Overall Expectations for Grade 7 – 10 Math

GRADE 7	
Strand	**Overall Expectation**
Number Sense and Numeration	represent, compare, and order numbers, including integers;
	demonstrate an understanding of addition and subtraction of fractions and integers, and apply a variety of computational strategies to solve problems involving whole numbers and decimal numbers;
	demonstrate an understanding of proportional relationships using percent, ratio, and rate.
Measurement	report on research into real-life applications of area measurements;
	determine the relationships among units and measurable attributes, including the area of a trapezoid and the volume of a right prism.
Geometry and Spatial Sense	construct related lines, and classify triangles, quadrilaterals, and prisms;
	develop an understanding of similarity, and distinguish similarity and congruence;
	describe location in the four quadrants of a coordinate system, dilatate two-dimensional shapes, and apply transformations to create and analyse designs.
Patterning and Algebra	represent linear growing patterns (where the terms are whole numbers) using concrete materials, graphs, and algebraic expressions;
	model real-life linear relationships graphically and algebraically, and solve simple algebraic equations using a variety of strategies, including inspection and guess and check.
Data Management and Probability	collect and organize categorical, discrete, or continuous primary data and secondary data and display the data using charts and graphs, including relative frequency tables and circle graphs;
	make and evaluate convincing arguments, based on the analysis of data;
	compare experimental probabilities with the theoretical probability of an outcome involving two independent events.

GRADE 8	
Strand	**Overall Expectation**
Number Sense and Numeration	represent, compare, and order equivalent representations of numbers, including those involving positive exponents;
	solve problems involving whole numbers, decimal numbers, fractions, and integers, using a variety of computational strategies;
	solve problems by using proportional reasoning in a variety of meaningful contexts.
Measurement	research, describe, and report on applications of volume and capacity measurement;
	determine the relationships among units and measurable attributes, including the area of a circle and the volume of a cylinder.
Geometry and Spatial Sense	demonstrate an understanding of the geometric properties of quadrilaterals and circles and the applications of geometric properties in the real world;
	develop geometric relationships involving lines, triangles, and polyhedra, and solve problems involving lines and triangles;
	represent transformations using the Cartesian coordinate plane, and make connections between transformations and the real world.
Patterning and Algebra	represent linear growing patterns (where the terms are whole numbers) using graphs, algebraic expressions, and equations;
	model linear relationships graphically and algebraically, and solve and verify algebraic equations, using a variety of strategies, including inspection, guess and check, and using a "balance" model.
Data Management and Probability	collect and organize categorical, discrete, or continuous primary data and secondary data and display the data using charts and graphs, including frequency tables with intervals, histograms, and scatter plots;
	apply a variety of data management tools and strategies to make convincing arguments about data;
	use probability models to make predictions about real-life events.

Overall Expectations for Grade 7 – 10 Math

GRADE 9	
Strand	**Overall Expectation**
Number Sense and Algebra	solve problems involving proportional reasoning;
	simplify numerical and polynomial expressions in one variable, and solve simple first-degree equations.
Linear Relations	apply data-management techniques to investigate relationships between two variables;
	determine the characteristics of linear relations;
	demonstrate an understanding of constant rate of change and its connection to linear relations;
	connect various representations of a linear relation, and solve problems using the representations;
Measurement and Geometry	determine, through investigation, the optimal values of various measurements of rectangles;
	solve problems involving the measurements of two-dimensional shapes and the volumes of three-dimensional figures;
	determine, through investigation facilitated by dynamic geometry software, geometric properties and relationships involving two-dimensional shapes, and apply the results to solving problems;
Number Sense and Algebra	solve problems involving proportional reasoning;

GRADE 10	
Strand	**Overall Expectation**
Measurement and Trigonometry	use their knowledge of ratio and proportion to investigate similar triangles and solve problems related to similarity;
	solve problems involving right triangles, using the primary trigonometric ratios and the Pythagorean theorem;
	solve problems involving the surface areas and volumes of three-dimensional figures, and use the imperial and metric systems of measurement;
Modelling Linear Relations	manipulate and solve algebraic equations, as needed to solve problems.
	graph a line and write the equation of a line from given information;
	solve systems of two linear equations, and solve related problems that arise from realistic situations.
Quadratic Relations of the Form y = ax^2 + bx + c	manipulate algebraic expressions, as needed to understand quadratic relations;
	identify characteristics of quadratic relations;
	solve problems by interpreting graphs of quadratic relations;