

Australian Curriculum Science: Foundation to Year 10 Sequence of Achievement (aligned by strand/sub-strand)



Strand	Sub-strand	Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Science understandings	Chemical sciences	Describe the properties and behaviour of familiar objects	Describe objects and events that they encounter in their everyday lives Describe the effects of interacting with materials and objects	Identify that certain materials have different uses Describe changes to materials	Use understanding of materials to suggest explanations for everyday observations	Apply the observable properties of materials to explain how objects and materials can be used	Classify substances according to their observable properties and behaviours	Compare and classify different types of observable changes to materials	Describe techniques to separate pure substances from mixtures	Compare physical and chemical changes Use the particle model to explain and predict the properties and behaviours of substances	Explain chemical processes and natural radioactivity in terms of atoms and energy transfers Describe examples of important chemical reactions	Analyse how the periodic table organises elements and use it to make predictions about the properties of elements Explain how chemical reactions are used to produce particular products and how different factors influence the rate of reactions
	Physical sciences			Describe changes to objects	Use their understanding of the behaviour of heat to suggest explanations for everyday observations	Describe how contact and non-contact forces affect interactions between objects	Explain everyday phenomena associated with the transfer of light	Analyse requirements for the transfer of electricity and describe how energy can be transformed from one form to another when generating electricity	Represent and predict the effects of unbalanced forces , including Earth's gravity on motion	Identify different forms of energy and describe how energy transfers and transformations cause change in simple systems	Describe models of energy transfer and apply these to explain phenomena	Explain the concept of energy conservation and represent energy transfer and transformation within systems Apply relationships between force, mass and acceleration to predict changes in the motion of objects
	Earth and space sciences	Suggest how the environment affects them	Describe changes in their local environment	Identify that certain resources have different uses	Use their understanding of the movement of Earth , to suggest explanations for everyday observations	Discuss how natural processes and human activity cause changes to Earth's surface	Describe the key features of our solar system	Explain how natural events cause rapid change to Earth's surface	Explain how the relative positions of Earth, the sun and moon affect phenomena on Earth Analyse how the sustainable use of resources depends on the way they are formed and cycle through Earth systems	Compare processes of rock formation , including the timescales involved	Explain global features and events in terms of geological processes and timescales	Describe and analyse interactions and cycles within and between Earth's Spheres Evaluate the evidence for scientific theories that explain the origin of the universe
	Biological sciences	Suggest how the environment affects other living things	Describe how different places meet the needs of living things	Describe changes to living things	Group living things based on observable features and distinguish them from non-living things	Describe relationships that assist the survival of living things and sequence key stages in the life cycle of a plant or animal	Analyse how the form of living things enables them to function in their environments	Describe and predict the effect of environmental changes on individual living things	Predict the effect of human and environmental changes on interactions between organisms Classify and organise diverse organisms based on observable differences	Analyse the relationship between structure and function at cell, organ and body system levels	Analyse how biological systems function and respond to external changes with reference to interdependencies, energy transfers and flows of matter	Explain the processes that underpin heredity and evolution Evaluate the evidence for scientific theories that explain the diversity of life on Earth
Science as a Human Endeavour	Nature and development of science						Discuss how science knowledge develops from many people's contributions	Explain how scientific knowledge helps us to identify historical and cultural contributions	Describe situations where scientific knowledge from different science disciplines and diverse cultures has been used to solve a real-world problem	Explain how evidence has led to an improved understanding of a scientific idea Describe situations in which scientists collaborated to generate solutions to contemporary problems	Describe social and technological factors that have influenced scientific developments	Analyse how the models and theories scientists use have developed over time and discuss the factors that prompted their review
	Use and influence of science			Describe examples of where science is used in people's daily lives	Describe how they can use science investigations to respond to questions	Identify when science is used to understand the effect of their actions	Discuss how scientific developments have affected people's lives, help us solve problems	Explain how scientific knowledge helps us to solve problems and inform decisions	Explain possible implications of the solution for different groups in society	Reflect on implications of [scientific] solutions for different groups in society Examine the different science knowledge used in occupations	Predict how future applications of science and technology may affect people's lives	

Words in blue indicate the key content of science understanding. When planning inclusive curriculum, some students may require access to an alternate access point (substantial curriculum adjustments) or individual learning goals (extensive curriculum adjustments). The blue indicates the age-equivalent content that should be maintained from the student's chronological grade level. The complexity of the knowing and doing around this content is then adjusted according to the alternate access point or individual learning goals.

Eg. Year 8: Compare **physical and chemical changes**. Use the particle model to explain and predict the properties and behaviours of **substances**. Adjusting to an alternate access point of Year 2 would equate to: Identify **physical and chemical changes** that have different uses. Describe changes to **substances**.

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Science Inquiry Skills	Questioning and predicting	Ask and respond to questions about familiar objects and events	Respond to questions Make predictions of everyday phenomena	Pose and respond to questions about their experiences Predict outcomes of investigations	Use the experiences to identify questions and make predictions about scientific investigations	Follow instructions to identify investigable questions about familiar contexts Make predictions based on prior knowledge	Follow instructions to pose questions for investigation Predict the effect of changing variables when planning an investigation	Follow procedures to develop investigable questions	Identify questions that can be investigated scientifically	Identify and construct questions and problems that they can investigate scientifically	Design questions that can be investigated using a range of inquiry skills	Develop questions and hypotheses
	Planning and conducting		Participate in guided investigations of everyday phenomena Follow instructions to record their observations	Use informal measurements to make observations Record observations	Follow procedures to collect and record observations	Describe ways to conduct investigations and safely use equipment to make and record observations with accuracy	Use equipment in ways that are safe and improve the accuracy of their observations	Design investigations into simple cause-and-effect relationships Describe potential safety risks when planning methods Identify variables to be changed and measured Collect their data	Plan fair experimental methods, identifying variables to be changed and measured Select equipment that improves fairness and accuracy and describe how they considered safety	Identify variables to be changed, measured and controlled Consider safety and ethics when planning investigations, including designing field or experimental methods	Design methods that include the control and accurate measurement of variables and systematic collection of data Describe how they considered ethics and safety	Independently design and improve appropriate methods of investigation, including field work and laboratory experimentation Explain how they have considered reliability, safety, fairness and ethical actions in their methods and identify where digital technologies can be used to enhance the quality of data
	Processing and analysing data and information	Reflect on observations	Follow instructions to sort their observations	Use informal measurements to compare observations	Suggest possible reasons for their findings, based on patterns in their data	Use provided tables and column graphs to organise data and identify patterns Suggest explanations for observations and compare their findings with their predictions	Construct tables and graphs to organise data and identify patterns in the data Compare patterns in the data with predictions when suggesting explanations	Organise and interpret their data Describe and analyse relationships in data using appropriate representations	Draw on evidence to support their conclusions Summarise data from different sources, describe trends	Construct representations of their data to reveal and analyse patterns and trends, and use these when justifying their conclusions	Analyse trends in data, identify relationships between variables and reveal inconsistencies in results	When analysing data, selecting evidence and developing and justifying conclusions, they identify alternative explanations for findings and explain any sources of uncertainty
	Evaluating			Use informal measurements to compare observations	Describe how safety and fairness were considered	Suggest reasons why a test was fair or not	Describe ways to improve the fairness of their investigations	Identify where improvements to their methods or research could improve the data*	Refer to the quality of their data when suggesting improvements to their methods	Explain how modifications to methods could improve the quality of their data and apply their own scientific knowledge and investigation findings to evaluate claims made by others	Analyse their methods and the quality of their data, and explain specific actions to improve the quality of their evidence Evaluate others' methods and explanations from a scientific perspective	Evaluate the validity and reliability of claims made in secondary sources with reference to currently held scientific views, the quality of the methodology and the evidence cited
	Communicating	Share observations	Share observations with others	Represent observations and communicate ideas in a variety of ways	Use diagrams and other representations to communicate their findings	Use formal and informal ways to communicate their observations and findings	Communicate their ideas and findings using multimodal texts	Construct multimodal texts to communicate ideas, methods and findings	Communicate their ideas, methods and findings using scientific language and appropriate representations	Use appropriate language and representations to communicate science ideas, methods and findings in a range of text types	Use appropriate language and representations when communicating their findings and ideas to specific audiences	Construct evidence-based arguments and select appropriate representations and text types to communicate science ideas for specific purposes