

Years 7–10 Science

Australian Curriculum Version 9.0: Sequence of content descriptions

The following table provides a sequence of content descriptions aligned to the strands and sub-strands for Years 7–10 Science. Content descriptions identify the learning area's essential knowledge, understanding and skills. This resource can be used to support curriculum planning. A similar resource is available for Prep–Year 6 Science.


Strand: Science understanding				
Sub-strands	Year 7	Year 8	Year 9	Year 10
Biological sciences	investigate the role of classification in ordering and organising the diversity of life on Earth and use and develop classification tools including dichotomous keys AC9S7U01	recognise cells as the basic units of living things, compare plant and animal cells, and describe the functions of specialised cell structures and organelles AC9S8U01	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	explain the role of meiosis and mitosis and the function of chromosomes, DNA and genes in heredity and predict patterns of Mendelian inheritance AC9S10U01
	use models, including food webs, to represent matter and energy flow in ecosystems and predict the impact of changing abiotic and biotic factors on populations AC9S7U02	analyse the relationship between structure and function of cells, tissues and organs in a plant and an animal organ system and explain how these systems enable survival of the individual AC9S8U02	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	use the theory of evolution by natural selection to explain past and present diversity and analyse the scientific evidence supporting the theory AC9S10U02
Earth and space sciences	model cyclic changes in the relative positions of the Earth, sun and moon and explain how these cycles cause eclipses and influence predictable phenomena on Earth, including seasons and tides AC9S7U03	investigate tectonic activity including the formation of geological features at divergent, convergent and transform plate boundaries and describe the scientific evidence for the theory of plate tectonics AC9S8U03	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	describe how the big bang theory models the origin and evolution of the universe and analyse the supporting evidence for the theory AC9S10U03
		describe the key processes of the rock cycle, including the timescales over which they occur, and examine how the properties of sedimentary, igneous and metamorphic rocks reflect their formation and influence their use AC9S8U04		use models of energy flow between the geosphere, biosphere, hydrosphere and atmosphere to explain patterns of global climate change AC9S10U04
Physical sciences	investigate and represent balanced and unbalanced forces, including gravitational force, acting on objects, and relate changes in an object's motion to its mass and the magnitude and direction of forces acting on it AC9S7U04	classify different types of energy as kinetic or potential and investigate energy transfer and transformations in simple systems AC9S8U05	use wave and particle models to describe energy transfer through different mediums and examine the usefulness of each model for explaining phenomena AC9S9U04	investigate Newton's laws of motion and quantitatively analyse the relationship between force, mass and acceleration of objects AC9S10U05
			apply the law of conservation of energy to analyse system efficiency in terms of energy inputs, outputs, transfers and transformations AC9S9U05	
Chemical sciences	use particle theory to describe the arrangement of particles in a substance, including the motion of and attraction between particles, and relate this to the properties of the substance AC9S7U05	classify matter as elements, compounds or mixtures and compare different representations of these, including 2-dimensional and 3-dimensional models, symbols for elements and formulas for molecules and compounds AC9S8U06	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	explain how the structure and properties of atoms relate to the organisation of the elements in the periodic table AC9S10U06
	use a particle model to describe differences between pure substances and mixtures and apply understanding of properties of substances to separate mixtures AC9S7U06	compare physical and chemical changes and identify indicators of energy change in chemical reactions AC9S8U07	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	identify patterns in synthesis, decomposition and displacement reactions and investigate the factors that affect reaction rates AC9S10U07

Strand: Science as a human endeavour		
Sub-strands	Years 7–8	Years 9–10
Nature and development of science	explain how new evidence or different perspectives can lead to changes in scientific knowledge AC9S7H01 AC9S8H01	explain how scientific knowledge is validated and refined, including the role of publication and peer review AC9S9H01 AC9S10H01
	investigate how cultural perspectives and world views influence the development of scientific knowledge AC9S7H02 AC9S8H02	investigate how advances in technologies enable advances in science, and how science has contributed to developments in technologies and engineering AC9S9H02 AC9S10H02
Use and influence of science	examine how proposed scientific responses to contemporary issues may impact on society and explore ethical, environmental, social and economic considerations AC9S7H03 AC9S8H03	analyse the key factors that contribute to science knowledge and practices being adopted more broadly by society AC9S9H03 AC9S10H03
	explore the role of science communication in informing individual viewpoints and community policies and regulations AC9S7H04 AC9S8H04	examine how the values and needs of society influence the focus of scientific research AC9S9H04 AC9S10H04

Strand: Science inquiry		
Sub-strands	Years 7–8	Years 9–10
Questioning and predicting	develop investigable questions, reasoned predictions and hypotheses to explore scientific models, identify patterns and test relationships AC9S7I01 AC9S8I01	develop investigable questions, reasoned predictions and hypotheses to test relationships and develop explanatory models AC9S9I01 AC9S10I01
Planning and conducting	plan and conduct reproducible investigations to answer questions and test hypotheses, including identifying variables and assumptions and, as appropriate, recognising and managing risks, considering ethical issues and recognising key considerations regarding heritage sites and artefacts on Country/Place AC9S7I02 AC9S8I02	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 AC9S10I02
	select and use equipment to generate and record data with precision, using digital tools as appropriate AC9S7I03 AC9S8I03	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 AC9S10I03
Processing, modelling and analysing	select and construct appropriate representations, including tables, graphs, models and mathematical relationships, to organise and process data and information AC9S7I04 AC9S8I04	select and construct appropriate representations, including tables, graphs, descriptive statistics, models and mathematical relationships, to organise and process data and information AC9S9I04 AC9S10I04
	analyse data and information to describe patterns, trends and relationships and identify anomalies AC9S7I05 AC9S8I05	analyse and connect a variety of data and information to identify and explain patterns, trends, relationships and anomalies AC9S9I05 AC9S10I05
Evaluating	analyse methods, conclusions and claims for assumptions, possible sources of error, conflicting evidence and unanswered questions AC9S7I06 AC9S8I06	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 AC9S10I06
	construct evidence-based arguments to support conclusions or evaluate claims and consider any ethical issues and cultural protocols associated with using or citing secondary data or information AC9S7I07 AC9S8I07	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 AC9S10I07
Communicating	write and create texts to communicate ideas, findings and arguments for specific purposes and audiences, including selection of appropriate language and text features, using digital tools as appropriate AC9S7I08 AC9S8I08	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 AC9S10I08

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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