



Crocus Plains Regional Secondary School



Course Outline

Course Title: Math 9 (MAT 10F)

Teacher: J. Slator

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Units and General Learning Outcomes:

Unit	Outcomes
Number Sense (~12 classes)	• Demonstrate an understanding of rational numbers by 1. comparing and ordering rational numbers 2. solving problems that involve arithmetic operations on rational numbers • Determine the square root of positive rational numbers that are perfect squares. • Determine the approximate square root of positive rational numbers that are non-perfect squares.
Powers /Exponents (~9 classes)	• Demonstrate an understanding of powers with integral bases (excluding base 0) and whole number exponents by 1. representing repeated multiplication using powers 2. using patterns to show that a power with an exponent of zero is equal to one 3. solving problems involving powers • Demonstrate an understanding of operations on powers with integral bases (excluding base 0) and whole number exponents. • Explain and apply the order of operations, including exponents, with and without technology.
Polynomials (~10 classes)	• Demonstrate an understanding of polynomials (limited to polynomials of degree less than or equal to 2). • Model, record, and explain the operations of addition and subtraction of polynomial expressions, concretely, pictorially, and symbolically (limited to polynomials of degree less than or equal to 2). • Model, record, and explain the operations of multiplication and division of polynomial expressions (limited to polynomials of degree less than or equal to 2) by monomials, concretely, pictorially, and symbolically.
Linear Relations → Solving Linear Equations & Inequalities (~12 classes)	• Model and solve problems using linear equations of the form 1. $ax = b$ 2. $ax + b = c$ 3. $ax = b + cx$ 4. $a(x + b) = c$ 5. $ax + b = cx + d$ 6. $a(bx + c) = d(ex + f)$ 7. $\frac{a}{x} = b$, $x \neq 0$ where a, b, c, d, e and f are rational numbers. • Explain and illustrate strategies to solve single variable linear inequalities with rational number coefficients within a problem-solving context.

Linear Relations II → Patterns & Graphs (~11 classes)	- Generalize a pattern arising from a problem-solving context using linear equations and verify by substitution. - Graph linear relations, analyze the graph, and interpolate or extrapolate to solve problems.
Geometry – 2D/3D (~9 classes)	- Determine the surface area of composite 3-D objects to solve problems - Demonstrate an understanding of similarity of polygons.
Symmetry (~6 classes)	Demonstrate an understanding of line and rotation symmetry.
Circle Geometry (~5 classes)	- Solve problems and justify the solution strategy using circle properties including - the measure of the central angle is equal to twice the measure of the inscribed angle subtended on the same arc - the inscribed angles subtended by the same arc are congruent - a tangent to a circle is perpendicular to the radius at the point of tangency
Statistics (~4 classes)	- Describe the effect of: Bias, use of language, ethics, cost, time and timing, privacy, cultural sensitivity on the collection of data. - Select and defend the choice of using either a population or a sample of a population to answer a question. - Develop and implement a project plan for the collection, display, and analysis of data by... - formulating a question for investigation → choosing a data collection method that includes social considerations → selecting a population or a sample → collecting the data → displaying the collected data in an appropriate manner → drawing conclusions to answer the question - Demonstrate an understanding of the role of probability in society.

Final Mark - Course Evaluation Structure:

- Unit Tests - 45%
- Assignments/Quizzes - 40%
- Final Exam - 15%

Student Expectations

- Arrive to class on time with required materials (paper, pencil, calculator, etc).
- Complete all course work (assignments, tests, daily work).
- Be respectful of classmates, classroom furniture, and supplies.