



GEORGE S. HENRY ACADEMY COURSE OUTLINE



MPM 2D1

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| COURSE CODE | MPM 2D1 | GRADE | 10 |
| TEACHER(S) | Mr. James | CREDIT VALUE | 1.0 |
| DEPARTMENT | Mathematics | PREREQUISITE | MPM 1D |

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| COURSE DESCRIPTION: | <p>This course enables students to broaden their understanding of relationships and extend their problem-solving and algebraic skills through investigation, the effective use of technology, and abstract reasoning. Students will explore quadratic relations and their applications; solve and apply linear systems; verify properties of geometric figures using analytic geometry; and investigate the trigonometry of right and acute triangles. Students will reason mathematically and communicate their thinking as they solve multi-step problems.</p> <p>Additional information can be found at: http://www.edu.gov.on.ca/eng/curriculum/secondary/subjects.html</p> |
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| COMMUNICATION |
| Please direct all questions or concerns regarding student progress or program of study to Mr. James. Please call the main office to leave a message at 416-395-3240, or dial extension 20080. |

| CONCRETE LEARNING RESOURCES | DIGITAL LEARNING RESOURCES |
|---|---|
| <i>Principles of Mathematics 10</i> , MHR (\$100) | Geometer’s Sketchpad, Google Classroom, DESMOS graphing-addon |
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| GEORGE S. HENRY ACADEMY’S COURSE WORK POLICY |
| <p>For each evaluation, the teacher will inform students of the due date and the ultimate deadline. The ultimate deadline is the last opportunity for students to submit an assignment for evaluation. Teachers may also use a variety of other methods for dealing with late and missed assignments at their discretion.</p> <p>Strategies to assist students in meeting deadlines include:</p> <ul style="list-style-type: none"> • Peer tutoring • Using the school app • Using a personal agenda • Seeking extra help from teachers • Requesting for assistance with time management and organizational skills • Getting help from parents/guardians • Getting help from a caring adult in the school |

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| ASSESSMENT AND EVALUATION OF STUDENT ACHIEVEMENT |
| <p>Each course follows an achievement chart which enables teachers to make judgements about student work that are based on clear performance standards and on a body of evidence collected over time. These include varied types: quizzes, descriptive feedback, labs, assignments, group work, tests, presentations, and examinations.</p> <p>Additional information can be found on the Ministry of Education website noted within the course description.</p> |

ACHIEVEMENT CHART CATEGORIES

Knowledge and Understanding (K & U): Math content acquired in each course (knowledge), and the comprehension of its meaning and significance (understanding)

Thinking (T): The use of critical and creative thinking skills and/or processes

Communication (C): The conveying of meaning through various forms

Application (A): The use of knowledge and skills to make connections within and between various contexts

COURSE WORK (70% of your overall grade)

| Categories | % | Possible Assessments of Learning |
|------------------|-----------|--|
| K & U | 20 | <p>Knowledge of content <i>Ex. facts, terms, procedural skills, use of tools</i></p> <p>Understanding of content <i>Ex. Understanding of mathematical concepts, solve $x^2 = a$</i></p> |
| T | 15 | <p>Use of planning skills <i>Ex. understanding the problem (e.g., formulating and interpreting the problem, making conjectures) – making a plan for solving the problem</i></p> <p>Use of processing skills <i>Ex. carrying out a plan (e.g., collecting data, questioning, testing, revising, modelling, solving, inferring, forming conclusions) – looking back at the solution (e.g., evaluating reasonableness, making convincing arguments, reasoning, justifying, proving, reflecting)</i></p> <p>Use of critical/creative thinking processes <i>Ex. problem solving, inquiry</i></p> |
| C | 15 | <p>Expression and organization of ideas and information <i>Ex. clarity of expression, logical organization, using oral, visual, and written forms (e.g., pictorial, graphic, dynamic, numeric, algebraic forms; concrete materials)</i></p> <p>Communication for different audiences and purposes <i>Ex. Present to peers, teachers; presenting data, justifying a solution, expressing a mathematical argument, in oral, visual, and written forms</i></p> <p>Use of conventions <i>Ex. terms, symbols in oral, visual, and written forms</i></p> |
| A | 20 | <p>Application of knowledge and skills in familiar contexts <i>Ex. Applying mathematical concepts to familiar settings</i></p> <p>Transfer of knowledge and skills to new contexts <i>Ex. Applying mathematical concepts to unfamiliar settings such as word problems</i></p> <p>Making connections within and between various contexts <i>Ex. connections between concepts, representations, and forms within mathematics; connections involving use of prior knowledge and experience; connections between mathematics, other disciplines, and the real world</i></p> |

FINAL EVALUATION (30% of your overall grade)

| Type | Description | % |
|---------------------|-------------------------------|----|
| Culminating Task(s) | | 10 |
| Exam | Written exam during exam week | 20 |

UNITS OF STUDY/COURSE ROAD MAP (subject to change)

Unit 1 – Linear Systems and Geometric Properties

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| 1.11 Solving a linear system by graphing | Week 1 (9 periods) |
| 1.12 Solving a linear system by substitution | |
| 1.13 Equivalent linear systems | |
| 1.14 Solving a linear system by elimination | |
| 1.15 Solving word problems using linear systems | |
| 1.21 Midpoint of a line segment | Week 3 (6 periods) |
| 1.22 Length of a line segment | |
| 1.23 Applying slope, midpoint, and length formulas | |
| 1.24 Equation of a circle | |
| 1.31 Investigate properties of triangles | Week 5 (7 periods) |
| 1.32 Verifying properties of triangles | |
| 1.33 Investigate properties of quadrilaterals | |
| 1.34 Verifying properties of quadrilaterals | |
| 1.35 Properties of circles | |

Unit 2 – Quadratic Relations

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| 2.41 Non-linear relations | Week 7 (10 periods) |
| 2.42 Quadratic relations | |
| 2.43 Transformations | |
| 2.44 Graph in vertex form | |
| 2.45 Graph in factored form | |
| 2.46 Negative and zero exponents | |
| 2.51 Multiplying polynomials | Week 9 (10 periods) |
| 2.52 Special products | |
| 2.53 Common Factors | |
| 2.54 Factoring Quadratic expressions (simple) | |
| 2.55 Factoring Quadratic expressions (complex) | |
| 2.61 Maxima and minima | Week 11 (9 periods) |
| 2.62 Solving quadratic equations | |
| 2.63 Graphing quadratics using intercepts | |
| 2.64 Quadratic formula | |
| 2.65 Solving problems using quadratic equations | |

Unit 3 – Trigonometry

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| 3.71 Properties of similar triangles | Week 13 (9 periods) |
| 3.72 Solving problems using similar triangles | |
| 3.73 The tangent ratio | |
| 3.74 Sine and cosine ratios | |
| 3.75 Solving problems involving right triangles | |
| 3.81 The sine law | Week 15 (5 periods) |
| 3.82 The cosine law | |
| 3.83 Finding angles using the cosine law | |
| 3.84 Solving problems using trigonometry | |

Final Evaluation

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| Culminating Activity | Week 17 |
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Examination

GEORGE S. HENRY ACADEMY'S LATE & MISSED EVALUATION POLICY

It is the responsibility of the student to make arrangements with their teacher for any missed course material and/or assignments. Extenuating circumstances will be considered on a case-by-case basis.

GEORGE S. HENRY ACADEMY'S ACADEMIC DISHONESTY POLICY

Cheating and plagiarism will not be condoned. For more information, refer to the Academic Honesty Policy found in the Student Handbook. The Student Handbook can be found in the George S. Henry Academy app.

SPECIALIST HIGH SKILLS MAJOR (SHSM) REQUIREMENTS

| GRADE 11 AND 12 CREDITS | ENVIRONMENT | HEALTH & WELLNESS | HOSPITALITY & TOURISM |
|---|-------------|-------------------|-----------------------|
| Major Credits | 4 | 4 | 4 |
| English (<i>including a CLA*</i>) | 2 | 1 | 1 |
| Mathematics (<i>including a CLA</i>) | 1 | 1 | 1 |
| Science or Social Sciences and Humanities (<i>including a CLA</i>) (<i>May be substituted with 1 coop credit</i>) | - | 1 | - |
| Business Studies or Science (<i>including a CLA</i>) (<i>May be substituted with 1 coop credit</i>) | | | 1 |
| Cooperative Education | 2 | 2 | 2 |
| TOTAL | 9 | 9 | 9 |

*Contextualized Learning Activity