

Australian Curriculum Version 9.0: Achievement standard aligned to content descriptions

This resource shows alignment between aspects of the achievement standard and relevant content descriptions for Year 9. A similar resource is available for other year levels.

The Australian Curriculum (AC) v9.0 code for each content description includes an element indicating the strand it is organised by, e.g. AC9S9U01 indicates Science understanding strand.

Key to content description codes: Science	
e.g. AC9SFU01	Strands:
Australian Curriculum (AC)	• SU — Science understanding
Version 9 (9)	• SHE — Science as a human endeavour
Science (S)	• SI — Science inquiry
Year (9)	
Strand (U, H, I)	
Content description number (##)	

Year 9 Australian Curriculum: Science achievement standard

By the end of Year 9 students explain how body systems provide a coordinated response to stimuli. They describe how the processes of sexual and asexual reproduction enable survival of the species. They explain how interactions within and between Earth's spheres affect the carbon cycle. They analyse energy conservation in simple systems and apply wave and particle models to describe energy transfer. They explain observable chemical processes in terms of changes in atomic structure, atomic rearrangement and mass. Students explain the role of publication and peer review in the development of scientific knowledge and explain the relationship between science, technologies and engineering. They analyse the different ways in which science and society are interconnected.

Students plan and conduct safe, reproducible investigations to test or identify relationships and models. They describe how they have addressed any ethical and intercultural considerations when generating or using primary and secondary data. They select and use equipment to generate and record replicable data with precision. They select and construct appropriate representations to organise, process and summarise data and information. They analyse and connect data and information to identify and explain patterns, trends, relationships and anomalies. They analyse the impact of assumptions and sources of error in methods and evaluate the validity of conclusions and claims. They construct logical arguments based on evidence to support conclusions and evaluate claims. They select and use content, language and text features effectively to achieve their purpose when communicating their ideas, findings and arguments to specific audiences.

Achievement standard aspect	Relevant content description/s	AC v9.0 code
By the end of Year 9	Students learn to:	
Students explain how body systems provide a coordinated response to stimuli.	<ul style="list-style-type: none"> compare the role of body systems in regulating and coordinating the body's response to a stimulus, and describe the operation of a negative feedback mechanism 	AC9S9U01
They describe how the processes of sexual and asexual reproduction enable survival of the species.	<ul style="list-style-type: none"> describe the form and function of reproductive cells and organs in animals and plants, and analyse how the processes of sexual and asexual reproduction enable survival of the species 	AC9S9U02
They explain how interactions within and between Earth's spheres affect the carbon cycle.	<ul style="list-style-type: none"> represent the carbon cycle and examine how key processes including combustion, photosynthesis and respiration rely on interactions between Earth's spheres (the geosphere, biosphere, hydrosphere and atmosphere) 	AC9S9U03
They analyse energy conservation in simple systems and apply wave and particle models to describe energy transfer.	<ul style="list-style-type: none"> use wave and particle models to describe energy transfer through different mediums and examine the usefulness of each model for explaining phenomena 	AC9S9U04
	<ul style="list-style-type: none"> apply the law of conservation of energy to analyse system efficiency in terms of energy inputs, outputs, transfers and transformations 	AC9S9U05
They explain observable chemical processes in terms of changes in atomic structure, atomic rearrangement and mass.	<ul style="list-style-type: none"> explain how the model of the atom changed following the discovery of electrons, protons and neutrons and describe how natural radioactive decay results in stable atoms 	AC9S9U06
	<ul style="list-style-type: none"> model the rearrangement of atoms in chemical reactions using a range of representations, including word and simple balanced chemical equations, and use these to demonstrate the law of conservation of mass 	AC9S9U07
Students explain the role of publication and peer review in the development of scientific knowledge and explain the relationship between science, technologies and engineering.	<ul style="list-style-type: none"> explain how scientific knowledge is validated and refined, including the role of publication and peer review 	AC9S9H01
	<ul style="list-style-type: none"> investigate how advances in technologies enable advances in science, and how science has contributed to developments in technologies and engineering 	AC9S9H02
They analyse the different ways in which science and society are interconnected.	<ul style="list-style-type: none"> analyse the key factors that contribute to science knowledge and practices being adopted more broadly by society 	AC9S9H03
	<ul style="list-style-type: none"> examine how the values and needs of society influence the focus of scientific research 	AC9S9H04
Students plan and conduct safe, reproducible investigations to test or identify relationships and models.	<ul style="list-style-type: none"> develop investigable questions, reasoned predictions and hypotheses to test relationships and develop explanatory models 	AC9S9I01
	<ul style="list-style-type: none"> plan and conduct valid, reproducible investigations to answer questions and test hypotheses, including identifying and controlling for possible sources of error and, as appropriate, developing and following risk assessments, considering ethical issues, and addressing key considerations regarding heritage sites and artefacts on Country/Place 	AC9S9I02
They describe how they have addressed any ethical and intercultural considerations when generating or using primary and secondary data.	<ul style="list-style-type: none"> plan and conduct valid, reproducible investigations to answer questions and test hypotheses, including identifying and controlling for possible sources of error and, as appropriate, developing and following risk assessments, considering ethical issues, and addressing key considerations regarding heritage sites and artefacts on Country/Place 	AC9S9I02

Achievement standard aspect	Relevant content description/s	AC v9.0 code
They select and use equipment to generate and record replicable data with precision.	<ul style="list-style-type: none"> select and use equipment to generate and record data with precision to obtain useful sample sizes and replicable data, using digital tools as appropriate 	AC9S9I03
They select and construct appropriate representations to organise, process and summarise data and information.	<ul style="list-style-type: none"> select and construct appropriate representations, including tables, graphs, descriptive statistics, models and mathematical relationships, to organise and process data and information 	AC9S9I04
They analyse and connect data and information to identify and explain patterns, trends, relationships and anomalies.	<ul style="list-style-type: none"> analyse and connect a variety of data and information to identify and explain patterns, trends, relationships and anomalies 	AC9S9I05
They analyse the impact of assumptions and sources of error in methods and evaluate the validity of conclusions and claims.	<ul style="list-style-type: none"> assess the validity and reproducibility of methods and evaluate the validity of conclusions and claims, including by identifying assumptions, conflicting evidence and areas of uncertainty 	AC9S9I06
They construct logical arguments based on evidence to support conclusions and evaluate claims.	<ul style="list-style-type: none"> construct arguments based on analysis of a variety of evidence to support conclusions or evaluate claims, and consider any ethical issues and cultural protocols associated with accessing, using or citing secondary data or information 	AC9S9I07
They select and use content, language and text features effectively to achieve their purpose when communicating their ideas, findings and arguments to specific audiences.	<ul style="list-style-type: none"> write and create texts to communicate ideas, findings and arguments effectively for identified purposes and audiences, including selection of appropriate content, language and text features, using digital tools as appropriate. 	AC9S9I08

More information

If you would like more information, please visit the QCAA website www.qcaa.qld.edu.au. Alternatively, email the K–10 Curriculum and Assessment branch at australiancurriculum@qcaa.qld.edu.au.

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