Subjects and Topics Covered
<table>
<thead>
<tr>
<th>MATHEMATICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Basic Arithmetic</td>
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<tr>
<td>- Basic Geometry</td>
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<tr>
<td>- Basic Algebra</td>
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</tbody>
</table>

### Advanced Arithmetic
- Complex Numbers
- Prime Numbers
- Number Theory
- Irrational Numbers
- Quotient and Remainder

### Advanced Geometry
- Geometric Proofs
- Projection
- Parametric Equations
- Polar Coordinates
- Modeling
- Planes
- Congruence/Similarity
- Conic Sections
- Geometric Transformations
- Vectors (Geometric)

### Calculus
- Rate of Change
- Partial Derivatives
- Limits
- Related Rates
- Differential Equations
- Implicit Differentiation
- Integrals
- Slope of a Tangent Line
- Derivatives
- Continuity
- Optimization
- Fundamental Theorem of Calculus
- Vector (Calculus)
- Series

### Linear Algebra
- Gauss Elimination
- Dot Product/Cross Product
- Vectors (Algebraic)
- Orthogonality
- Matrices
- Eigen Decomposition
- Determinant
- Norm of a Vector
- Vectorial Space

### Functions
- Discrete Functions/Sequences
- Quadratic Functions
- Piecewise Functions
- Rational Functions
- Even/Odd Functions
- Exponential/Logarithmic Functions
- Polynomial Functions
- Function Combination/Composition
# Mathematics

## Equations
- Quadratic Equations
- Polynomial Equations
- System of Linear Equations
- Exponential Equations
- Rational Equations

## Money/Financial Mathematics
- Annuities and Perpetuities
- Profit and Loss
- Compound Interest Loans and Investments
- Reducing Balance Loans

## Scientific Application
- Phase Shift
- Exponential Growth/Decay
- Scientific Notation

## Probability
- Expectation and Variance
- Discrete Random Variable
- Continuous Random Variable
- Pascal’s Triangle
- Conditional Probability
- Two-Way Tables and Venn Diagrams
- Bayes’ Rule
- Counting
- Sets and Events
- Permutations and Combinations

## Statistics
- Data Management
- Time Series
- Data Display
- Hypothesis Testing
- Data Types
- Measures of Variability
- Measures of Central Tendency
- Sampling Estimation
- Line of Best Fit/Regression
- Frequency Distribution

## Trigonometry
- Trigonometric Ratios
- Trigonometric Functions
- Trigonometric Equations
- Unit Circle
- Trigonometry Identities/Proofs
### Biology
- Evolution (Species)
- Animal Biology
- Biochemistry
- Biology Labs
- Cellular Biology
- Ecology
- Genetics
- Human Biology
- Metabolic Processes
- Microbiology
- Molecular Biology
- Plant Biology
- Population Dynamics
- Taxonomy/Classification

### Health Sciences
- Biotechnology
- Kinesiology
- Medical Technologies
- Nutritional Science
- Pathogens/Diseases
- Physiology
- Science/Public Health Issues

### Physics
- Electric Circuits
- Electromagnetism and Electrostatics
- Energy/Work/Power
- Fluid Mechanics
- Forces and Newton’s Laws/Dynamics
- Geometrical Optics
- Gravitation
- Kinematics
- Nuclear Fission and Fusion
- Physics Labs
- Thermodynamics
- Quantum Mechanics/Special Relativity
- Waves/Sound/Light

### English
- English as a Second Language
- Essay Writing
- Literature Studies
- Reading Comprehension
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<thead>
<tr>
<th>CHEMISTRY</th>
<th>HISTORY</th>
<th>GEOGRAPHY</th>
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<tr>
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<td>• Basic Geography</td>
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- Canadian Economy
- Global Interdependence/Inequalities
- Employment
- Finance
- Macroeconomics
- Microeconomics
- Personal Finance Economics
- Principles of Economics

### FRENCH
- French Written Comprehension
- French as a Second Language
- French Literature
- French Essay Writing

### MANDARIN
- Mandarin as a Second Language
- Mandarin Essay Writing

### SPANISH
- Spanish as a Second Language
- Spanish Essay Writing
- Spanish Literature
- Spanish Written Comprehension

### ARABIC
- Arabic as a Second Language
- Arabic Written Comprehension
<table>
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<th>Category</th>
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<tr>
<td><strong>COMPUTER SCIENCE</strong></td>
<td>Algorithms&lt;br&gt;c++ / c / c# / objective c&lt;br&gt;Hardware&lt;br&gt;Java&lt;br&gt;Javascript&lt;br&gt;Operating Systems&lt;br&gt;PHP&lt;br&gt;Programming Basics&lt;br&gt;Python&lt;br&gt;Web Development, HTML/ CSS</td>
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<td><strong>PHYSICAL SCIENCES</strong></td>
<td>Astronomy/Space Exploration&lt;br&gt;Environmental Science&lt;br&gt;Geology/Earth History&lt;br&gt;Oceanography&lt;br&gt;Planetary Science</td>
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  - Philosophy

ACCOUNTING
  - Accounting

MARKETING
  - Marketing

ART HISTORY
  - Art History

MUSIC THEORY
  - Music Theory