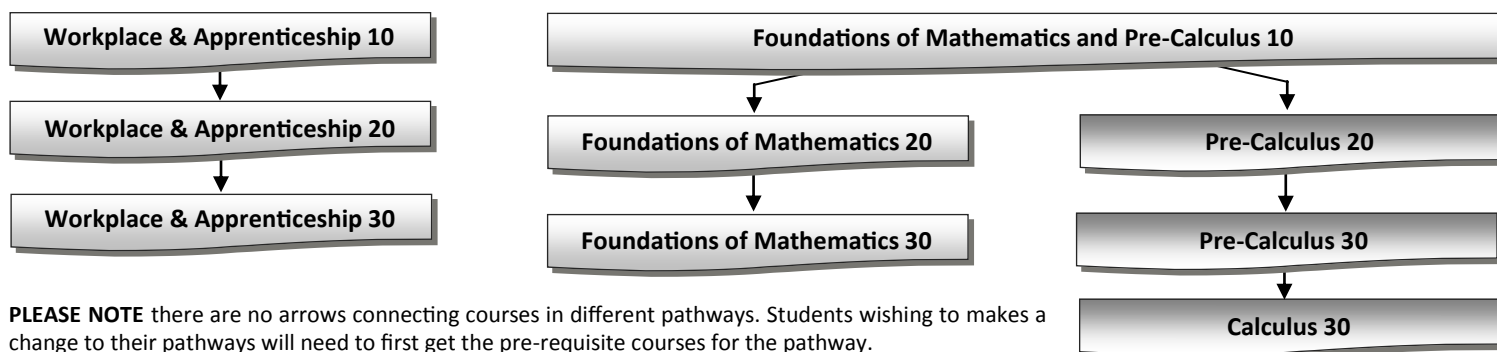


Summary of the Mathematics Pathways



PLEASE NOTE there are no arrows connecting courses in different pathways. Students wishing to make a change to their pathways will need to first get the pre-requisite courses for the pathway.

Example: student has taken Pre-Calculus 20, they cannot move directly into either Foundations of Mathematics 30 or Workplace & Apprenticeship 30.

Students who have not taken Workplace & Apprenticeship 10 must do so before entering into Workplace & Apprenticeship 20. Students may take courses from more than one pathway for credit.

The current credit requirements for Grade 12 graduation are: one (1) 10 level credit and one (1) 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 of the trade-related programs and for direct entry into the workforce.	The pathway for Foundations of Mathematics is designed to provide students with mathematical knowledge, skills and understandings required for post-secondary studies. Contact in this pathway will meet the needs of students intending to pursue careers that typically require a degree, but are not 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

Note: These are dependent upon course offering and availability

Student entering Humanities

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

Advanced Math Student

Grade	Grade 10	Grade 11	Grade 12
Semester 1	Foundations & Pre-Calculus 10	Pre-Calculus 20	Pre-Calculus 30
Semester 2	Foundations 20	Foundations 30	Calculus 30

Student Unsure of Future Plans/Career

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

A.P. (Advanced Placement)

Grade	Grade 10	Grade 11	Grade 12
Semester 1	Foundations & Pre-Calculus 10 (AP)	Pre-Calculus 20 (AP)	AP Calculus 30 (<i>all year</i>)
Semester 2	Foundations of Math 20 (AP)	Pre-Calculus 30 (AP)	

Summary of Mathematics Pathways Content

	Workplace & 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, 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"> • 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 • Transformation 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