Year 6 Science

Achievement Standard

By the end of Year 6 students explain how changes in physical conditions affect living things. They model the relationship between the sun and planets of the solar system and explain how the relative positions of Earth and the sun relate to observed phenomena on Earth. They identify the role of circuit components in the transfer and transformation of electrical energy. They classify and compare reversible and irreversible changes to substances. They explain why science is often collaborative and describe different individuals' contributions to scientific knowledge. They describe how individuals and communities use scientific knowledge.

Students plan safe, repeatable investigations to identify patterns and test relationships and make reasoned predictions. They describe risks associated with investigations and key intercultural considerations when planning field work. They identify variables to be changed, measured and controlled. They use equipment to generate and record data with appropriate precision. They construct representations to organise and process data and information and describe patterns, trends and relationships. They identify possible sources of error in their own and others' methods and findings, pose questions for further investigation and select evidence to support reasoned conclusions. They select and use language features effectively for their purpose and audience when communicating their ideas and findings.

Assessment Criteria

An overall level of achievement in this subject is determined by the teacher's on-balance judgment of the evidence presented in students' summative assessment across the following:

- **Science Understanding:** Biological Sciences, Chemical Sciences, Earth and Space Sciences, Physical Sciences.
- **Science as a human endeavour** - Nature and development of science, Use and influence of science.
- **Science Inquiry Skills:** Questioning and predicting, Planning and conducting, Processing, modelling and analysing, Evaluating, Communicating.

Delivery (mode, time requirements, lessons)

Students have access to scheduled lessons each week. Lessons are delivered via the Learning Management System. Students are also expected to undertake independent study to complete tasks and assessment in accordance with the Work Rate Calendar. Course materials can be accessed in QLearn.

Student Requirements

Computer, internet access, email, printer, scanner, headset with microphone, stationery, resource list and SRS list.

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Units and Learning Experiences, Summative Assessment, Criteria Assessed, Approximate timing/due date of summative assessment		
Semester 1	**Unit 1**	**Earth and Space Sciences: When Planet Earth Moves** In this unit, students engage in an exploration of Earth's movement in relation to the Sun, investigating how its rotation, tilt and revolution drive cyclic observable phenomena. Students will model how Earth's rotation on its axis creates the cycle of day and night, and examine how its tilt leads to variations in sunlight across different regions, including phenomena like extended daylight or darkness at the poles. Students explore the vital role of gravity in maintaining the planets' orbits. Students research the astronomical knowledge of First Nations Peoples of Australia and their use of the night sky for timekeeping. The unit culminates with the examination of how global collaboration among scientists and astronomers has advanced our understanding of space, including work undertaken at the International Space Station.
		Summative assessment, criteria assessed, approximate timing/due date: • Model the relationship between the sun and planets of the solar system • Explain how the relative positions of Earth and the Sun relate to observed phenomena on Earth • Explain why science is often collaborative and describe different individual's contributions to scientific knowledge
	Unit 2	**Physical Sciences: It's Electrifying** In this unit, students examine the various forms of energy and how it can be transferred and transformed, as well as how electricity is generated, transferred and used in everyday life. They develop intercultural understanding by reflecting on the role of electricity in their own lives compared to its role in the lives of people in another country. Students consider how electricity has transformed household life and the importance of using it safely. Through hands-on activities, students investigate electrical circuits and conduct an experiment to test a hypothesis, building their practical science skills.
		Summative assessment, criteria assessed, approximate timing/due date: • Identify the role of circuit components in the transfer and transformation of electrical energy
Semester 2	**Unit 3**	**Biological Sciences: Life on Earth** In this unit, students will investigate how physical conditions of the environment affect the survival of living things. Investigating organisms that live in extreme environments, students will learn that changes in physical conditions will affect the behaviour and survival of living things, including animals that migrate or hibernate, and mould growth. Students will investigate how changing the physical conditions for plants impacts on their growth and survival, and understand that First Nations Peoples' knowledge of the physical conditions necessary for the survival of living things helps them protect the natural environment.
		Summative assessment, criteria assessed, approximate timing/due date: • Develop an investigable question, plan and conduct an investigation, analyse data to identify environmental factors that contribute to mould growth in bread and apply this knowledge to practical situations (Biological sciences, Questioning and predicting, Planning and conducting, Processing and analysing data and information, Communicating)
	Unit 4	**Chemical Sciences: Change It Up** In this science unit, students will explore reversible and irreversible changes to matter by using common, everyday substances and considering everyday observations. They will examine reversible changes of state and irreversible chemical changes with practical investigations and experiments. They will create mixtures and explore how to separate them. Finally, students will consider the significant environmental challenge of separating a mixture such as e-waste into valuable components for re-use. Students will employ the scientific skills of predicting, observing and explaining observations. They will apply knowledge to new contexts and develop basic laboratory skills. Students will also design and conduct an experiment by controlling variables, recording results, forming conclusions and evaluating methods.
		Summative assessment, criteria assessed, approximate timing/due date: • Classify and compare reversible and irreversible changes to substances

Disclaimer All of the above information is accurate at the time of development.