Ontario	**Ontario Ministry of Education** www.edu.gov.on.ca /eng/	Toronto District School Board	**Toronto District School Board** *www.tdsb.on.ca*		**R.H. KING ACADEMY** http://schools.tdsb.on.ca/ *rhking/*

COURSE OF STUDY OUTLINE			
Department	*Mathematics*	**Course Type**	*Academic*
Curriculum Leader	*B. Leszcz*	**Grade**	*10*
Course Title	*Grade 10 Academic Mathematics*	**Credit Value**	*One*
Course Code	*MPM2D*	**Prerequisites**	*MPM1D*
Ministry Document	*The Ontario Curriculum. http://www.edu.gov.on.ca/eng/curriculum/secondary/math.html*		
Learning Resources	Mathpower 10, Ontario Edition, McGraw Hill, 2000		

Principles of Mathematics, Grade 10, Academic (MPM2D)
R.H. King Academy, TDSB

2017-2018

Curriculum Leader: B. Leszcz

Policy Document: *The Ontario Curriculum Grade 9 and 10 (2005 Revised)*

Prerequisites: Grade 9 Academic (MPM1D)

Value: 1 Credit

Textbook: Mathpower 10, Ontario Edition, McGraw Hill, 2000

Overall Goals: 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

Curriculum: Quadratic Relations of the Form $y = ax^2 + bx + c$

- determine the basic properties of quadratic relations;
- relate transformations of the graph of $y = x^2$ to the algebraic representation $y = a(x - h)^2 + k$;
- solve quadratic equations and interpret the solutions with respect to the corresponding relations;
- solve problems involving quadratic relations.

Analytic Geometry

- model and solve problems involving the intersection of two straight lines;
- solve problems using analytic geometry involving properties of lines and line segments;
- verify geometric properties of triangles and quadrilaterals, using analytic geometry.

Trigonometry

- use their knowledge of ratio and proportion to investigate similar triangles and solve problems related to similarity;
- solve problems involving right triangles, using the primary trigonometric ratios and the Pythagorean theorem;
- solve problems involving acute triangles, using the sine law and the cosine law.

Learning Skills: The learning skills (Responsibility, Organization, Independent Work, Collaboration, Initiative, and Self Regulation) are critical for the achievement of the curriculum expectations and student success. Students are expected to attend every class, complete all homework and insure that assignments are completed and handed in on time.

Strategies: Students will have the opportunity to learn in a variety of ways –individually, cooperatively, independently, with teacher direction, through hands-on experience, and through examples followed by practice. The approaches and strategies used in the classroom to help students meet the expectations of this curriculum will vary according to the objectives of the learning and the needs of the students. It is important for students to take every opportunity to learn the material covered prior to the evaluation.

Evaluation: Seventy per cent of the grade will be based on evaluation conducted throughout the course. Evaluations will be in the form of tests, quizzes, and assignments. Assignments for evaluation may include rich performance tasks, demonstrations (board work), and projects.
This portion of the grade will reflect the student's most consistent level of achievement throughout the course.

Thirty per cent of the grade will be based on a final assessments administered towards the end of the course. The final exam allows the student an opportunity to demonstrate comprehensive achievement of the overall expectations for the course.
Students will be given numerous and varied opportunities to demonstrate the full extent of their achievement of the curriculum expectations (content standards) across all four categories of knowledge and skills.

Teachers will ensure that student learning is assessed and evaluated in a balanced manner with respect to these four categories:

1. **Knowledge and Understanding** Subject specific content acquired in each course, and the comprehension of its meaning and significance.
2. **Thinking** The use of critical and creative thinking skills and/or processes.
3. **Communication** The conveying of meaning through various forms.
4. **Application** The use of knowledge and skills to make connections within and between various contexts.

Term Grades for Provincial Reports Through out the Year:

The midterm mark will be based on the evaluations that have been conducted to that point in the course and will be preliminary and tentative. This mark will be based on the most consistent level of achievement to that point in time, but some of the overall expectations, strands, and units will not have been addressed and the student's grades will most likely change when the student's entire work is evaluated by the end of the course.

Evaluation Plan

Term Work- 70% Final Evaluation (exam) – 30%

- Quizzes, assignments, projects 15%
- Tests 45%
- Independent Study Assignments* 10%

*At RH King one of our unique features is a focus on ISUs, or Independent Study Units. In Grade 10 Mathematics, an ISU is a small assignment that is given to students to complete., 4-5 times through the semester. The assignments are based upon extensions of the content being learned in the classroom at the time the assignment is given. In most cases students are given a week to complete the 1-1.5 hour worksheet. Support is provided during Clinic, after school, or even during class time, at the students' request. The intent is to facilitate learning the responsibility required to complete a task, on time, and learning to seek out help, should it be needed, to be able to complete the task. These skills promote the students' growth towards becoming independent learners.

Course Work – General Time Line

Unit 1: Review Core Grade 9 Skills (handouts)	(2 weeks)
Unit 2: Linear Systems (Chapter 1)	(2 weeks)
Unit 3: Analytic Geometry I (Chapter 2)	(2 weeks)
Geometry of Polygons II (handouts)	(2 weeks)
Unit 4: Polynomials/Algebra (Chapter 3)	(2 weeks)
Unit 5: Quadratics I: vertex form, graphing (Chapter 4)	(2 weeks)
Quadratics II: other forms, graphing, solving (Chapter 5)	(2 weeks)
Unit 6: Trigonometry I: Right Triangles (Chapter 6)	(2 weeks)
Trigonometry II: Non-right triangles (Chapter 6)	(1 week)
Review and Preparation for Evaluations:	(1 week)