

UNIT 1

NUMBER AND ALGEBRA 1, (SYLLABUS REF: 1.2 – 1.3, 1.5 – 1.6)

Aim:

Know how to communicate basic mathematical concepts in their correct mathematical terminology and notation. Procedures of essential algebra to be able to solve problems in further mathematics.

Objective:

STANDARD FORM

- Understand the notation of standard form as " $a \times 10^k$ ", where $1 \leq a \leq 10$ and $k \in \mathbb{Z}$ ".
- Understand when standard form is used.
- The procedure of rewriting numbers in standard form into ordinary numbers, and vice versa, both when the exponent is positive and negative.
- The procedure of operations with numbers in standard form.
- Standard form and GDC; the calculator's displayed answer versus student answer.

Chapter 2, 2C

ROUNDING

- Understand the concept of decimal places.
- Understand the concept of significant figures.
- Understand how to round to an appropriate number of decimal places in different situations, for instance currency approximations.
- Understand the number of significant figures as an accuracy of measurement.
- The procedure of rounding to stated significant figures.
- The procedure of rounding to appropriate number of decimal places.
- The procedure of estimation and approximation.

Chapter 2, 2E

PERCENTAGE ERROR

□ Understand how to calculate error and then percentage error to compare estimations.

Chapter 2, 2H

CURRENCY CONVERSIONS

- The procedures of convert different currencies.
- Understand the concept of commission.
- Calculate different ways of commission, like bank's sell/ buy rates and percentage rate.
- Interpret tables of currency exchange rates.

Chapter 2, 2I

BASIC ALGEBRA

Improve basic algebraically procedures, to make them fluently, to be used in further mathematics (presumed knowledge).

Revision of:

- Exponent rules, □ expanding brackets, □ linear equations, □ formula substitution,
- formula rearrangement, □ linear simultaneous equations in two variables, by use of GDC, including problem solving, □ how to solve different types of quadratic equations, with and without calculator, including problem solving.

Chapter 3, 3A, B, C, D, E

Chapter 4, 4A, B, C, D, G, H, J

TOK links

Appreciation of the differences of scale in number, and of the way numbers are used that are well beyond our everyday experience.

Imaginary and real solutions to a quadratic equation.

Equations with "solutions", or without, or with infinitely many solutions.

Can you calculate volumes of any shapes?

ATL

Discuss in groups the presumed knowledge, ask questions in groups.

Kahoot!

True or false questions.

Quizz.

Investigation of percentage errors of estimations.

Introduction videos.

Assessment

Formative: Quiz, work on examination questions.

Summative: Included in end of term test.