Canadian Mathematics Curriculum Structure

National Overview

In Canada, education is a provincial responsibility, and each province and territory establishes its own curriculum. However, there are significant commonalities in mathematics education across the country, with provinces often collaborating to ensure comparable standards and content.

Key Collaborative Frameworks

1. **Western and Northern Canadian Protocol (WNCP)**
2. Includes: Alberta, Manitoba, Northwest Territories, Nunavut, Saskatchewan, and Yukon
3. Features a common curriculum framework in mathematics from preprimary to Grade 9
4. Last amended in May 2011
5. Helps maintain comparable curriculum content across participating jurisdictions
6. **Council of Atlantic Ministers of Education and Training (CAMET)**
7. Includes: New Brunswick, Newfoundland and Labrador, Nova Scotia, and Prince Edward Island
8. Established in April 2004
9. Collaborates on curriculum governance from preprimary to postsecondary levels

Common Content Strands Across Provinces

Despite provincial variations, most Canadian mathematics curricula for grades 5-8 include these core content strands:

1. **Number and Operations**
2. Whole numbers, fractions, decimals, integers
3. Operations and properties
4. Number sense and numeration

5. **Patterns and Algebra**

6. Patterns and relationships
7. Variables and equations

8. Algebraic expressions and equations

9. **Geometry and Measurement**

10. 2D and 3D shapes and properties
11. Measurement concepts and skills

12. Spatial sense

13. **Data Management and Probability**

14. Data collection and organization
15. Data analysis and interpretation

16. Probability concepts

17. **Financial Literacy** (emerging as a distinct strand in some provinces)

18. Money concepts
19. Financial planning
20. Consumer awareness

Common Mathematical Processes

Across provinces, mathematics curricula emphasize these mathematical processes:

1. **Problem Solving** - Exploring real-life problems and developing solutions
2. **Reasoning** - Developing logical thinking and mathematical reasoning
3. **Communicating** - Using various forms of mathematical communication
4. **Connecting** - Relating mathematics to students' experiences and other subjects
5. **Representing** - Using multiple representations to understand concepts
6. **Using Technology** - Applying appropriate tools to explore mathematical concepts

Provincial Curriculum Structures

Ontario

Structure: - The 2020 Ontario mathematics curriculum organizes content into six areas: 1. Number 2. Algebra 3. Data 4. Spatial Sense 5. Financial Literacy 6. Social-Emotional Learning Skills in Mathematics

Grade Organization: - Elementary: Grades 1-8 - Grade 5-8 corresponds to Junior (5-6) and Intermediate (7-8) divisions

British Columbia

Structure: - BC's curriculum is organized around three components: 1. Big Ideas (key concepts) 2. Curricular Competencies (what students can do) 3. Content (what students know)

Grade Organization: - Elementary: K-7 - Secondary: 8-12 - Grades 5-8 span both elementary and secondary levels

Alberta

Structure: - Based on the Common Curriculum Framework for K-9 Mathematics from WNCP - Organized into four strands: 1. Number 2. Patterns and Relations 3. Shape and Space 4. Statistics and Probability

Grade Organization: - Division II: Grades 4-6 - Division III: Grades 7-9 - Grades 5-8 span both Division II and III

Quebec

Structure: - Quebec's mathematics curriculum is organized into three competencies: 1. Solves a situational problem 2. Uses mathematical reasoning 3. Communicates by using mathematical language

- Content is organized into five areas:
- Arithmetic
- Algebra
- Geometry
- Statistics
- Probability

Grade Organization: - Elementary Cycle 3: Grades 5-6 - Secondary Cycle 1: Grades 7-8 (Secondary I and II) - Grades 5-8 span both Elementary Cycle 3 and Secondary Cycle 1

Grade Mapping Across Provinces

International Grade	Ontario	British Columbia	Alberta	Quebec
Grade 5	Grade 5	Grade 5	Grade 5	Elementary Cycle 3, Year 1
Grade 6	Grade 6	Grade 6	Grade 6	Elementary Cycle 3, Year 2
Grade 7	Grade 7	Grade 7	Grade 7	Secondary I
Grade 8	Grade 8	Grade 8	Grade 8	Secondary II

Curriculum Review and Implementation Cycles

Canadian provinces regularly review and update their mathematics curricula:

- **Ontario**: Latest major update in 2020
- **British Columbia**: Curriculum redesign implemented in 2016-2018
- **Alberta**: Ongoing curriculum renewal with phased implementation
- **Quebec**: Progressive implementation of updated curriculum

This regular review process ensures that mathematics education remains current and responsive to evolving educational research and societal needs.