CROCUS PLAINS REGIONAL SECONDARY SCHOOL
COURSE OUTLINE AND ASSESSMENT GUIDE

Mathematics 9 (MATH10F)

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Course Description:

- Grade 9 Mathematics is a foundation course to prepare students for multiple possible pathways in Grades 10 to 12. The course builds on the understandings from Kindergarten to Grade 8 Mathematics, and continues with the four strands of mathematics: number, patterns and relations, shape and space, and statistics and probability.
- The activities that take place in my Grade 9 Mathematics classroom stem from a problem-solving approach and are based on six mathematical processes. Students should develop an understanding of the nature of mathematics through specific knowledge, skills, and connections among and between strands and units of study (see below).

Units of Study

Unit Title	Learning Outcomes	Assessment Plan	Proposed Time
Rational Numbers	Demonstrate an understanding of rational numbers. Explain and apply the order of operations, including exponents, with and without technology.	*Formative Assessment* Assessment may include: • Open Tasks • Group Problem Solving • Individual Practice • Hands-On Tasks *Summative Assessment* Unit Quizzes/Projects	Approx. 10 days
Square Roots & Surface Area	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. Determine the surface area of composite 3-D objects to solve problems.	*Formative Assessment* Assessment may include: • Open Tasks • Group Problem Solving • Individual Practice • Hands-On Tasks *Summative Assessment* Unit Quizzes/Projects	Approx. 5 days

Powers & Exponent Laws	Demonstrate and understanding of powers with integral bases. Demonstrate an understanding of operations on powers with integral bases.	*Formative Assessment* Assessment may include: • Open Tasks • Group Problem Solving • Individual Practice • Hands-On Tasks *Summative Assessment* Unit Quizzes/Projects	Approx. 5 days
Polynomials	Demonstrate an understanding of polynomials. Model, record, and explain the operations of addition, subtraction, multiplication, and division of polynomial expressions concretely, pictorially, and symbolically.	See above	Approx. 10 days
Linear Relations	Generalize a pattern arising from a problem-solving context using linear equations and verify by substitution. Graph linear relations, analyze graphs, and interpolate or extrapolate to solve problems.	See above	Approx. 10 days
Solving Equations & Inequalities	Model and solve problems using linear equations. Explain and illustrate strategies to solve single variable linear inequalities with rational number coefficients within a problem-solving context.	See above	Approx. 10 days
Measurement & Geometry	Derive and apply formulas for the surface area of 2D and 3D shapes. Draw and interpret scale diagrams of 2-D shapes. Demonstrate understanding of symmetry and movement by transforming shapes on a Cartesian coordinate grid. Solve problems and justify the solution strategy using circle properties.	See above	Approx. 10 days

Probability & Statistics	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. Demonstrate an understanding of the role of probability in society.	*Formative Assessment* Assessment may include: • Mental Math • Quizzes • Conferencing • Group Discussions *Summative Assessment* Unit Tests/Quizzes/Projects	Approx. 10 days

Assessment Guidelines

There are various purposes for assessment:

- Assessment *for* learning **(formative assessment)**: where assessment helps teachers gain insight into what students understand in order to plan and guide instruction, and provide helpful feedback to students.

- Assessment *of* learning **(summative assessment)**: where assessment informs students, teachers and parents, as well as the broader educational community, of achievement at a certain point in time in order to celebrate success, plan interventions and support continued progress.

Academic Achievement

Grades will be calculated on summative assessment information only. The final calculation will be a fair reflection of a student's achievement of the learning outcomes.

Term Work **85%**

- **Assignments, Projects, In-Class Work, Quizzes**

Final Assessment **15%**

- **Final Exam**

Learning Behaviours

Assessment and reporting of learning behaviors will be according to the Brandon School Division Learning Behaviors Rubric.