



CROCUS PLAINS REGIONAL SECONDARY SCHOOL COURSE OUTLINE AND ASSESSMENT GUIDE

Introduction to Applied & Pre-Calculus 20S (MPA20S)

Teacher: Mr. Patel

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Course Description/Objectives:

Grade 10 Introduction to Applied and Pre-calculus Mathematics (20S) is intended for students considering post-secondary studies that require a math pre-requisite. This pathway provides students with the mathematical understanding and critical-thinking skills that have been identified for specific post-secondary programs of study. The topics studied form the foundation for the content to be studied in both Grade 11 Applied Mathematics and Grade 11 Pre-calculus Mathematics.

Text/ Other Resources: Foundations and Pre-Calculus Mathematics 10

Student Learning Skills

The mathematical processes listed below are critical aspects of learning, doing, and understanding mathematics. They are common through the four levels of Mathematics and extend to real world realities.

1. Use communication in order to learn & express understanding
2. Make connections among mathematical ideas, other concepts in mathematics & everyday experiences & disciplines
3. Demonstrate fluency with mental mathematics and estimation
4. Develop and apply new mathematical knowledge through problem-solving
5. Develop mathematical reasoning
6. Select & use technology as a tool for learning and solving problems
7. Develop visualization skills to assist in processing information, making connections & solving problems
8. Take personal responsibility for the mastery of concepts and skills

General Learning Outcomes

1. Develop spatial sense and proportional reasoning.
2. Develop algebraic reasoning and number sense.
3. Develop algebraic and graphical reasoning through the study of relations.

Units of Study:

Unit Title	Learning Outcomes	Assessment Plan	Proposed Time
Factors and Products	• Demonstrate an understanding of factors of whole numbers by determining: 1. prime factors 2. greatest common factor 3. least common multiple 4. square root 5. cube root • Demonstrate an understanding of the multiplication of polynomial expressions (limited to monomials, binomials, and trinomials), concretely, pictorially, and symbolically. • Demonstrate an understanding of common factors and trinomial factoring, concretely, pictorially, and symbolically.	<u>Formative Assessment</u> Assessment may include: - Textbook Assignments - Mental Math - Quizzes - Math Journals - Conferencing - Group Discussions - Observations <u>Summative Assessment</u> May include: - Unit Tests/Quizzes/Projects	~ 12 Classes
Roots and Powers	• Demonstrate an understanding of powers with integral and rational exponents. • Demonstrate an understanding of irrational numbers by representing, identifying, and simplifying irrational numbers ordering irrational numbers.	<u>Formative Assessment</u> Assessment may include: - Textbook Assignments - Mental Math - Quizzes - Math Journals - Conferencing - Group Discussions - Observations <u>Summative Assessment</u> May include: - Unit Tests/Quizzes/Projects	~ 11 Classes

Measurement	- Solve problems that involve linear measurement, using - SI and Imperial units of measure - Estimation strategies - Measurement strategies - Apply proportional reasoning to problems that involve conversions within and between SI and Imperial units of measure - Solve problems, using SI and Imperial units, that involve the surface area and volume of 3-d objects, including - right cones - right cylinders - right prisms - right pyramids - spheres	<u>Formative Assessment</u> Assessment may include: - Textbook Assignments - Mental Math - Quizzes - Math Journals - Conferencing - Group Discussions - Observations <u>Summative Assessment</u> May include: - Unit Tests/Quizzes/Projects	~ 10 Classes
Trigonometry	Develop and apply the primary trigonometric ratios (sine, cosine, tangent) to solve problems that involve right triangles.	<u>Formative Assessment</u> Assessment may include: - Textbook Assignments - Mental Math - Quizzes - Math Journals - Conferencing - Group Discussions - Observations <u>Summative Assessment</u> May include: - Unit Tests/Quizzes/Projects	~ 11 Classes

Relations and Functions	• Interpret and explain the relationships among data, graphs and contexts. • Demonstrate an understanding of relations and functions. • Describe and represent linear relations, using 1. Words 2. ordered pairs 3. tables of values 4. graphs 5. equations • Represent a linear function, using function notation.	<u>Formative Assessment</u> Assessment may include: - Textbook Assignments - Mental Math - Quizzes - Math Journals - Conferencing - Group Discussions - Observations <u>Summative Assessment</u> May include: - Unit Tests/Quizzes/Projects	~ 11 Classes
Linear Functions	Demonstrate an understanding of slope with respect to 1. rise and run 2. line segments and lines 3. rate of change 4. parallel lines 5. perpendicular lines • Determine the characteristics of the graphs of linear relations, including the 1. Intercepts 2. Slope 3. Domain 4. Range • Relate linear relations expressed in 1. slope–intercept form ($y = mx + b$) 2. general form ($Ax + By + C = 0$) 3. slope–point form ($y - y_1 = m(x - x_1)$) to their graphs • Determine the equation of a linear relation, given 1. a graph 2. a point and the slope 3. two points 4. a point and the equation of a parallel or perpendicular line 5. a scatter plot	<u>Formative Assessment</u> Assessment may include: - Textbook Assignments - Mental Math - Quizzes - Math Journals - Conferencing - Group Discussions - Observations <u>Summative Assessment</u> May include: - Unit Tests/Quizzes/Projects	~ 12 Classes

Systems of Linear Equations	• solve problems that involve systems of linear equations in two variables, graphically and algebraically.	<u>Formative Assessment</u> Assessment may include: - Textbook Assignments - Mental Math - Quizzes - Math Journals - Conferencing - Group Discussions - Observations <u>Summative Assessment</u> May include: - Unit Tests/Quizzes/Projects	~ 8 Classes
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(please note that order of units completed will vary and/or be combined). All units will be evaluated with a variety of assignments, checkpoints, tests and/or projects.

Course Evaluation Structure

Several types of evaluation will be used in the course. This will allow students to display their level of learning in a variety of manners and also expand their skill levels in different presentation methods.

- Tests & Major Projects 55%
- Assignments/Checkpoints 25%
- Final Exam 20%

Student Responsibility Guidelines for Assessment and Evaluation (Division Policy)

Students actively engaged in their learning are the essence of the Brandon School Division's mission of educating the whole child.

The assessment, evaluation and reporting of student learning and achievement involves students, teachers, principals, parents, superintendents and the Board of Trustees. It is the responsibility of professional educators to assess, evaluate, and report on each student's degree of engagement and resulting learning outcomes. Such assessment, evaluation and reporting is a continuous and fundamental part of the student's learning process. Students are responsible for:

- their own learning with the expertise, assistance and motivation of their teachers;
- engaging individually and collectively in school/community learning opportunities;
- improving their learning involvement
- playing an active role in assessing their own learning
- providing evidence of their learning within established timelines

The purpose of this document is to identify student responsibilities in assessment and evaluation practices, provide clear guidelines and consequences so students can make informed decisions, and to provide structures that improve the relationship between student learning and assessment.

All assessments and/or evaluations will be assigned a reasonable completion date by the classroom teacher.

When a student demonstrates negligence and/or disregard towards the assessment and/or evaluation due date, the teacher can assign a "0" grade for the incomplete assessment and/or evaluation.

For a "0" grade to remain permanent on the student's record for that unit of study, a teacher's records will demonstrate that he/she had advised the student and the parent/guardian that there was an opportunity to complete the original assessment or an alternate assessment, but that it would have been penalized in accordance to divisional guidelines.

Penalization for late assessments is as follows:

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|------------------|------------------|
| → Grade 9 – 10% | → Grade 11 – 20% |
| → Grade 10 – 15% | → Grade 12 – 25% |

Example: Grade 10 student receives 80% for a late assessment. The penalty for the late assessment would be $(80)(0.15)=12$. The adjusted mark would be $80-12=68\%$.

Once the late assessment is marked, the penalized assessment mark will replace the "0" grade that was originally assigned to the student by the teacher.

If the original or alternate assessment is not submitted by the new completion date or if the student refuses to submit a required assessment, the "0" grade assigned to it will remain on the student's evaluation records. The "0" grade(s) will be calculated into the student's final mark for the unit of study and will be used in the calculation of the final grade of the course.

Classroom Expectations – Mr. Patel

Welcome to my classroom. I am looking forward to working with you this semester.

There are occasional misunderstandings or disagreements, and this page is designed to help to reduce these. There are three main parties involved in your education. The most important participant is **you**. Your parents/guardians form a second group, and in this course I am the third. We all want the same thing: for you to do your best and experience as much success as possible. It is my hope that you will embrace this as our common goal.

It is important for you to know that I have high expectations of my students. I expect them to work hard and to push themselves to improve. I expect them to be polite, well-behaved and respectful. You can expect exactly the same from me. I will work hard with you to help you reach your goals. I will spend extra time with you if you need it. I will push you to do your best. I will treat you as a young adult.

If you are absent for a test, you will be expected to ensure that your parent/guardian call the school to excuse you BEFORE the test begins. If you are absent from a test without a satisfactory explanation you will receive a grade of 0% for the test. If you are absent and have a satisfactory explanation, you will be expected to write the test on the day you return to school. Since tests are based primarily on assignments, ensuring that you always complete your assignments on time will increase your chances for success on the tests.

A grade of 0% will be given to any late assignments or projects as per division policy (Last Page). Due dates can be moved if discussed with the teacher ahead of time. This is not a required course, and is designed to challenge students on a daily basis to prepare them for secondary education.

Regular, punctual attendance is essential, not only to maximize your own opportunities for success, but also to reduce distractions for the other students. I expect you to be in class, ready to learn, **on time**. If you are absent from class, it is **your** responsibility to get the notes and examples from me or from a student who was present and to complete any assignments. I have transferred all the notes and examples to the shared drive so you may access them at any time.

From time to time you may find yourself struggling with one or more of the topics presented in class. If you need extra help with your work, I will be in my room most mornings before school, and noon hours. If you need even more extra help outside of class time, in addition to the morning and noon hours, this help is available and may be obtained by following the procedure outlined below:

- 1.) Make arrangements, in advance, to meet with me.
- 2.) Prepare several **SPECIFIC** questions or examples, often from your assignment(s), that we can work on together.
- 3.) Ensure that you arrive at the arranged time so that you do not deprive other students of the same opportunity.

There are four basic, common-sense expectations (or rules) that I will insist that students follow in my classroom:

- 1.) **Show Up, On Time** - This means attend regularly, and on time.
- 2.) **Be Prepared** - You need to arrive in class with all the necessary materials: pens, pencils, eraser, calculator, paper, graph paper, ruler, protractor, etc. If any special materials are required, you will be given advance notice.
- 3.) **Do Your Work** - Learning requires work. It is essential that all assignments be completed on time. We cannot begin to identify your "trouble-spots" until you have made a sincere effort to complete your assignments.
- 4.) **Actively Show Respect for the Rights, Feelings and Property of Those Around You** - This is the basic Golden Rule that you have been hearing about since you were very young. Now that you are older and more mature, it is even more significant.

Progress reports can be given out, parents and students are encouraged to use PowerSchool to check their marks on a regular basis. If you have any questions about your mark, please see me immediately.

PARENTS:

If at any time you have questions about your son or daughter's progress, please do not hesitate to contact me at school (729-3900) or email (patel.chintankumar@bsd.ca) After reviewing these pages with your child, please sign the portion below, tear it off, and have your daughter or son return it to me tomorrow.

Please feel free to add any comments you feel are appropriate.

Classroom policies and rules:

- Be respectful and responsible at all times.
- Students are expected to attend class each day. They will come prepared to work each class period, and will be required to take notes, perform daily assignments, quizzes, and tests.
- **Rules around Cell Phones**
 - 1) On August 15, 2024, the Government of Manitoba has banned the use of cellular phones in the classroom for grades 9 -12, phones are permitted to be used on breaks and lunch. Phones may be used within a classroom with the permission of the classroom teacher for educational purposes only, supporting students with medical or diverse learning needs.
 - 2) Phones are not permitted for use in Mr. Patel's class as sufficient devices are available to support student learning
- It is the student's responsibility to notify the teacher of future absences and to schedule time to make up tests/assignments.
- Students are not allowed to use calculator on their phones during a test or final exam.

Extra Help/Contact Information

I am available for extra help before school, at lunch and after school. I can be found in **Room#227**

Date: _____

Student Signature: _____

Parent/Guardian Signature: _____

Parent Email: _____