StudyForge
DIGITAL CURRICULUM

Foundations of Math 11

Type: Online

Course Description:

Foundations of Math 11 is intended for students continuing on the path to post secondary studies focused in the arts or humanities. Students in this course will examine big ideas in math including mathematical reasoning, problem solving and critical thinking skills. Specifically, students will cover topics such as Angle Relationships, Linear Equations, Quadratic Functions, Statistics and Financial Literacy.

StudyForge Foundations Math 11 is intentionally designed for student success, featuring elements such as:
- Video, Audio and Hands-on instruction through videos and interactives
- Practice questions with detailed solutions for self-assessment
- A student notebook that accompanies the instruction, to enhance engagement with course material
- Summative assessments for each module - randomized to allow retests for mastery
- A customized dashboard to let you know which students are most needing your help
- A variety of Inquiry-based projects
- Solution Files & Answer Keys
- And more.

Foundations Math 11 requires that students have completed the prerequisite course: Foundations of Math and Pre-Calculus 10.

Major Units and Topics:

- 3D Objects & Rate of Change
- Conjectures and Geometry
- Statistics

- Linear and Quadratic Equations
- Inequalities and Optimization
- Financial Literacy

Assessments:

- Video Note Package
- Projects
- Practice Questions

- Assignments
- Chapter Tests

Student Requirements:

- Students will need access to a computer (with internet, speakers, mic and camera), printer, pencil, papers and a scientific calculator.
- A graphing calculator is also permitted and recommended, though not required.
  - (Note that there is a built-in graphing calculator in all practice questions.)

Learning Standards Overview:

Content *Students are expected to know the following:*	Ch 1	Ch 2	Ch 3	Ch 4	Ch 5	Ch 6
Mathematical Reasoning						
Logic, conjecturing, inductive and deductive thinking, proofs, game/puzzle analysis, counter-examples		✔				
Angle Relationships						
Properties, proofs, parallel lines, triangles and other polygons, angle constructions		✔	✔			
Graphical Analysis						

Using technology only				✔		
Linear inequalities						
Graphing of the solution region					✔	
Slope and intercepts	✔			✔		
Intersection points of lines				✔		
Quadratic Functions						
Characteristics of graphs, including end behaviour, maximum/minimum, vertex, symmetry, intercepts				✔		
Systems of Equations						
Including linear with linear, linear with quadratic, and quadratic with quadratic				✔		
Optimization						
Using feasible region to optimize objective function					✔	
Maximizing profit while minimizing cost					✔	
Maximizing area or volume while minimizing perimeter					✔	
Applications						
Posing a question about an observed variation, collecting and interpreting data, and answering the question			✔			
Statistics						

Measures of central tendency, standard deviation, confidence intervals, z-scores, distributions			✔			
Scale Models						
Enlargements and reductions of 2D shapes and 3D objects	✔					
Comparing the properties of similar objects (length, area, volume)	✔					
Square-cube law	✔					
Financial Literacy						
Compound Interest						✔
Introduction to investments/loans with regular payments, using technology						✔
Buy/lease						✔