Grade 9 math: a guide for parents

Learn about the new Grade 9 math course and how you can support your child's learning.

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Moving to one math course

Starting September 2021, there will be one new Grade 9 math course for all students. This means that there will no longer be applied or academic courses for Grade 9 math.

The new course will provide all students with the same learning experience. This is part of Ontario's four-year math strategy to help students:

- perform better in math
- solve everyday math problems
- be prepared for jobs of the future

Benefits for all students

There is strong evidence that supports not having Grade 8 students choose between applied and academic courses when they enter Grade 9. This is called de-streaming.

Some key benefits include:

- setting high academic standards for all students
- enabling students with a range of skills and interests to learn together
- increasing opportunities and helping to remove systemic barriers for Indigenous, Black and other racialized students, students who live in low-income households, and students with disabilities and special education needs
- keeping future options open for all students (for example, going to college, university or apprenticeship)

Key changes

Ontario's Grade 9 math curriculum was last updated in 2005. The table below highlights main changes to the course.

Content and structure

2005	2021
• Students were placed in academic and applied streams. • Students found it difficult to connect what they learned from Grade 8 to Grade 9. • There were differences between English-language and French-language courses.	• There will be one math course for all Grade 9 math students. • There will be clear connections from Grade 8 to Grade 9 for students. • English-language and French-language courses will be the same while respecting cultural and language differences.

Working with numbers

2005	2021
• Students were expected to have a solid understanding of number and be ready to apply this understanding to new concepts.	• Students will continue to develop their understanding of numbers as they learn about integers, fractions, decimal numbers, percentages, ratios and rates and their application in real-life situations.

Real-life connections

2005	2021
• There were real-life examples for students that may be outdated and have less relevance in today's world.	• Students will connect what they are learning in class to real-life situations. • They will develop an understanding of the importance of math across various cultures.

Algebra

2005	2021
• Learning was focused on linear relations, such as a graph with a straight line.	• Students will continue to learn about linear relations. They will also learn about non-linear relations to help students prepare for future math courses. For example, analysing a curved graph and determining the rate of depreciation.

Building confidence in math skills

2005	2021
• Tools and strategies to build confidence in math skills were limited.	• Students will learn about tools and strategies to help them recognize their emotions and identify resources that help them build a healthy relationship with math.

Coding

2005	2021
• There was no mandatory learning of coding skills.	• Students will continue to build their coding skills from elementary math, including learning to create, read and alter code. • They will learn to use coding as a tool to understand complex math concepts, which helps improve their ability to solve problems.

Data literacy

2005	2021
• Learning was focused on collecting and managing data.	• Learning will build on the elementary math curriculum as students develop their understanding of data, including how it is collected, used and stored by various organizations.

Geometry and measurement

2005	2021
• Students solved problems involving measurement using metric units.	• Students will solve measurement problems using metric and imperial units, which is often used in skilled trades.

Financial literacy

2005	2021
• There were no specific expectations on financial literacy learning.	• Students will learn about financial literacy and apply their knowledge to real-life experiences. For example, understanding the appreciation and depreciation of assets, like a car, or learning how to modify a budget based on changes in circumstances.

What students will learn

The new Grade 9 math course builds on the 2020 elementary (Grades 1 to 8) mathematics curriculum. In this course, students will learn math concepts and skills to prepare them for their future. Below are the areas of focus:

Social-emotional learning skills in mathematics

Students will:

- build their social-emotional learning skills, such as learning to recognize and identify emotions that support mathematical learning
- build their confidence and develop a healthy relationship with math

Mathematical thinking and making connections

Students will:

- use their problem-solving, communication and reasoning skills as they develop their mathematical knowledge
- make connections between what they learn in math and their real-life experiences

Number

Students will:

- work with different types of numbers, such as powers with positive and negative exponents
- solve problems involving positive and negative fractions, decimal numbers and integers
- build their knowledge and skills related to percentages, ratios, rates and proportions and make connections to real-life situations (for example, comparing costs)

Algebra

Students will:

- develop their understanding of algebraic expressions and equations
- apply coding skills to understand complex math concepts and make predictions
- learn about various linear and non-linear relations
- increase their understanding of rates of change and apply it to make sense of real-life situations (for example, analysing motion of a car or rates of pollution)

Data

Students will:

- build their data literacy skills to examine the collection, representation and use of data, including how data is used to inform decisions
- continue to apply mathematical modelling to analyse real-life situations, such as the impact of social media on the economy

Geometry and measurement

Students will:

- make connections between geometric shapes and their applications in architecture, engineering and design
- analyse and create designs to increase understanding of geometric relationships
- solve real-life problems that involve applying their knowledge of perimeter, area, surface area and volume, such as planning and creating models of a community garden

Financial literacy

Students will:

- build their financial literacy by learning to manage finances, such as working with budgets and understanding appreciation and depreciation of assets
- analyse various financial situations and learn how math can be applied to make informed decisions (for example, understanding shifts in the stock market)
- examine how interest rates, down payments and other factors impact purchasing decisions

Support your child's learning

You can support your teen by helping them understand how math plays a role in everyday activities and in their future. For example:

- show an interest in what your child is learning in class
- find ways to incorporate math into everyday activities at home (for example, making goals to save, calculating discounts and interest payments, or predicting travel time)
- talk with your child about their strengths, interests, education and career goals
- help your child make connections between what they learn in school, their interests and the courses they choose to take
- talk with your child about career opportunities that rely on math skills
- ask your child's teacher, guidance counsellor or other school staff questions about skills and experiences required to help your child as well as the supports that are available along the way
- stay informed about your child's learning and stay in touch with their school and teachers

Learn more about how you can prepare your child for Grade 9 math.

How we developed the new course

To develop the new Grade 9 math course, Ontario reviewed current research and best practices from leading jurisdictions.

The course was also informed by feedback from education stakeholders and partners, including postsecondary institutions and industry partners.

Resources

Grade 1-8 math curriculum (2020)

Grade 10 mathematics curriculum (2005) and Grade 11–12 mathematics curriculum (2007)

Mathify