

Year 7 Science

Achievement

By the end of Year 7, students describe techniques to separate pure substances from mixtures. They represent and predict the effects of unbalanced forces, including Earth's gravity, on motion. They explain how the relative positions of the Earth, sun and moon affect phenomena on Earth. They analyse how the sustainable use of resources depends on the way they are formed and cycle through Earth systems. They predict the effect of environmental changes on feeding relationships and classify and organise diverse organisms based on observable differences. Students describe situations where scientific knowledge from different science disciplines has been used to solve a real-world problem. They explain how the solution was viewed by, and impacted on, different groups in society.

Students identify questions that can be investigated scientifically. They plan fair experimental methods, identifying variables to be changed and measured. They select equipment that improves fairness and accuracy and describe how they considered safety. Students draw on evidence to support their conclusions. They summarise data from different sources, describe trends and refer to the quality of their data when suggesting improvements to their methods. They communicate their ideas, methods and findings using scientific language and appropriate representations.

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 and analysing data and information, Evaluating, Communicating

Delivery (mode, time requirements, lessons)

Students have access to a 45 minute scheduled lesson and a 45 minute tutorial 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, access to internet, email, printer, scanner, telephone or headset with microphone, exercise book, stationery and the science kit.

Year 7 Science (Semester 1)

		Units and Learning Experiences, Summative Assessment, Criteria Assessed, Approximate timing/due date of summative assessment
Semester 1	Term 1	<p>Unit 1 Chemistry: Water - Waste Not, Want Not Water and the water cycle. Pure substances, mixtures and separation techniques. Everyday applications of the separation techniques.</p>
		<p>Unit 2 Chemistry and Earth and space sciences: Water- Waste Not Want Not (Continued) Students will identify ways in which water quality is affected by human activities and describe the stages of the water treatment process. They will relate water treatment processes to separation techniques and analyse actions that can be taken to reduce water usage.</p>
		<p>Summative assessment, criteria assessed, approximate timing/due date:</p> <ul style="list-style-type: none"> • Investigation - Separating a Mixture (Chemical sciences, Questioning and predicting, Planning and conducting, Processing and analysing data and information, Evaluating, Communicating) Week 5 • Research Assignment - Water Issue (Earth and space sciences, Nature and development of science, Use and influence of science, Communicating) Week 10
	Term 2	<p>Unit 3 Physical sciences: Moving right along — exploring motion This unit explores the motion of objects through forces and how to represent these forces as a diagram. Students will understand how gravity acts on objects on Earth and the relationship between mass, weight and gravitational force. They will understand the concept of air resistance as an opposing force and examine the differences between air resistance and drag in vehicle design. Students will be given the opportunity to plan investigations and make predictions to explain the motion of objects due to forces.</p>
		<p>Unit 4 Physical sciences: Moving right along — applications in real systems Expanding on what they learned in Unit 3, students construct and test a balloon powered vehicle and investigate forces. They also investigate levers and pulley systems and how they affect forces within more complex systems.</p>
<p>Summative assessment, criteria assessed, approximate timing/due date:</p> <ul style="list-style-type: none"> • Assignment/Project Scientific Report - Balloon Powered Vehicle (Physical sciences, Questioning and predicting, planning and conducting, Processing and analysing data and information, Evaluating, Communicating) Week 9 		

Year 7 Science (Semester 2)

		Units and Learning Experiences, Summative Assessment, Criteria Assessed, Approximate timing/due date of summative assessment
Semester 2	Term 3	<p>Unit 5 Earth and space science: Heavenly bodies Students will look at the interrelationships between the sun, Earth and moon system. They will explore predictable phenomena such as eclipses, tides, phases of the moon and solar phenomena.</p>
		<p>Unit 6 Earth and space science: Sensational seasons Building on concepts studied in unit 5, students will examine the relationship between the tilt of the Earth and the seasons. They will identify trends and communicate the effect of the seasons on farming and agricultural practices.</p>
		<p>Summative assessment, criteria assessed, approximate timing/due date:</p> <ul style="list-style-type: none"> • Exam: Demonstrate an understanding of the earth, moon and sun system and its effects on Earth. (Earth and space sciences, Use and influence of science, Communicating) Week 5 • Sensational Seasons: Multimodal presentation regarding the cause of the seasons, the effect of the Earth's tilt, Climate trends and Climate science: (Earth and Space Sciences, Use and influence of science, Processing and analysing data and information, Communicating) Week 10
	Term 4	<p>Unit 7 Biological sciences: Organising organisms Students will identify and classify animals and plants according to scientific conventions. They will use and construct dichotomous keys to identify organisms found during a field study. Students will develop their own keys using information about what the organism eats and their location on a food chain.</p>
		<p>Unit 8 Biological sciences: Affecting organisms Reviewing their learning from Unit 7, students will construct food webs and identify key species. They will investigate human impact on food webs and species and examine fishing techniques to limit the impact to specific food webs.</p>
		<p>Summative assessment, criteria assessed, approximate timing/due date:</p> <ul style="list-style-type: none"> • Exam: Classifying Creatures: (Biological sciences, Processing and analysing data and information, Communicating) Week 4

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