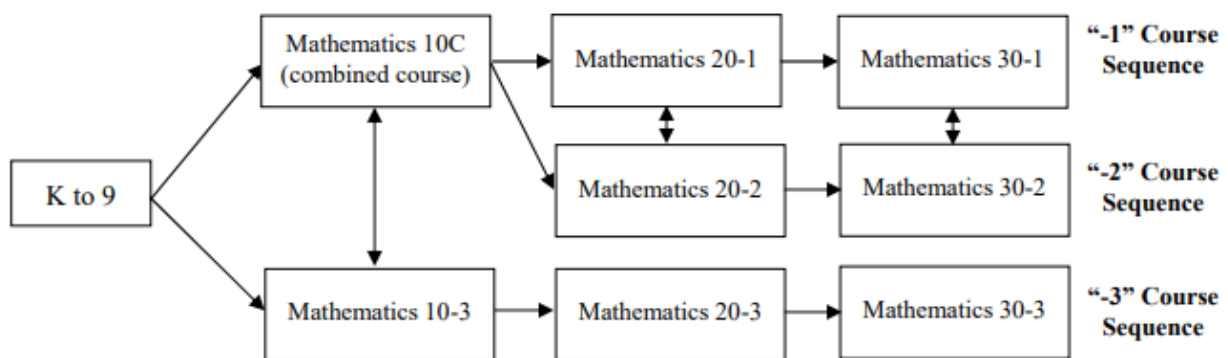


PEACE RIVER SCHOOL DIVISION
 VIRTUAL EDUCATION PROGRAM
"Learning Together - Success for All"

Math 20-2
 Course Outline
 2021-22 Semester 1
 Teacher: **Bill Sheets** sheetsb@prsd.ab.ca
 780-625-6883

I. Course Overview

Course Overview, Scope and Sequence



The Math 20-2 is a **5 credit** course with a curriculum that consists of 6 topics of study:

Measurement: developing spatial sense and proportional reasoning including rates, scale diagrams, and proportional reasoning in 2-D shapes and 3-D objects.

Geometry: developing spatial sense by studying properties of angles and triangles including proofs, and problems involving the cosine law and sine law.

Number and Logic: developing number sense and logical reasoning through the study of conjectures, inductive and deductive reasoning, analyzing puzzles and games, and the study of radical expressions and equations.

Statistics: developing statistical reasoning through the study of normal distributions, standard deviation and z-scores and the interpretation of statistical data using confidence intervals, levels, and margin of error.

Relations and Functions: developing algebraic and graphical reasoning through the study of relations including the characteristics of quadratic functions and solving problems that involve quadratic equations.

Mathematics Research Project: developing an appreciation of the role of mathematics in society through the research and presentation on a historical event or area of interest that involves mathematics.

The Alberta High School Mathematics curriculum has seven mathematical processes embedded within the topics of study. These processes and their descriptions can be found in the front matter of the curriculum <https://education.alberta.ca/media/564028/math10to12.pdf> and include; *Communication, Connections, Mental Mathematics and Estimation, Problem Solving, Reasoning, Technology, and Visualization.*

II. Key Messages/Expectations

Math 20-2 is a grade 11 general stream math course with the prerequisite of a passing grade in Math 10C. It is expected that students will progress to Math 30-2 which provides students with the mathematical understandings and critical-thinking skills identified for post-secondary studies in programs that do not require the study of Calculus. With this in mind, **regular attendance** is an expectation for success. Students who dedicate daily attention to the concepts covered in class as well as the formative practice to achieve proficiency with the application of those concepts will experience success. The focus of student learning will be developing a conceptual and procedural understanding of mathematics.

Digital Citizenship and Personal Electronic Device use

Students will be expected to adhere to the Network usage guidelines and use of personal electronic devices will be restricted to instructional use only during class time, i.e. research and concept exploration, web-based applications (graphing and calculating), and supplementary instruction. Students may be allowed to use personal devices with ear buds during individual work time but will be expected to maintain attention to the teachers directions. Students will not, and should not, be answering texts or phone calls during class time. Parents, please refrain from contacting students during class time. If there is an emergency, contact the school office.

Virtual Education is an exciting opportunity for PRSD students. Regular attendance and productive engagement in course material is an expectation and requirement for success in this course, both during synchronous and asynchronous instruction and learning activities.

Course content is organized into both teacher-directed and student-directed learning activities. Successful students will employ effective time management strategies to complete all activities on time.

Students are expected to demonstrate appropriate online and in-person behaviour in accordance with PRSD Board Policies and Administrative Procedures. By default, teachers will require students to have their cameras on during class time and require students to respond to questions or participate in discussions with their microphone. There will be times when teachers may allow students to turn their cameras off.

III. Scope and Sequence

Assessment

The following is a breakdown of the weighting of the different units and their approximate class time. Within each unit, students will be required to complete formative assessments (which will be weighted as 0 in PowerSchool) as well as summative assessments (quizzes-30%, assignments-20%, and unit exams-50%). The project will be 10% of the course grade and will be graded using rubrics for planning as well as a presentation at the end of the course. Class time will be given throughout the course for project development.

Unit	Approximate # of classes	Unit weighting	Course weighting
Measurement	10	15%	60%
Geometry and Trigonometry	14	22%	
Number and Logic	13	20%	
Statistics	10	15%	
Relations and Functions	17	28%	
Research Project	8		10%
Final Exam and review	4		30%
Totals	76	100%	100%

Unit assessments	Weighting within the unit
Assignments	20%
Quizzes	30%
Unit tests	50%
Totals	100%

IV. Instruction and Assessment

Teaching Methodology

Teaching methods will include concept exploration through some direct instruction, multimedia integration, group exploration of open ended questions and concept-based instruction. Students will be given class time to solidify and demonstrate their formative understanding of concepts through individual work and group discussion prior to summative assessments.

A variety of instructional and formative and summative assessment strategies will be used throughout this course, including through the use of both technology and traditional pencil-and-paper. Summative assessments will be used to determine course grades which can be accessed through PowerSchool.

V. Resources

The recommended resource for the course is **Principles of Mathematics 11**(Nelson) which will be available to students, but general instruction will occur with the secondary resource **Foundations of Mathematics 11** (Absolute Value Publications) provided as a consumable. Students will also be expected to have: a **graphing calculator** for the course (Texas Instrument **Ti-83** or better is recommended but any of the Alberta Education accepted graphing calculators will be acceptable), a straightedge ruler, and pencils for daily completion of examples and classwork. We will also be accessing web-based applications and tools to supplement the course material.

Students require access to reliable high speed internet that supports Google Meets. Students require a compatible device, usually a Chromebook, with a working webcam to access and participate in the course. Students require a working headset that includes a microphone and headphones.

I look forward to building your appreciation and understanding of mathematics throughout the semester. Thank you for choosing classroom based instruction for your learning.

Bill Sheets

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