WAGIN DISTRICT HIGH SCHOOL
SEMESTER 1, 2024 OUTLINE
Year 10 - MATHEMATICS

COURSE OUTLINE

Students will start first semester by exploring compound interest, before revising the index laws and applying them to algebraic expressions. They will then turn their attention to geometry for the remainder of the term, investigating surface area and volume of a range of prisms, cylinders and composite shapes. In Term 2 students will look at linear relationships, exploring equations, graphs and parallel and perpendicular lines. To finish off the semester, students will turn their attention to probability by investigating two and three-step chance experiments, both with and without replacement.

COURSE OUTCOMES

The following concepts form the Western Australian Curriculum will be addressed:

Number and Algebra

Money and financial mathematics

- Connect the compound interest formula to repeated applications of simple interest using appropriate digital technologies (ACMNA229)

Patterns and algebra

- Simplify algebraic products and quotients using index laws (ACMNA231)

Linear and non-linear relationships

- Solve problems involving linear equations, including those derived from formulas (ACMNA235)
- Solve linear inequalities and graph their solutions on a number line (ACMNA236)
- Solve linear simultaneous equations, using algebraic and graphical techniques including using digital technology (ACMNA237)
- Solve problems involving parallel and perpendicular lines (ACMNA238)
- Solve linear equations involving simple algebraic fractions (ACMNA240)

Measurement and Geometry

Using units of measurement

- Solve problems involving surface area and volume for a range of prisms, cylinders and composite solids (ACMMG242)

Statistics and Probability

Chance

- Describe the results of two and three step chance experiments, both with and without replacements, assign probabilities to outcomes and determine probabilities of events. Investigate the concept of independence (ACMSP246)
- Use the language of ‘if.... then”, ‘given’, ‘of’, ‘knowing that’ to investigate conditional statements and identify common mistakes in interpreting such language (ACMSP247)

TASKS & ASSESSMENT

Students will generally undertake work in blocks of 5 weeks. During this time, they will be expected to complete a number of short quizzes, and an end of unit test. Students may also be required to complete assignments and/or investigations to help develop their understanding of the concepts covered. *While the key content will be taught at school, it is essential that students complete homework on a regular basis to help practice new skills and solidify their understanding.*
All work samples will then be used to determine the ability and grade of each student.

TIME LINE

	WEEK	KEY CONCEPTS	ASSESSMENTS
Term 1	**1 – 5**	*Number & Algebra* • Percentages & money • Percentage increase & decrease • Profits & discounts • Simple interest • Compound interest • Index notation • Index laws • Index laws & algebra	Quiz (5%) End of Unit Test (15%)
	6 – 9	*Measurement & Geometry* • Length & perimeter • Pythagoras' Theorem • Area • Composite shapes • Surface area of prisms & cylinders • Surface area of pyramids and cones • Volume of prisms & cylinders • Volume of pyramids and cones	Quiz (5%) Maths Investigation (10%) End of Unit Test (15%)
Term 2	**1 – 5**	*Number & Algebra* • Linear equations • Graphing straight lines • Rules for linear graphs • Length & midpoint of a line • Perpendicular & parallel lines • Simultaneous equations	Quiz (5%) End of Unit Test (15%)
	6 – 10	*Statistics & Probability* • Probability • 2-way tables & Venn diagrams • Tree diagrams • Conditional probability • Experimental probability • Relative frequency • Multiple events using tables	Quiz (5%) Maths Investigation (15%) End of Unit Test

Timeline and assessment items may be subject to change.