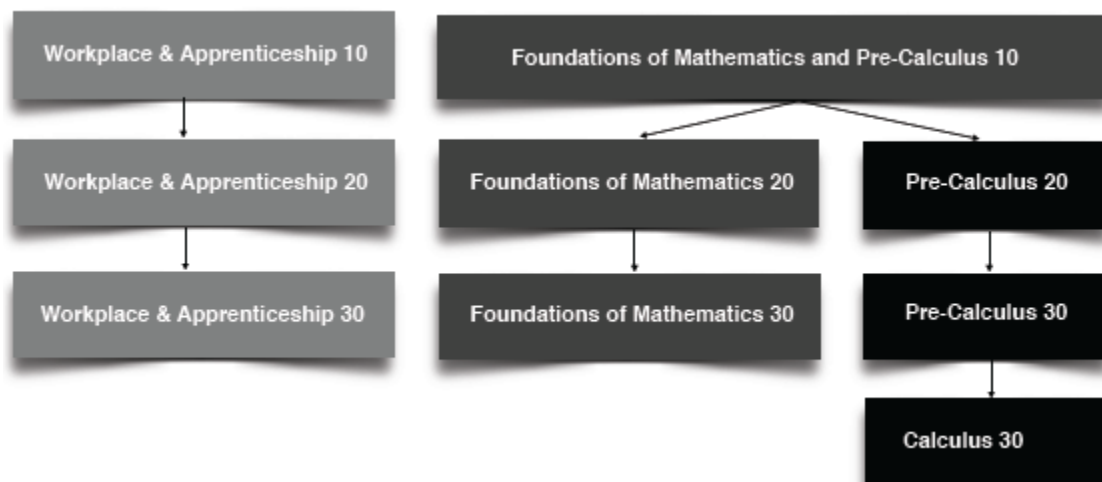


Summary of the Mathematics Pathways



Please note: there are no arrows connecting courses in different pathways. Students wishing to change pathways need to first get the pre-requisite courses for the pathway. For example, if students have taken Pre-Calculus 20, they cannot move directly into either Foundations of Mathematics 30 or Workplace & Apprenticeship 30. In addition, if students have not already taken Workplace & Apprenticeship 10, they must do so before entering into Workplace & Apprenticeship 20. Students may take courses from more than one pathway for credit. **The current math credit requirements for graduation are: one 10 level credit and one 20 level credit in mathematics.**

Workplace & Apprenticeship	Foundations of Mathematics	Pre-Calculus
The Workplace & Apprenticeship pathway is designed to provide students with the mathematical knowledge, skills, and understanding needed for entry into some trades-related courses and for direct entry into the workforce.	This pathway is designed to provide students with the mathematical knowledge, skills and understandings required for post-secondary studies. Content in this pathway will meet the needs of students intending to pursue careers in areas that typically require a degree, but are not math intensive, such as humanities, fine arts, and social sciences.	The Pre-Calculus pathway is designed to provide students with the mathematical knowledge, skills and understandings required for post-secondary studies. Content in this pathway will meet the needs of students intending to pursue careers that will require a degree with a math intensive focus.

Sample Course Loads*

Student Going Into Humanities

Grade	Grade 10	Grade 11	Grade 12
Semester 1	Foundations and Pre-Calculus 10	Foundations 20	Foundations 30
Semester 2	Workplace & Apprenticeship 10	(another 20-level math, if desired)	(another 30-level math, if desired)

Student Going Into Math/Science

Grade	Grade 10 (with a 85% or higher in Math 9)	Grade 11	Grade 12
Semester 1	Foundations and Pre-Calculus 10	Pre-Calculus 20	Pre-Calculus 30
Semester 2	Foundations 20	Foundations 30	Calculus 30

Student Unsure of Future Career

Grade	Grade 10	Grade 11	Grade 12
Semester 1	Foundations and Pre-Calculus 10	Consult with	Consult with
Semester 2	Workplace & Apprenticeship 10	Career Counsellor	Career Counsellor

*Dependent upon course offering and availability.

Summary of Mathematics Pathways Content

	Workplace and Apprenticeship	Foundations of Mathematics	Pre-Calculus
Grade 10	<ul style="list-style-type: none"> ▪ Preservation of equality ▪ SI, Imperial measurement ▪ Area and surface area ▪ Pythagorean Theorem ▪ Similarity of polygons ▪ Trigonometric ratios ▪ Angles ▪ Spatial reasoning games and puzzles ▪ Unit Pricing and Currency Exchange ▪ Income 	<ul style="list-style-type: none"> ▪ Factors ▪ Multiplying and factoring polynomials ▪ Irrational numbers in radical and mixed radical forms ▪ SI and Imperial measurement ▪ Trigonometric ratios ▪ Linear relations ▪ Functions ▪ Slope ▪ Solving systems of linear equations 	
Grade 11	<ul style="list-style-type: none"> ▪ Preservation of equality ▪ Numerical reasoning games and puzzles ▪ Surface area and volume ▪ Problems involving right triangles ▪ Scale diagrams ▪ Slope ▪ Proportional reasoning ▪ Data representation ▪ Financial institution services ▪ Credit options ▪ Simple and compound interest 	<ul style="list-style-type: none"> ▪ Math research project ▪ Inductive and deductive reasoning ▪ Proportional reasoning ▪ Scale diagrams ▪ Properties of angles and triangles ▪ Cosine and sine law ▪ Statistics: normal distribution, standard deviation, z score, confidence intervals and levels, and margin of error ▪ Linear inequalities ▪ Quadratic functions 	<ul style="list-style-type: none"> ▪ Absolute value of real numbers and of linear and quadratic functions ▪ Radicals with numerical and variable radicands ▪ Rational expressions and equations ▪ Trigonometric ratios ▪ Cosine and sine law ▪ Factoring polynomials ▪ Quadratic functions ▪ Solutions of quadratic functions ▪ Quadratic inequalities ▪ Arithmetic and geometric sequences and series ▪ Reciprocals of linear and quadratic functions
Grade 12	<ul style="list-style-type: none"> ▪ Logical reasoning games and puzzles ▪ Analyze the precision of measuring instruments ▪ Cosine and sine law problems ▪ Problem solving using properties of triangles, quadrilaterals and regular polygons ▪ Transformations of 2-D and 3-D shapes ▪ Linear relations ▪ Statistics: measures of central tendency, percentiles ▪ Probability ▪ Credit options within a vehicle purchase ▪ Small business finances 	<ul style="list-style-type: none"> ▪ Inductive and deductive reasoning ▪ Set theory ▪ Odds and probability: dependent and independent events ▪ Combinatorics ▪ Functions: polynomial, logarithmic, and sinusoidal ▪ Research that requires data collection and analysis ▪ Financial decision making 	<ul style="list-style-type: none"> ▪ Angles expressed in degrees and radians ▪ Trigonometric ratios and the unit circle ▪ Graphs of trig functions ▪ First and second degree trig equations ▪ Trig identities ▪ Operations on and compositions of functions ▪ Transformations of functions ▪ Reflections of functions, relations and inverses ▪ Logarithms ▪ Polynomial functions ▪ Radical and rational functions ▪ Permutations ▪ Binomial theorem