LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Éducation nationale,
de l'Enfance et de la Jeunesse

Enseignement secondaire	
Classes internationales	
Régime anglophone	
Mathématiques	
Programme	
6IEC	

Leçons hebdomadaires: 4
Langue véhiculaire: anglais
Nombre minimal de devoirs en classe: 7 par année / 2 par trimestre

General comments

Students are expected to be familiar with the mathematical skills required for the admission to year 8 (6IEC). The aim of the course is to prepare for the study of mathematics in year 9 (5IEC).

Numerical and algebraic reasoning

The ability to work with numbers and symbols is an essential skill in mathematics. Students are expected to have an understanding of number concepts and to develop the skills of calculation and approximation. Algebra uses letters and symbols to represent numbers, quantities and operations, and employs variables to solve mathematical problems. Algebra is an abstraction of the concepts first used when dealing with numbers and is essential for further learning in mathematics.

Number	Chapter 1

Review from year 7:
- Natural numbers, integers, index notation, order of operations, square numbers, primes and composites, highest common factor, lowest common multiple
 	
Notes:
- Review and additional exercises to be added by the teacher
- New for year 8:
  ▪ Absolute value
  ▪ Square roots	

Real numbers and ratio	Chapter 3
Review from year 7: - Fractions, operations with fractions, decimal numbers, operations with decimal numbers, rational numbers Notes: - Review and additional exercises to be added by the teacher	

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- New for year 8:
  - Irrational numbers
  - Ratio

Algebraic operations	Chapter 4

- Algebraic notation
- The language of mathematics
- Collecting like terms
- Generalising arithmetic
- Algebraic substitution
- Algebraic products
- Algebraic fractions

Notes:
- Additional exercises to be added by teacher (mixing algebraic products and sums)

Percentage	Chapter 5

- Percentage
- Expressing one quantity as a percentage of another
- Finding a percentage of a quantity
- The unitary method in percentage
- Percentage increase and decrease
- Finding the original amount
- Simple interest

Laws of algebra	Chapter 7

- Index laws
- Expansion laws
- The zero index law
- The negative index law
- The distributive law
- The product $(a+b)(c+d)$ (FOIL rule)
- Perfect square expansion
- Difference of two squares

Notes:
- To be added: Chapters 19A and 19B (Algebraic factorisation)
- The different factorisation methods to be learned are:
  - Factoring out a single factor (number, constant, both)
  - Factoring out a negative factor
  - Factoring out including change of order (not in book, to be added by teacher)
  - Factoring out a common bracket

Equations	Chapter 8

- Solutions of an equation
- Linear equations
- Maintaining balance
- Inverse operations
- Algebraic flowcharts

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- Solving equations
- Equations with a repeated unknown

Notes:
- Additional equations with fractions and brackets to be added by the teacher
- Solution set notation

Algebra: Patterns and formulae	Chapter 12
- Geometric patterns - Number crunching machines - Substituting into formulae - Using patterns - Practical problems - Number sequences	

Spatial reasoning

Spatial reasoning skills provide students with the tools for analysing, measuring and transforming geometric quantities in two dimensions.

The topics and skills in spatial reasoning will help students develop an understanding of

- construction and manual skills,
- visualization of 2D and 3D shapes

The geometry of polygons	Chapter 9

Review from year 7:
- review of geometrical facts, triangles, quadrilaterals
 	
Notes:
- New for year 8:
  ▪ Converse of a theorem (in section C – Isosceles triangles)
  ▪ Sum of the angles of an n-sided polygon	

Length and area	Chapter 11
Review from year 7: - Length, perimeter, circumference, area, area formulae, areas of circles, areas of composite figures **Notes:** - New for year 8: ▪ Areas of ellipses - Additional problems which need to be solved via equations to be added by the teacher	

Further measurement	Chapter 13
- Surface area - Volume - Capacity	

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Textbook

Haese and Harris Publications

Mathematics for the international student 8 (MYP 3) - Second edition

ISBN 978-1-921972-47-8

Planning the curriculum

Here's a possible order to sequence the individual chapters.

1. MYP 3 – Chapter 1 – Number
2. MYP 3 – Chapter 2 – Sets and Venn diagrams
3. MYP 3 – Chapter 3 – Real numbers and ratio
4. MYP 3 – Chapter 5 – Percentage
5. MYP 3 – Chapter 7, 19A, 19B – Laws of Algebra
6. MYP 3 – Chapter 8 – Equations
7. MYP 3 – Chapter 9 – The geometry of polygons
8. MYP 3 – Chapter 11 – Length and Area
9. MYP 3 – Chapter 12 – Algebra: Patterns and formulae
10. MYP 3 – Chapter 13 – Further measurement

Calculator

Casio FX-991 EX

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