



PARKLAND SECONDARY SCHOOL

“Building on Excellence Together”

Course: International Baccalaureate Mathematics Standard Level (IB MATH SL)

Group 5 (Mathematics) aims

The aims of the course are to enable students to:

1. Enjoy mathematics, and develop an appreciation of the elegance and power of mathematics.
 2. Develop an understanding of the principles and nature of mathematics.
 3. Communicate clearly and confidently in a variety of contexts.
 4. Develop logical, critical and creative thinking, and patience and persistence in problem solving.
 5. Employ and refine their powers of abstraction and generalization.
 6. Apply and transfer skills to alternative situations, to other areas of knowledge and to future developments.
 7. Appreciate how developments in technology and mathematics have influenced each other.
 8. Appreciate the moral, social and ethical implications arising from the work of mathematicians and the applications of mathematics.
 9. Appreciate the international dimension in mathematics through an awareness of the universality of mathematics and its multicultural and historical perspectives.
 10. Appreciate the contribution of mathematics to other disciplines, and as a particular “area of knowledge” in the TOK course.
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Group 5 (Mathematics) Assessment objectives

Students will be expected to demonstrate the following.

1. **Knowledge and understanding:** recall, select and use their knowledge of mathematical facts, concepts and techniques in a variety of familiar and unfamiliar contexts.
 2. **Problem-solving:** recall, select and use their knowledge of mathematical skills, results and models in both real and abstract contexts to solve problems.
 3. **Communication and interpretation:** transform common realistic contexts into mathematics; comment on the context; sketch or draw mathematical diagrams, graphs or constructions both on paper.
 4. **Technology:** use technology, accurately, appropriately and efficiently both to explore new ideas and to solve problems.
 5. **Reasoning:** construct mathematical arguments through use of precise statements, logical deduction and inference, and by the manipulation of mathematical expressions.
 6. **Inquiry approaches:** investigate unfamiliar situations, involving organizing and analysing information, making conjectures, drawing conclusions and testing their validity.
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School District No. 63 (Saanich)



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Group 5 (Mathematics) Topics

Syllabus component	Teaching hours
All topics are compulsory. Students must study all the sub-topics in each of the topics in the syllabus as listed in this guide. Students are also required to be familiar with the topics listed as prior learning.	SL
Topic 1 : Algebra	9
Topic 2 : Functions and equations	24
Topic 3 : Circular functions and trigonometry	16
Topic 4 : Vectors	16
Topic 5 : Statistics and probability	35
Topic 6 : Calculus	40
Mathematical exploration Internal assessment in mathematics SL is an individual exploration. This is a piece of written work that involves investigating an area of mathematics.	10
Total teaching hours (two semesters over two years)	150

Evaluation

Assessment Component	Weighting
External Assessment (3 hours) (at end of the 2nd year, in early May)	80%
Paper 1 (1 hour 30 minutes) (90 marks) No calculator allowed. Section A: Short-response questions based on the whole syllabus. Section B: Extended-response questions based on the whole syllabus.	40%
Paper 2 (1 hour 30 minutes) (90 marks) Graphic Display Calculator required Section A: Short-response question based on the whole syllabus. Section B: Extended-response questions based on the whole syllabus.	40%
Internal Assessment This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. Students will undertake a Mathematical Exploration. (20 marks)	20%

Calculator:

A graphic display calculator is required for the class. A TI-84 will be provided. It is recommended that students also bring a regular scientific calculator to class.

Textbooks:

A digital copy of Mathematics for the International Student Mathematics SL (Haese, 3ed.)
A hard copy of Calculus Early Transcendentals (James Stewart, 4ed.)