

STILL HAVE QUESTIONS?

Are there still levels in math?

Instead of levels, there are "pathways" which include courses designed to better meet your interests and post-secondary needs.

What if I don't know what I want to do after I graduate?

You should consider courses in the Pre-Calculus or Foundations pathways to keep a variety of options open for the future.

Can I switch pathways?

Yes. If you have started to take courses in one pathway, you can take courses in another one, so long as you complete the prerequisites.

Should I take more math in Gr. 12 if I don't need it to graduate?

You may need Gr. 12 courses for entrance to post-secondary programs. You will also receive a Grade 12 credit and keep your skills current which will help you no matter what you decide to do in life.

For more information, contact the Guidance Counsellor at your school.

High School Mathematics

Which "Pathway" is best for you?



An understanding of math is essential in today's competitive, technological world. Starting in 2008, the K-12 mathematics curriculum in New Brunswick has been changing to help students be better prepared for whatever they choose to do after high school. The new curriculum is focused on providing students with the skills and knowledge to confidently solve problems and contribute to society.

The high school mathematics program has changed significantly. There are new courses for Grades 9 to 12 and the Grades 11 and 12 courses are organized into 3 "pathways". These pathways and the courses included in each are explained in more detail on the next page.

➤ Financial and Workplace Mathematics



➤ Foundations of Mathematics



➤ Pre-Calculus



- * Each pathway is designed to provide students with the mathematical understandings and critical-thinking skills that have been identified for specific post-secondary programs of study and/or for direct entry into the work force.
- * Students should select courses in the pathway that best fits their interests and post-secondary plans. This may go beyond the courses required to graduate.

REQUIRED COURSES

What math courses do I need to graduate?

- ◆ Mathematics 9
 - ◆ Geometry, Measurement, and Finance 10
 - ◆ Number, Relations, and Functions 10
 - ◆ Plus: one more Grade 11 course
 - ◆ Financial and Workplace 11
- OR**
- ◆ Foundations of Mathematics 11



GRADE 9: MATHEMATICS 9

Length: Full year

Prerequisite: Grade 8 mathematics

Topics: exponents and bases, linear relations and equations, polynomials, circle properties, surface area, scale diagrams, data collection and displays, histograms, probability

GRADE 10: Geometry, Measurement, and Finance 10

Length: 1 semester

Prerequisite: Grade 9 mathematics

Topics: Pythagorean Theorem, polygons, angles, trigonometric ratios, metric and Imperial systems of measurement, surface area and volume, unit pricing, currency exchange, income (gross & net pay), credit cards, loans, interest

GRADE 10: Number, Relations, and Functions 10

Length: 1 semester

Prerequisite: Grade 9 mathematics

Topics: prime factors, common factors, square and cube roots, irrational numbers, integral and rational exponents, polynomial expressions, trinomial factoring, linear relations and functions, slope, distance formula, midpoint formula

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Math Pathways: Which one is best for you?



➤ FINANCIAL AND WORKPLACE MATHEMATICS

This pathway is designed for students who plan to directly enter the workforce or take post-secondary courses that require applied mathematics skills.

GRADE 11: *Financial and Workplace Mathematics 11*

Length: 1 semester

Prerequisite: Geometry, Measurement, and Finance 10

Topics: personal budgets, investment portfolios, renting and buying, slope and rate of change, scale, statistics

Required for programs such as: Early Childhood Education, Firefighting, Drafting, Welding, Plumbing, Carpentry, Cosmetology, Bachelor of Arts and Fine Arts

GRADE 12: *Financial and Workplace Mathematics 12*

Length: 1 semester

Prerequisite: Financial and Workplace Mathematics 11

Topics: measurement and instruments, sine and cosine laws, transformations, business (sales, profits, loss), linear relations, statistics, percentiles, probability, analysis of puzzles and games

Required for programs such as: Culinary arts, Graphic design
Recommended for: Art and design programs, Forest technology



➤ FOUNDATIONS OF MATHEMATICS

This pathway is designed for students who plan to take post-secondary courses that do not require calculus.

GRADE 11: *Foundations of Mathematics 11*

Length: 1 semester

Prerequisites: Number, Relations, and Functions 10 and Geometry, Measurement, and Finance 10

Topics: analysis of puzzles and games, properties of angles and triangles, cosine and sine laws, linear inequities, quadratic functions, rates, relationship among scale factors, renting and buying, investment portfolios (rate of return)

Required for programs such as: College: medical laboratory technology, business administration, practical nursing
Bachelor degrees in: Arts and Fine Arts

GRADE 12: *Foundations of Mathematics 12*

Length: 1 semester

Prerequisite: Foundations of Mathematics 11

Topics: statistics (standard deviation, confidence intervals), logical reasoning, set theory, probability (permutations and combinations), binomial theorem, polynomial functions, exponential and logarithmic functions, sinusoidal functions

Required for programs such as: College: engineering technology, computer technician, pharmacy technology
Bachelor degrees in: Nursing, Business Administration, Economics, Kinesiology, Psychology



➤ PRE-CALCULUS

This pathway is designed for students who plan to take post-secondary courses that require calculus.

GRADE 11: *Pre-Calculus 11*

Length: 1 semester

Prerequisite: Foundations of Mathematics 11

Topics: absolute value functions, radical expressions and equations, trigonometric ratios, polynomial factoring, linear inequalities, quadratic functions and inequalities

Required for programs such as: College engineering and environmental technology and other programs requiring more theoretical mathematics

GRADE 12: *Pre-Calculus A 120*

Length: 1 semester

Prerequisite: Pre-Calculus 11

Topics: graphs of functions and their related equations (operations, translations, stretches), logarithms and logarithmic functions and equations, trigonometric reasoning (ratios, sine, cosine, tangents, equations, and identities)

Required for programs such as: Most programs that require Pre-Calculus A, also require Pre-Calculus B

GRADE 12: *Pre-Calculus B 120*

Length: 1 semester

Prerequisite: Pre-Calculus A 120

Topics: arithmetic and geometric sequences, polynomials (factoring and functions), other functions (radical, reciprocal, rational), limits of functions

Required for programs such as: Bachelor degrees in: Science, Engineering, Mathematics, Computer Science

GRADE 12: *Calculus 12*

Length: 1 semester

Prerequisite: Pre-Calculus B 120

Topics: derivatives of functions, product rule, quotient rule, chain rule, mean value theorem, extreme value theorem, optimization, l'Hopital's rule, integration

Not required for any programs, but would support: Bachelor degrees in: Science, Engineering, Mathematics, Computer Science