

# Canadian Mathematics Curriculum: Grade-Specific Content Areas

## Grade 5 Content Areas

### Number and Operations

- Operations with whole numbers up to 100,000
- Fractions and decimals (comparing, ordering, operations)
- Percentages (introduction)
- Order of operations
- Mental math strategies
- Multiplication and division facts
- Factors and multiples
- Prime and composite numbers

### Patterns and Algebra

- Patterns and relationships (numeric and geometric)
- Variables and expressions (introduction)
- Equality and equations
- Coding (in some provinces)
- Mathematical modeling

### Geometry and Measurement

- 2D shapes and 3D objects (properties and relationships)
- Angles (measuring, classifying)
- Perimeter and area of regular shapes
- Volume of rectangular prisms
- Coordinate geometry (introduction)
- Transformations (reflections, rotations)
- Units of measurement and conversions

### Data Management and Probability

- Data collection and organization
- Graphs and charts (creating and interpreting)

- Mean, median, and mode
- Probability of single events
- Experimental vs. theoretical probability

## **Financial Literacy**

- Money concepts
- Basic financial planning
- Consumer awareness

## **Grade 6 Content Areas**

### **Number and Operations**

- Operations with larger numbers
- Fractions and decimals (advanced operations)
- Percentages (calculations and applications)
- Ratio and proportion
- Integers (introduction)
- Exponents (introduction)
- Order of operations with brackets

### **Patterns and Algebra**

- Patterns and relationships (extending and creating)
- Variables and expressions
- Solving one-step equations
- Coding and algorithms
- Mathematical modeling

### **Geometry and Measurement**

- Properties of polygons
- Angle relationships
- Area of triangles and parallelograms
- Volume and surface area
- Coordinate geometry
- Transformations (translations, reflections, rotations)
- Units of measurement and conversions

## **Data Management and Probability**

- Data collection, organization, and analysis
- Various graph types
- Measures of central tendency
- Probability of independent events
- Experimental vs. theoretical probability

## **Financial Literacy**

- Financial decision-making
- Saving and spending
- Basic budgeting

## **Grade 7 Content Areas**

### **Number and Operations**

- Integers (operations and applications)
- Rational numbers
- Fractions, decimals, and percentages (relationships)
- Ratio, rate, and proportion
- Exponents and square roots
- Scientific notation (introduction)

### **Patterns and Algebra**

- Algebraic expressions and formulas
- Linear equations and inequalities
- Variables and constants
- Solving multi-step equations
- Patterns and relationships
- Coding and algorithms

### **Geometry and Measurement**

- Angle relationships
- Circles (properties and calculations)
- Area of composite shapes
- Volume and surface area of various 3D objects
- Coordinate geometry

- Transformations and similarity
- Pythagorean relationship (introduction)

## **Data Management and Probability**

- Statistical analysis
- Measures of central tendency and dispersion
- Probability of compound events
- Tree diagrams and sample spaces
- Data collection methods

## **Financial Literacy**

- Interest rates
- Financial planning
- Consumer math

## **Grade 8 Content Areas**

### **Number and Operations**

- Rational and irrational numbers
- Square roots and cube roots
- Exponents and scientific notation
- Operations with integers and rational numbers
- Ratio, rate, and proportion (advanced)

### **Patterns and Algebra**

- Algebraic expressions and equations
- Linear relations
- Slope and y-intercept
- Solving and graphing linear equations
- Systems of equations (introduction)
- Patterns and relationships

### **Geometry and Measurement**

- Pythagorean theorem
- Properties of 3D objects
- Surface area and volume of complex shapes

- Coordinate geometry
- Transformations (combined)
- Circle geometry

## **Data Management and Probability**

- Statistical analysis and bias
- Measures of central tendency and dispersion
- Probability of independent and dependent events
- Simulations
- Data collection and analysis

## **Financial Literacy**

- Financial planning and budgeting
- Interest calculations
- Investment concepts

# **Provincial Variations in Content Emphasis**

## **Ontario**

- Strong emphasis on financial literacy as a distinct strand
- Social-emotional learning skills integrated throughout
- Coding introduced across all grades
- Mathematical modeling emphasized

## **British Columbia**

- Focus on curricular competencies alongside content
- Indigenous perspectives integrated throughout
- Emphasis on real-world applications
- Computational thinking emphasized

## **Alberta**

- Strong emphasis on mental mathematics
- Focus on mathematical processes
- Connections to other subjects emphasized
- Problem-solving in various contexts

## Quebec

- Three competencies emphasized across all content
- Cultural references integrated
- Focus on mathematical reasoning
- Situational problem-solving emphasized

## Common Mathematical Processes Across Grades 5-8

Across all provinces, these mathematical processes are emphasized throughout grades 5-8:

1. **Problem Solving** - Developing and applying strategies to solve problems
2. **Reasoning** - Using logical thinking to analyze situations
3. **Communicating** - Using mathematical language and representations
4. **Connecting** - Making connections within mathematics and to other subjects
5. **Representing** - Using various forms to represent mathematical ideas
6. **Reflecting** - Thinking about one's own mathematical understanding
7. **Using Technology** - Selecting and using appropriate tools