

| Year Level Plan | | Year 8 | | | Science | | | | |
|------------------|--|--|--|---|---------|--|--|--|--|
| | | Term 1 | | Term 2 | | Term 3 | | Term 4 | |
| | | Unit 1 | Unit 2 | Unit 3 | | Unit 4 | | Unit 5 | |
| | | <p>Unit 1: Basic Laboratory Techniques and Procedures</p> <p>At the beginning of the unit students will learn about designing and performing experiments in a laboratory to investigate the effects of variables on cooling rates of water. They will write scientific reports using standard report format to document what they have done and discovered.</p> <p>By the end of the unit students will be able to identify and construct questions and problems that they can investigate scientifically. They will consider safety and ethics when planning investigations, and identify variables to be changed, measured and controlled. Students will construct representations of their data to reveal and analyse patterns and trends, and use these when justifying their conclusions. They will explain how modifications to methods could improve the quality of their data, and use appropriate language and representations to communicate science ideas, methods and findings.</p> | <p>Unit 2: Chemistry</p> <p>At the beginning of the unit students will learn about matter (solids, liquids and gases) at a particle level by engaging in investigations related to the different states of matter. They will learn about the indicators of chemical reactions and be able to distinguish between chemical and physical changes. Students will investigate simple chemical reactions using common substances and explore applications of chemical reactions.</p> <p>By the end of the unit students will be able to identify elements, compounds, mixtures, physical and chemical changes. They will identify changes in the states of matter and explain the changes with reference to particle theory.</p> | <p>Unit 3: Geology</p> <p>At the beginning of the unit students will learn about a range of common rock types. They will classify rocks by using properties they can observe such as colour, lustre, structure and hardness. Students will describe the difference between igneous, sedimentary and metamorphic rock, explain their formation and construct a diagram of the rock cycle. They will also learn about weathering processes, erosion and sedimentation.</p> <p>By the end of the unit students will be able to recognise that rocks are a collection of different minerals, and describe the role that prominent Australian rock features play in society and their cultural significance. Finally, students will evaluate the management of a rock feature as an environmental resource for Australia.</p> | | <p>Unit 4: Energy</p> <p>At the beginning of the unit students will learn about the different forms of energy and the fact that energy causes change. They will explore and classify different forms of energy, and study different energy transfers, transformations, and the efficiency of these processes. They will also discuss how energy efficient design can reduce energy consumption.</p> <p>By the end of the unit students will be able to build their own water rocket and design and perform experiments to investigate the effects of variables on the flight of their rocket. They will write a scientific report on their findings using standard report format.</p> | | <p>Unit 5: Cells and Reproduction</p> <p>At the beginning of the unit students will learn about a range of different cell types and the parts within these cells. They will develop skills for effective use of a microscope and for the preparation of microscope slides. These skills will allow students to view images of a range of cells on microscope slides they prepare themselves and pre-prepared slides. Students will recognise that cells organise into tissue, tissues compose organs, and organs form systems.</p> <p>By the end of the unit students will be able to describe the structure and function of the reproductive system and respiratory system of humans and other multi-cellular organisms. They will identify and describe the structure of the organs and their functions, compare these systems in different organisms, contrast sexual and asexual reproduction, discuss how different reproductive strategies contribute to the survival of multi-cellular organisms and analyse data and trends in reproductive cycles.</p> | |
| Assessment Tasks | | | | | | | | | |
| | | Unit 1 | Unit 2 | Unit 3 | | Unit 4 | | Unit 5 | |
| | | <p>Student Experiment- Analysis of Cooling Rate</p> <p>Students identify and construct questions and problems that they can investigate scientifically. They consider safety and ethics when planning investigations, including designing field or experimental methods. They identify variables to be changed, measured and controlled. Students construct representations of their data to reveal and analyse patterns and trends, and use these when justifying their conclusions. They explain how modifications to methods could improve the quality of their data and apply their own scientific knowledge and investigation findings to evaluate claims made by others. They use appropriate language and representations to communicate science ideas, methods and findings in a range of text types</p> <p>Examination- Laboratory Safety Skills</p> <p>Students consider safety and ethics when planning investigations, including designing experimental methods. They identify variables to be changed, measured and controlled. Students construct representations of their data to reveal and analyse patterns and trends, and use these when justifying their conclusions. They explain how modifications to methods could improve the quality of their data.</p> | <p>Examination- Chemistry</p> <p>Students compare physical and chemical changes and use the particle model to explain and predict the properties and behaviours of substances. They design experimental methods, and identify variables to be changed, measured and controlled. Students reveal and analyse patterns and trends, and use these when justifying their conclusions. They apply their own scientific knowledge and investigation findings to evaluate claims made by others.</p> | <p>Research Assignment- Australia Rocks</p> <p>Students compare processes of rock formation, including the time scales involved. They explain how evidence has led to an improved understanding of a scientific idea and describe situations in which scientists collaborated to generate solutions to contemporary problems. Students apply their own scientific knowledge and investigation findings to evaluate claims made by others. They use appropriate language and representations to communicate science ideas, methods and findings in a range of text types.</p> | | <p>Student Experiment- Water Rockets</p> <p>Students identify and construct questions and problems that they can investigate scientifically. They consider safety and ethics when planning investigations, including designing field or experimental methods. Students identify variables to be changed, measured and controlled. They construct representations of their data to reveal and analyse patterns and trends, and use these when justifying their conclusions. Students explain how modifications to methods could improve the quality of their data. They use appropriate language and representations to communicate science ideas, methods and findings in a range of text types.</p> <p>Examination- Energy</p> <p>Students identify different forms of energy and describe how energy transfers and transformations cause change in simple systems. They construct representations of their data to reveal and analyse patterns and trends, and use these when justifying their conclusions. Students apply their own scientific knowledge and investigation findings to evaluate claims made by others. They use appropriate language and representations to communicate science ideas, methods and findings in a range of text types.</p> | | <p>Examination - Biology</p> <p>Students analyse the relationship between structure and function at cell, organ and body system levels. They identify and construct questions and problems that they can investigate scientifically. Students analyse patterns and trends, and use these when justifying their conclusions. They use appropriate language and representations to communicate science ideas, methods and findings in a range of text types.</p> | |