Year 7 Science

Achievement

By the end of Year 7 students explain how biological diversity is ordered and organised. They represent flows of matter and energy in ecosystems and predict the effects of environmental changes. They model cycles in the Earth-sun-moon system and explain the effects of these cycles on Earth phenomena. They represent and explain the effects of forces acting on objects. They use particle theory to explain the physical properties of substances and develop processes that separate mixtures. Students identify the factors that can influence development of and lead to changes in scientific knowledge. They explain how scientific responses are developed and can impact society. They explain the role of science communication in shaping viewpoints, policies and regulations.

Students plan and conduct safe, reproducible investigations to test relationships and aspects of scientific models. They identify potential ethical issues and intercultural considerations required for field locations or use of secondary data. They use equipment to generate and record data with precision. They select and construct appropriate representations to organise data and information. They process data and information and analyse it to describe patterns, trends and relationships. They identify possible sources of error in methods and identify unanswered questions in conclusions and claims. They identify evidence to support their conclusions and construct arguments to support or dispute claims. They select and use language and text features appropriately 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 a scheduled lesson each week. Lessons are delivered via Collaborate and teleconferencing. 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 Blackboard.

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	Term 1	**Unit 1 Chemistry: Water: Waste not, wqnt not** Students consider the importance of water and the water cycle. They distinguish between mixtures, including solutions, and pure substances. Students compare a range of separation techniques and assess which techniques can be used for specific purposes.
		Summative assessment, criteria assessed, approximate timing/due date: • Assignment/Investigation: Students will describe techniques to separate substances from a mixture.They will plan experimental methods, select equipment that improves accuracy, summarise data, and refer to their data when suggesting improvements Week 5
	Term 2	**Unit 2 Physics: Forces** Students develop understandings of balanced and unbalanced forces and apply these to predict and justify conclusions about changes in motion. They explore the effects of gravitational force on motion and consider the difference between mass and weight. They analyse forces involved in simple machines to understand mechanical advantage.
		Summative assessment, criteria assessed, approximate timing/due date: • Assigment/investigation: Students plan, construct a simple balloon vehicle and investigate how forces acting on a racer affects is motion, and use evidence to draw conclusions (summarising investigation, sugesst improvements and considers inaccuracies) Week 7
Semester 2	Term 3	**Unit 3 Unit 4 Biology: classification of organisms** Students will classify organisms based on their physical characteristics. They apply scientific conventions to construct and use dichotomous keys to assist and describe classification. Students analyse the effectiveness of dichotomous keys and suggest improvements. They will explore feeding relationships of ecosystems and how they can be represented as food-chains and food-webs.
		Summative assessment, criteria assessed, approximate timing/due date: Exam: **Classifying creatures** (short answer response) PA**RT A** Students will classify and organise using a dichotomous key (written). • They will use evidence to construct a dichotomous key (either branched or written) using scientific conventions Week 3 **Classifying creatures** (short answer response) **PART B** Students will identify the role of organisms within a community, construct food-webs and predict the effect of environmental changes. Week 6
	Term 4	**Unit 4 Earth and space sciences: Understanding Earth, moon and sun systems** Students will understand the relative positions of Earth, the moon and the sun in space. They will describe the rotations and orbits of Earth and the moon relative to the sun. Students will understand that science knowledge changes with new evidence and they will identify how the positions of Earth, the moon and the sun cause different predictable phenomena such as eclipses, tides, phases of the moon and solar phenomena.
		Summative assessment, criteria assessed, approximate timing/due date: **Understanding the Earth, the Moon and Sun systems** (short answer responses) • Students explain phenomena experienced on Earth due to the relative positions of the Earth, moon and sun using scientific language and appropriate representations.Week 6

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