Course: Foundations of Mathematics and Pre-Calculus 10

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Course Description:

Mathematics 10 Foundations and Pre-Calculus is a course that prepares students to become numerate. This pathway is designed to provide students with the mathematical understandings and critical thinking skills identified for entry into post-secondary programs. A big idea in this course is that representing and analyzing situations allows us to notice and wonder about relationships. Through inquiry into the concepts of relationships and communication this course will assist students to develop the ability to conjecture, reason logically, employ quantitative and spatial information, and apply a variety of mathematical methods to solve problems and make decisions confidently and independently.

Summer Learning Beliefs:

Summer Learning provides an engaging learning environment where all students can challenge themselves academically and fulfill their learning goals. To ensure this, students will:

- abide by the student Code of Conduct
- adhere to the Academic Honesty Policy
- adhere to the Summer Learning Student Engagement policy
- respect themselves and others
- attend every class and be punctual
- inquire, think, and engage to the best of their ability
- access technology in class when instructed to do so and for learning purposes only
- challenge themselves and have fun learning

All Summer Learning policies can be accessed at:
https://www.sd44.ca/school/summer/policies/Pages/default.

Course Syllabus:

Unit	Essential Questions	Content	Curricular Competencies	Assessment Task
Trigonometry	How can we determine the inaccessible	primary trigonometric ratios to find	• Explore, analyze, and apply mathematical	**Formative assessment: group work,**

	heights safety and efficiently?	unknown lengths and angles	ideas using reason, technology, and other tools Develop, demonstrate, and apply mathematical understanding through play, story, inquiry, and problem solving	**individual project** **Summative: Test and/or Clinometer Video Assignment**
Polynomials	How can patterns in numbers lead to algebraic generalizations?	• prime factorization operations on powers with integral exponents	• Estimate reasonably and demonstrate fluent, flexible, and strategic thinking about number • Apply flexible and strategic approaches to solve problems • Represent mathematical ideas in concrete, pictorial, and symbolic forms • Connect mathematical concepts with each other, other areas, and personal interests	Formative Assessment: group work, factoring puzzle, in class pattern investigation. Summative assessment: Test
Linear Relations and Functions	How can we represent, interpret, and analyze to understand linear relations?	• multiplication of polynomial expressions • polynomial factoring	• Visualize to explore and illustrate mathematical concepts and relationships • Represent mathematical ideas in concrete, pictorial, and symbolic forms	**Formative assessment: in-class investigation.** **Summative assessment: Test**

Linear Equations and Graphs	How can we use different forms to represent linear equations	• Functions and relations: connecting data, graphs, and situations • Arithmetic sequences	• Apply flexible and strategic approaches to solve problems • Solve problems with persistence and a positive disposition	Formative: group work investigation Summative: **Desmos Linear Relations and Equations Art Graphing Assignment, Test**
Solving Systems of Linear Equations Graphically and algebraically	How can we Analyze graphs to interpret solutions in context? How can we apply multiple algebraic methods to solve and interpret systems?	• Solving systems of linear equations graphically • solving problems in situational context • connecting ordered pair with meaning of an algebraic solution • solving algebraically by inspection, substitution, and elimination • solving problems in situational contexts	• Solving systems of linear equations graphically • solving problems in situational context • connecting ordered pair with meaning of an algebraic solution • solving algebraically by inspection, substitution, and elimination • solving problems in situational contexts	**Test and event planning assignment**

Finance	Why do so many young Canadian adults go into debt?	• Determining realistic starting salary, net pay, average monthly income • Creating a realistic electronic budget • Analysis explaining deficit, balance or surplus	• organizing and displaying data • to develop a sense of how mathematics helps us understand ourselves and the world around us	**Excel Finance Assignment "Why do so many Young Canadian Adults go into Debt"**

Grade Descriptors:

An "**A**" student is able to:
- Demonstrate and apply the curricular competencies at a sophisticated level
- Analyze information and synthesize correct solutions
- Discern challenging patterns
- Apply the concepts and extrapolate onto contextualized situations
- Superb command of numeracy (no computational error)
- Challenge problems in familiar and unfamiliar situation

A "**B**" student is able to:
- Demonstrates and often applies the curricular competencies
- Analyze information and synthesize the standard solutions
- Identify linear and basic patterns within contexts
- Apply basic concepts and able to understand some details in contextualized situations
- Good command of numeracy
- Challenge problems in familiar and working towards unfamiliar situations

A "**C or C+**" student is able to:
- Demonstrate the curricular competencies
- Organize the information and attempt to interpret the solution
- Identify the patterns within the context
- Build on the concepts and still working on finding the details in contextualized situations
- Solve routine two-step problems

A "**C-**" student is able to:
- Demonstrate the curricular competencies with limitations
- Represent the information in words or as a diagram with some success
- Recall on some elements within the patterns
- Solidify on the fundamental concepts
- Solve simple procedural problems

Resources:

Resources
Microsoft Teams
Mickelson Pre-Calculus/Foundations Math 10 Workbook-Crescent Beach Publishing
OneNote
Students will need a scientific calculator

We would like to thank the Coast Salish people, specifically the Skwxwú7mesh Nation and Tsleil-Waututh Nation, on whose unceded traditional territory the North Vancouver School District resides. We value the opportunity to learn, share and grow on this traditional territory.