# Kindergarten

# Mathematics: *A Pathway to Proficiency*

Ministry of Education and Child Care

## What is my child learning?

*The BC Curriculum states that students are expected to be able to know and do the following:*

- number concepts to 10
- ways to make 5
- decomposition of numbers to 10
- repeating patterns with two or three elements
- change in quantity to 10, using concrete materials
- equality as a balance and inequality as an imbalance
- direct comparative measurement (e.g., linear, mass, capacity)
- single attributes of 2D shapes and 3D objects
- concrete or pictorial graphs as a visual tool
- likelihood of familiar life events
- financial literacy — attributes of coins, and financial role-play
- reasoning and analyzing
- understanding and solving
- communicating and representing
- connecting and reflecting

## What foundational skills will my child develop this year?

- **Number Sense**
  - **Whole number concepts:** counting, recognizing and showing numbers and quantity
- **Computational Fluency (Operations)**
  - **Knowledge and fluency of math facts and Understanding of operations:** beginning problem solving with numbers up to 10, showing sets using pictures, objects such as counters, or tallies
- **Patterning and Algebraic Thinking**
  - **Patterning:** noticing repeating sections in a pattern, identifying patterns in the real world
  - **Algebraic thinking:** showing how groups of objects can be made equal or unequal
- **Geometry and Measurement (Spatial Sense)**
  - **2D shapes and 3D objects:** identifying, describing, and creating shapes like circles, squares, etc.
  - **Measurement:** using objects such as hands or blocks to comparatively measure length or height
- **Data and Probability (Data Literacy)**
  - **Understanding, analyzing, and communicating about data:** making meaning from graphs and diagrams
  - **Probability:** understanding the likelihood of a familiar event
- **Financial Literacy:**
  - **Currency:** counting and identifying loonies and toonies
  - **Financial planning and decision making:** developing and practicing financial understanding. This skill also relates to Number Sense and Computational Fluency

## What will Proficient learning look like for my child by the end of the year?

*On your child's report card, Proficient means your child has a complete understanding of key skills. When they are Proficient they should:*

- Accurately count to 10 forwards and backwards, and from different starting points
- Accurately count a group of up to 10 objects
- Show how groups of up to 10 objects can be made (i.e., "I have 6 stickers and add 4 more to make 10")
- Identify and write the numbers 0-9
- Figure out the repeating section in a pattern
- Describe and make simple patterns
- Identify, describe, and create a variety of shapes, and recognize similarities and differences between shapes
- Use mathematical words (e.g. bigger, smaller, longer, shorter, above, below) to compare objects and describe their position
- Use mathematical words (e.g., never, always, sometimes, maybe) to describe the likelihood of an event (such as the chance of snow in June)
- Identify and describe loonies and toonies and figure out a price up to $10
- Explore financial concepts like wants and needs through play (i.e., imaginative play "store" or a business such as dog walking)
- Problem solve:
  - Understand the situation (i.e., how many friends will come to your party? How many cookies do you need?)
  - Solve a problem using objects or pictures to represent quantities
  - Compare their problem-solving method and answer with others
  - Show how they solved the problem and say why they did it that way
- Demonstrate other skills as outlined in the BC Curriculum

# Grade 1

# Mathematics: *A Pathway to Proficiency*

BRITISH COLUMBIA | Ministry of Education and Child Care

## What is my child learning?

*The BC Curriculum states that students are expected to be able to know and do the following:*

- number concepts to 20
- ways to make 10
- addition and subtraction to 20 (understanding of operation and process)
- repeating patterns with multiple elements and attributes
- change in quantity to 20, concretely and verbally
- meaning of equality and inequality
- direct measurement with non-standard units (non-uniform and uniform)
- comparison of 2D shapes and 3D objects
- concrete graphs, using one-to-one correspondence
- likelihood of familiar life events, using comparative language
- financial literacy — values of coins, and monetary exchanges
- reasoning and analyzing
- understanding and solving
- communicating and representing
- connecting and reflecting

## What foundational skills will my child develop this year?

- **Number Sense**
  - **Whole number concepts:** counting, recognizing and showing numbers and quantity
- **Computational Fluency (Operations)**
  - **Knowledge and fluency of math facts:** using strategies like counting on fingers to begin to know math facts to 10
  - **Understanding of operations:** beginning problem solving with numbers up to 20 using pictures, objects such as counters, or tallies
- **Patterning and Algebraic Thinking**
  - **Patterning:** noticing, describing, and making patterns with repeating sections
  - **Algebraic thinking:** showing how groups of objects can be made equal or unequal
- **Geometry and Measurement (Spatial Sense)**
  - **2D shapes and 3D objects:** identifying and describing 2D shapes and 3D objects
  - **Measurement:** using objects such as hands or blocks or tools like rulers to measure length or height
- **Data and Probability (Data Literacy)**
  - **Understanding, analyzing, and communicating about data:** recording and showing data on a chart
  - **Probability:** describing the likelihood of a familiar event
- **Financial Literacy:**
  - **Currency:** identifying Canadian coins and counting the total value
  - **Financial planning and decision making:** developing and practicing financial understanding. This skill also relates to Number Sense and Computational Fluency

## What will Proficient learning look like for my child by the end of the year?

*On your child's report card, Proficient means your child has a complete understanding of key skills. When they are Proficient they should:*

- Accurately count to 20 forwards and backwards, and skip count by 2, 5, and 10
- Show how groups of up to 10 objects can be made (i.e., "I have 6 stickers and add 4 more to make 10")
- Use mental math strategies like doubles, making 10, and counting on to add and subtract numbers up to 20
- Write addition/subtraction equations for numbers up to 20
- Describe and make simple patterns
- Identify, describe, and create a variety of shapes, and recognize similarities and differences between shapes
- Use mathematical words (e.g., never, always, sometimes, maybe) to describe the likelihood of an event (such as the chance of snow in June)
- Ask a question and record data using tallies or counters
- Identify and describe Canadian coins and figure out a total price up to $20
- Explore financial concepts like wants and needs through play (i.e., imaginative play like a store, a business such as dog walking)
- Problem solve with numbers, measurements, or costs up to 20, showing their process with objects or drawings
  - Understand the situation (i.e., how many friends will come to your party? How many cookies do you need?)
  - Solve a problem using objects or pictures to represent quantities
  - Compare their problem-solving method and answer with others
  - Show how they solved the problem and say why they did it that way
- Demonstrate other skills as outlined in the BC Curriculum

# Grade 2

# Mathematics: *A Pathway to Proficiency*

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## What is my child learning?

*The BC Curriculum states that students are expected to be able to know and do the following:*

- number concepts to 100
- benchmarks of 25, 50, and 100 and personal referents
- addition and subtraction facts to 20 (introduction of computational strategies)
- addition and subtraction to 100
- repeating and increasing patterns
- change in quantity, using pictorial and symbolic representation
- symbolic representation of equality and inequality
- direct linear measurement, introducing standard metric units
- multiple attributes of 2D shapes and 3D objects
- pictorial representation of concrete graphs, using one-to-one correspondence
- likelihood of familiar life events, using comparative language
- financial literacy — coin combinations to 100 cents, and spending and saving
- reasoning and analyzing
- understanding and solving
- communicating and representing
- connecting and reflecting

## What foundational skills will my child develop this year?

- **Number Sense**
  - **Whole number concepts:** skip-counting and ordering numbers up to 100, showing numbers in different forms like on a hundred chart, understanding place value
- **Computational Fluency (Operations)**
  - **Knowledge and fluency of math facts:** using strategies like doubles to develop math facts to 20
  - **Understanding of operations:** problem solving with numbers up to 100 using tools like a number line or hundred chart
- **Patterning and Algebraic Thinking**
  - **Patterning:** exploring, describing, and making complex patterns
  - **Algebraic thinking:** showing how groups of objects can be equal or unequal like 10 dimes = 20 nickels, 14 + 6 > 15
- **Geometry and Measurement (Spatial Sense)**
  - **2D shapes and 3D objects:** describing features of 2D shapes and 3D objects using mathematical language
  - **Measurement:** using metric measuring tools like rulers to measure length, width and height
- **Data and Probability (Data Literacy)**
  - **Understanding, analyzing, and communicating about data:** recording, showing, and interpreting data on a graph or chart
  - **Probability:** describing the likelihood of a familiar event
- **Financial Literacy:**
  - **Currency:** counting the total value of a mixed set of Canadian coins, solving addition and subtraction problems using cents
  - **Financial planning and decision making:** developing and practicing financial understanding. This skill also relates to Number Sense and Computational Fluency

## What will Proficient learning look like for my child by the end of the year?

*On your child's report card, Proficient means your child has a complete understanding of key skills. When they are Proficient they should:*

- Compare and order numbers up to 100 and skip count by 2, 5, and 10
- Use objects like base-10 blocks or symbols like expanded form to show how they understand place value concepts
- Use mental math strategies like doubles, making 10, and counting on to become fluent in math facts up to 20
- Show addition/subtraction for numbers up to 100 using visuals like a number line, 100 chart, or an equation
- Create patterns in multiple forms like with natural objects, in music or in movement
- Identify, describe, and create 2D shapes and 3D objects
- Use metric units to measure length
- Ask a question, record data, and create a graph. Interpret others' graphs
- Describe the likelihood of an event and explain their thinking
- Use various Canadian coins to create 100 cents
- Explore financial concepts like roles, responsibilities, jobs, spending, and saving
- Problem solve with numbers, measurements, or costs up to 100, showing their process with objects or drawings
  - Understand the situation (i.e., how many baseball diamonds could fit in our school yard? Rugby fields?)
  - Solve a problem using objects or pictures to represent quantities
  - Compare their problem-solving method and answer with others
  - Show how they solved the problem and say why they did it that way
- Other skills as outlined in the BC Curriculum

# Grade 3

# Mathematics: *A Pathway to Proficiency*

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## What is my child learning?

*The BC Curriculum states that students are expected to be able to know and do the following:*

- number concepts to 1000
- fraction concepts
- addition and subtraction to 1000
- addition and subtraction facts to 20 (emerging computational fluency)
- multiplication and division concepts
- increasing and decreasing patterns
- pattern rules using words and numbers, based on concrete experiences
- one-step addition and subtraction equations with an unknown number
- measurement, using standard units (linear, mass, and capacity)
- time concepts
- construction of 3D objects
- one-to-one correspondence with bar graphs, pictographs, charts, and tables
- likelihood of simulated events, using comparative language
- financial literacy — fluency with coins and bills to 100 dollars, and earning and payment
- reasoning and analyzing
- understanding and solving
- communicating and representing
- connecting and reflecting

## What foundational skills will my child develop this year?

- **Number Sense**
  - **Whole number concepts:** skip-counting and ordering numbers up to 1000, showing numbers in different forms like on a hundred chart, understanding place value
  - **Fractions and decimals:** writing fractions in the standard way and identifying real world examples of fractions
- **Computational Fluency (Operations)**
  - **Knowledge and fluency of math facts:** using strategies like doubles to be fluent in math facts to 20
  - **Understanding of operations:** problem solving with numbers up to 1000, multiplication and division concepts
- **Patterning and Algebraic Thinking**
  - **Patterning:** exploring, describing, and making increasing and decreasing number patterns and complex repeating patterns
  - **Algebraic thinking:** solving addition and subtraction equations with an unknown number (i.e., 3 +__= 5)
- **Geometry and Measurement (Spatial Sense)**
  - **2D shapes and 3D objects:** describing features of 3D objects using mathematical language
  - **Measurement:** using metric measuring tools like rulers to measure, understanding units of time
- **Data and Probability (Data Literacy)**
  - **Understanding, analyzing, and communicating about data:** recording, showing, and interpreting data on a graph or chart
  - **Probability:** describing the likelihood of experimental events like a coin toss
- **Financial Literacy:**
  - **Currency:** counting the total value of a set of Canadian bills and coins, solving addition and subtraction problems
  - **Financial planning and decision making:** developing and practicing financial understanding. This skill also relates to Number Sense and Computational Fluency

## What will Proficient learning look like for my child by the end of the year?

*On your child's report card, Proficient means your child has a complete understanding of key skills. When they are Proficient they should:*

- Compare and order numbers up to 1000; Skip count by 2, 3, 5, 10, 25, 100 and backwards skip count by 2, 5, and 10
- Use objects like base-10 blocks or symbols like expanded form to show how they understand place value concepts
- Identify and write fractions in concrete (e.g., measuring cups for baking), pictorial (e.g., colouring 2 out of 15 buttons blue), and symbolic (e.g., ½) forms
- Use mental math strategies like doubles, making 10, and counting on to demonstrate fluency in math facts up to 20
- Show addition/subtraction for numbers up to 1000 using visuals like a number line, 100 chart, or an equation
- Represent multiplication as "groups of" using objects, pictures, and/or symbols
- Explore number patterns and describe pattern rules
- Solve addition and subtraction equations with an unknown
- Identify and describe 3D objects
- Understand units of time and explore global systems of time
- Ask a question, record data, and create a graph. Interpret others' graphs
- Determine the value of a mixed combination of coins and bills
- Explore financial concepts like roles, responsibilities, jobs, spending, and saving money
- Problem solve with numbers, measurements, or costs, explaining their process and answer
  - Understand the situation (i.e. how many baseball diamonds could fit in our school yard? Rugby fields?)
  - Solve a problem using objects or pictures to represent quantities
  - Compare their problem-solving method and answer with others
  - Show how they solved the problem and say why they did it that way
- Other skills as outlined in the BC Curriculum