths
	Model Fractions

Geometry: Shapes are defined and related by geometric attributes.

Students analyze and explain geometric attributes of shape	
Quests	Content
2-D objects	Sorting 2-D objects
3-D objects	Sorting 3-D objects
	Making models
	Describing attributes
Single transformations of 2-D shapes	Introducing slides/translations
	Introducing flips/reflections
	Introducing turns/rotations
	One-step translations, reflections & rotations
Topic	Activity Title
Geometry and Measurement	Sort It
	Match the Solid 2
	Relate Shapes and Solids
	Collect the Polygons
	Flip, Slide, Turn
	Transformations
	Comparing Length
	Measuring Length With Blocks

Measurement: Attributes such as length, area, volume, and angle are quantified by measurement.

Students communicate length using units	
Quests	Content
Measure length	Measuring length using non-standard units
	Introducing formal units for length
Compare & order objects	Comparing & ordering objects by length
Topic	Activity Title
Geometry and Measurement	Sort It
	Match the Solid 2
	Relate Shapes and Solids
	Collect the Polygons
	Flip, Slide, Turn
	Transformations
	Comparing Length
	Measuring Length With Blocks

Patterns: Awareness of patterns supports problem solving in various situations

Students explain and analyze patterns in a variety of contexts	
Quests	Content
Explore patterns	Visual patterns
	Patterns with transformations
	Manipulating repeating patterns
	Number patterns
Topic	Activity Title
Patterns	Counting on a 100 grid
	Complete the Pattern

Time: Duration is described and quantified by time.

Students relate duration to time	
Quests	Content
Explore the passing of time	Calendars
	Days of the week & months of the year
Topic	Activity Title
Time	Days of the Week
	Days: After and Before
	Weekdays and Weekends
	Tomorrow and Yesterday (Scaffolded)
	Tomorrow and Yesterday (without scaffold)
	Months of the Year
	Months: After and Before

Statistics: The science of collecting, analyzing, visualizing, and interpreting data can inform understanding and decision making.

Students relate data to a variety of representations.	
Quests	Content
Gather & record data	Gathering data
	Sorting & recording data
Interpret data	Using basic graphs
	Making a graph
	Using pictographs
	Using a tally chart
	Using line plots
	Using Venn diagrams
	Interpreting data
Topic	Activity Title
Data	Sorting Data / Analyzing Data (US)
	Tallies
	Read Graphs
	Picture Graphs: More or Less
	Picture Graphs: single-unit scale
	Picture Graphs: Who Has The Goods/Comparing

Grade 3

Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.

Students interpret place value within 100 000.	
Quests	Content
Number concepts to 10 000	Reading & writing numbers to 10 000
	Understanding place value, 4-digit numbers
	Counting by tens & hundreds
	Partitioning 4-digit numbers
Number concepts up to 5 digits	Reading & writing numbers up to 5 digits
	Identifying place value up to 5 digits
	Partitioning 5-digit numbers
Compare & order numbers to 10 000	Identifying numbers before & after to 10 000
	Identifying missing numbers to 10 000
	Comparing & ordering numbers to 10 000
Topic	Activity Title
Number: Place Value to 100 000	Which Is Greater?
	Which Is Less?
	Put in Order 1
	Partition and Rename2/Understanding Place Value 2
	Nearest Thousand?
	Rounding Numbers 1
	Numbers from Words to Digits 1

Students apply strategies for addition and subtraction within 1000	
Quests	Content
Estimate - two 2-digit number problems	Estimating with two 2-digit number problems
Addition & subtraction to 100	Adding multiple single-digit numbers
	Adding to make 100
Addition & subtraction to 1000	Estimating addition & subtraction
	Adding using split strategy
	Adding using formal algorithm
	Subtracting using split strategy
	Adding & subtracting using expanded form
	Subtracting using formal algorithm
	Adding & subtracting using split strategy
	Add & subtract using non-standard partitioning
	Choosing efficient strategies
	Solving addition & subtraction word problems

Topic	Activity Title
Number: Addition and Subtraction	Adding to 2-digit numbers
	Magic Mental Addition/Mental Addition (US)
	Complements to 10, 20, 50
	Add Two 2-Digit Numbers
	Add 3-Digit Numbers
	Add Two 2-Digit Numbers: Regroup
	Add Three 2-Digit Numbers
	Subtract Tens
	Magic Mental Subtraction /Mental Subtraction
	Repartition to Subtract/ Decompose Numbers to Subtract
	Subtract Numbers
	Subtract Numbers: Regroup
	3-Digit Differences
	Column Subtraction

Students analyze and apply strategies for multiplication and division within 100	
Quests	Content
Multiplication facts to 5 x 5	Using repeated addition to multiply
	Exploring multiplication by 2
	Skip counting by 3
	Exploring multiplication by 3
	Skip counting by 4
	Exploring multiplication by 4
	Exploring multiplication by 5
	Multiplication facts to 5 x 5
Division facts to 5	Using tools & drawings to divide
	Using repeated subtraction to divide
	Dividing by 2
	Dividing by 3
	Dividing by 4
	Dividing by 5
Multiply & divide by 10	Exploring multiplication by 10
	Exploring division by 10
	Multiply & divide by 10
Multiply by 0 & 1, divide by 1	Multiplying by 1 or 0
	Dividing by 1
Multiplication facts to 9 x 9	Exploring multiplication by 2
	Exploring multiplication by 3
	Exploring multiplication by 4
	Exploring multiplication by 5
	Exploring multiplication by 6
	Exploring multiplication by 7
	Exploring multiplication by 8
	Exploring multiplication by 9
Multiplication facts to 10	Recalling multiplication facts to 7 x 7
	Recalling multiplication facts 2, 5 & 10

Division facts to 9	Dividing by 2
	Dividing by 5
	Dividing by 2 & 5
	Dividing by 3 & 6
	Dividing by 4 & 8
	Dividing by 9
Division facts to 10	Dividing by 2, 5 & 10
Multiplication & division facts	Using arrays
	Recalling multiplication & division facts
	Understand relationship, multiplication & division
Multiplication & division word problems	Solving multiplication & division word problems
Topic	Activity Title
Number: Multiplication and Division	Groups of Two
	Groups of Five
	Model Multiplication to 5×5
	Grouping in Threes
	Grouping in Fours
	Grouping in Sixes
	Grouping in Sevens
	Grouping in Eights
	Grouping in Nines
	Multiplication Grids
	Frog Jump Multiplication
	Share the Treasure
	Divide Into Equal Groups
	Dividing by Two
	Dividing by Five
	Frog Jump Division
	Fact Families: Multiply and Divide

Students interpret fractions in relation to one whole	
Quests	Content
Compare & order fractions	Comparing & ordering unit fractions with models
	Comparing & ordering common fractions with models
	Comparing fractions with the same numerator
Represent fractions less than/equal to 1	Introducing the terms numerator & denominator
	Understanding fractions
	Representing halves, fourths & eighths
	Representing thirds & sixths
	Representing fifths
	Representing eighths
	Representing tenths
Identify equivalent fractions	Identifying equivalent fractions
Express whole numbers	Expressing whole numbers as fractions
Topic	Activity Title
Fractions	Compare Fractions 1a
	Fractions of a Collection 1

	Fractions of a Collection 2
	Fraction Fruit Sets 1
	Uneven partitioned shapes 2
	Partition into Equal Parts

Algebra: Equations express relationships between quantities.

Students illustrate equality with equations	
Quests	Content
One-step add/sub problems with unknowns	One-step number problems with unknowns up to 20
	One-step number problems with unknowns up to 100
One-step equations using all operations	Finding missing numbers: add & subtract equations
	One-step equations: addition & subtraction
	One-step equations: multiplication & division
	One-step equations: balancing number sentences
Topic	Activity Title
Algebra: Equality	Missing Numbers
	Balance Numbers to 10/Composing numbers to 10
	Balance Numbers to 20/Composing Numbers to 20

Geometry: Shapes are defined and related by geometric attributes

Students relate geometric properties to shape	
Quests	Content
Regular & irregular polygons	Understanding regular & irregular polygons
Introduce & explore 3-D shapes	Exploring prisms
	Introducing rectangular prisms
	Comparing 3-D shapes
	Making 3-D shapes
Sort & identify two-dimensional shapes	Sorting 2-D shapes
	Comparing 2-D shapes
Topic	Activity Title
Geometry	Collect the Polygons
	How Many Faces?
	How many Edges?
	How many Vertices?
	Flip, Slide, Turn
	Transformations

Measurement: Attributes such as length, area, volume, and angle are quantified by measurement.

Students determine length using standard units	
Quests	Content
Understand & measure perimeter	Understanding & calculating perimeter
Understand & measure length (m, cm)	Measuring in standard units: cm & m
	Selecting units of measurement: m, cm, mm
	Ordering & comparing lengths: m, cm
	Converting between m & cm
	Estimating & measuring in cm
Topic	Activity Title
Measurement	How Long is That?
	Inches, Feet, Yards
	Ordering Lengths(cm)

Students interpret angles	
Quests	Content
Identify angles	Introduce angles up to 180°
	Introducing right angles
	Identifying right angles in quadrilaterals
	Comparing angles informally
Topic	Activity Title
Measurement: Angles	Equal Angles
	Comparing Angles
	Right Angle Relation

Patterns: Awareness of patterns supports problem solving in various situations.

Students analyze patterns in numerical sequences	
Quests	Content
Increasing patterns	Working with increasing number patterns to 100
	Working with increasing number patterns to 1000
Decreasing patterns	Working with decreasing number patterns within 100
	Working with decreasing number pattern within 1000
Skip counting patterns	Skip counting by 25s
Exploring number patterns	Identifying odd & even patterns
Recognising visual patterns up to 1000	Visual patterns - add, subtract or multiply
Number patterns to 1000	Add, sub or multiplicative patterns
Topic	Activity Title
Patterns	Counting on a 100 grid
	Count by 2s, 5s and 10s
	Count Forward Patterns
	Increasing Patterns
	Decreasing Patterns
	Count Backward Patterns
	Describing Patterns
	Pick the Next Number

Time: Duration is described and quantified by time.

Students tell time using clocks	
Quests	Content
Understand passage of time	Introducing time in hours, minutes & seconds
	Recalling relationships between units of time
Read & record time	Telling time to the hour & half hour
	Telling time to the quarter hour
	Telling time to 5 minutes
	Telling time to the minute
	Using am & pm notation
Ordering time	Comparing & ordering time
Topic	Activity Title
Time	Tell Time to the Hour
	Half Hour Times
	Five Minute Times
	What is the Time?
	24 Hour Time
	Quarter To and Quarter Past
	Time Conversions: Whole Numbers 1

Statistics: The science of collecting, analyzing, visualizing, and interpreting data can inform understanding and decision making.

Students interpret and explain representations of data	
Quests	Content
Graphs using many-to-one correspondence	Using graphs with many-to-one correspondence
	Using bar graphs with many-to-one correspondence
	Comparing graphs with different correspondence
	Interpreting data from tables
	Interpreting data from a stem & leaf plot
	Explaining the mode of a data set
Topic	Activity Title
Statistics	Making Picture Graphs: With Scale
	Picture Graphs: with scale & half symbols
	Picture Graphs: More or Less/Picture Graphs: More or Fewer (USA)
	Picture Graphs: Single-Unit Scale



For more information about Mathletics,
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