Highfields State Secondary College

Semester 1 Course Overview

Faculty: Science

Subject: Science

Year level: 8

Course Outline

The Australian Curriculum: Science has three interrelated strands: Science Understanding, Science as a Human Endeavour and Science Inquiry Skills.

Together, the three strands of the science curriculum provide students with understanding, knowledge and skills through which they can develop a scientific view of the world. Students are challenged to explore science, its concepts, nature and uses through clearly described inquiry processes.

Term 1	Term 2
Biology and Geography	**Chemistry and Physics**
Students analyse the relationships between structure and function of organs in the major systems of the human body, including the digestive and system. They examine and compare organs and systems in other animals. Students research the structure of a system and its component organs and describe how the structure supports the functions of the system within the body. Students will explore different types of rocks and the minerals of which they are composed. They compare the different processes and timescales involved in their formation as part of the rock cycle. Students construct and interpret models and representations to aid in the analyses of patterns and relationships in data. They will investigate properties of rocks and analyse data to identify patterns and relationships. Students will identify rock specimens and model processes of rock formation. Students learn how useful materials are sourced from minerals and rocks found in the Earth's crust. They consider the science knowledge and occupations involved in locating, extracting and processing mined minerals as well as the rehabilitation of mining sites. Students summarise information from secondary sources to draw conclusions about the mining process of a particular mineral.	In this unit students will classify energy forms. They will investigate different forms of potential energy, making predictions, conducting fair tests and ensuring safety guidelines are followed. Students will process and analyse experimental data and evaluate experimental methods used in investigations. They will use models and representations to examine kinetic energy and its relationship with potential energy and heat energy. Students will communicate how energy is transferred and transformed through systems and use diagrams to represent energy flow. They will recognise that energy can be transformed into usable and unusable forms, and consider how this can affect the efficiency of a system. Students will discuss the use and influence of science on the use of energy resources and consider how the efficiency of the production of energy could influence the use of these resources by society. Students will classify energy forms by exploring changes in matter at a particle level, and distinguish between chemical and physical change. They will consider how the idea of elements has developed over time as knowledge of the nature of matter has improved.
Assessment	
Task 1 – Exam - Students will complete a supervised assessment under timed conditions. Science exams allow students to demonstrate understanding and knowledge of key concepts.	**Task 2 – Student Experiment** - Students will conduct an investigation and modify methodology to collect and analyse primary data. **Task 3 – Data Test -** Students will complete a supervised assessment under timed conditions. Data tests allow students to demonstrate understanding and knowledge of Science Inquiry Skills

Literacy requirements:

This unit provides opportunities for students to engage in the Australian Curriculum Content and build upon the literacy skills of:

- using technical and specific terms for concepts and features of the world,
- presenting scientific information in the form of diagrams, flow charts, tables and graphs,

- comprehending and composing texts, including those that provide information, describe events and phenomena, recount experiments, present and evaluate data, give explanations and present opinions or claims.

Numeracy requirements:

This unit provides opportunities for students to engage in the Australian Curriculum Content and build upon the numeracy skills of:

- collecting, representing and interpreting data from investigations.
- Use of formal units to provide accurate results in measuring and testing across a range of science topics.