



Western Australian Curriculum

Science

Proposed Achievement Standards | Pre-primary–Year 10
Draft for consultation | Not for implementation

Acknowledgement of Country

Kaya. The School Curriculum and Standards Authority (the Authority) acknowledges that our offices are on Whadjuk Noongar boodjar and that we deliver our services on the country of many traditional custodians and language groups throughout Western Australia. The Authority acknowledges the traditional custodians throughout Western Australia and their continuing connection to land, waters and community. We offer our respect to Elders past and present.

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Overview

The current Western Australian Curriculum: Science was adopted from the Australian Curriculum version 8.1.

Western Australia provided feedback to the Australian Curriculum, Assessment and Reporting Authority (ACARA) during the consultation for the Australian Curriculum.

The proposed revisions to the Western Australian Curriculum: Science are adopted and adapted from the Australian Curriculum version 9.

Guide to reading this document

This document shows the current Western Australian Curriculum: Science curriculum Achievement Standards in the first column, the comparable Australian Curriculum version 9 Achievement Standards in the centre column, and the proposed Achievement Standards for Western Australia in the third column.

Pre-primary

Current WA Curriculum	Australian Curriculum v9	Proposed WA Curriculum
<p>Science Understanding</p> <p>At Standard, students describe the properties and behaviour of familiar objects. They suggest how the environment affects them and other living things.</p> <p>Science as a Human Endeavour</p> <p>Students share and reflect on observations.</p> <p>Science Inquiry Skills</p> <p>Students ask and respond to questions about familiar objects and events.</p>	<p>By the end of Foundation students group plants and animals based on external features. They identify factors that influence the movement of objects. They describe the observable properties of the materials that make up objects. They identify examples of people using observation and questioning to learn about the natural world.</p> <p>Students pose questions and make predictions based on their experiences. They engage in investigations and make observations safely. With guidance, they represent observations and identify patterns. With guidance, they compare their observations with their predictions. They share questions, predictions, observations and ideas about their experiences with others.</p>	<p>By the end of Pre-primary, children describe the habitat of plants and animals, their basic needs and how these needs are met. They identify factors that influence the movement of objects and describe the observable properties of various materials, recognising that everyday objects are composed of these. Children describe how daily and seasonal changes in the environment affect everyday life.</p> <p>Children pose questions and make predictions based on their experiences. They use their senses in guided investigations to make observations, discuss these and represent them in a variety of ways. With guidance, they compare their observations with their predictions and share questions, predictions, observations, and ideas about their experiences with others.</p>

Year 1

Current WA Curriculum	Australian Curriculum v9	Proposed WA Curriculum
<p>Science Understanding</p> <p>At Standard, students describe objects and events that they encounter in their everyday lives, and the effects of interacting with materials and objects. They describe the external features of living things and how different places meet the needs of living things. Students describe changes in their local environment.</p> <p>Science as a Human Endeavour</p> <p>Students share how people use science in their daily lives, including when caring for the environment and living things.</p> <p>Science Inquiry Skills</p> <p>Students respond to questions, make predictions, and participate in guided investigations of everyday phenomena. They follow instructions to record and sort their observations and share them with others.</p>	<p>By the end of Year 1 students identify how living things meet their needs in the places they live. They identify daily and seasonal changes and describe ways these changes affect their everyday life. They describe how different pushes and pulls change the motion and shape of objects. They describe situations where they use science in their daily lives and identify examples of people making scientific predictions.</p> <p>Students pose questions to explore observations and make predictions based on experiences. They follow safe procedures to make and record observations. They use provided tables and organisers to sort and order data and information and, with guidance, represent patterns. With guidance, they compare observations with predictions and identify further questions. They use everyday vocabulary to communicate observations, findings and ideas.</p>	<p>By the end of Year 1, children sort plants and animals according to their external features. They appreciate that water is a natural resource, that it comes from a range of sources, is used in different ways and moves through the environment through the water cycle. Children recognise that sound is a form of energy produced by natural and human sources and can be observed in many ways. They understand that physical changes to materials do not affect their composition.</p> <p>Children pose questions to explore science ideas and make predictions based on experiences and prior knowledge. They engage safely in guided investigations to explore and answer questions making and recording observations, including informal measurements, using templates. Children use provided tables to sort data and represent it visually and with physical models. With guidance, children compare observations with predictions and identify further questions. They use everyday vocabulary to communicate observations and findings. They use their science knowledge to help them make choices and decisions.</p>

Year 2

Current WA Curriculum	Australian Curriculum v9	Proposed WA Curriculum
<p>Science Understanding</p> <p>At Standard, students describe changes to materials and living things, and how a push or a pull affects an object’s behaviour. They identify that certain materials and resources have different uses.</p> <p>Science as a Human Endeavour</p> <p>Students describe examples of where science is used in people’s daily lives.</p> <p>Science Inquiry Skills</p> <p>Students pose and respond to questions about their experiences and predict outcomes of investigations. They use informal measurements to make and compare observations. Students record and represent observations and communicate ideas in a variety of ways.</p>	<p>By the end of Year 2 students identify celestial objects and describe patterns they observe in the sky. They demonstrate how different sounds can be produced and describe the effect of sound energy on objects. They identify ways to change materials without changing their material composition. They describe how people use science in their daily lives and how people use patterns to make scientific predictions.</p> <p>Students pose questions to explore observed patterns or relationships and make predictions based on experience. They suggest steps to be followed in an investigation and follow safe procedures to make and record observations. They use provided tables and organisers to sort and order data and represent patterns in data. With guidance, they compare their observations with those of others, identify whether their investigation was fair and identify further questions. They use everyday and scientific vocabulary to communicate observations, findings and ideas.</p>	<p>By the end of Year 2, children identify and sequence the life stages of specific plants and animals. They represent Earth’s position in the solar system and its orbit around a star (the sun). Children describe the strength and direction of a push or pull force and describe who it affects the motion and/or shape of an object. Children identify materials and describe how materials can be combined for different purposes.</p> <p>Children pose questions to explore science ideas and make predictions based on experiences and prior knowledge. They make and record scaffolded observations during guided investigations, including informal measurements. They use provided organisers to sort and order data and represent patterns in data. Children compare their observations with those of others and identify further questions. They use everyday and scientific vocabulary to communicate observations, findings and ideas. Students use their science knowledge to help them make choices and decisions.</p>

Year 3

Current WA Curriculum	Australian Curriculum v9	Proposed WA Curriculum
<p>Science Understanding</p> <p>At Standard, students use their understanding of the rotation of Earth, the behaviour of heat and its effect on materials to suggest explanations for everyday observations. They group living things based on observable features and distinguish them from non-living things.</p> <p>Science as a Human Endeavour</p> <p>Students describe how they can use science investigations to respond to questions.</p> <p>Science Inquiry Skills</p> <p>Students use their experiences to identify questions and make predictions about scientific investigations. They follow procedures to collect and record observations and suggest possible reasons for their findings, based on patterns in their data. Students describe how safety and fairness were considered and they use diagrams and other representations to communicate their ideas.</p>	<p>By the end of Year 3 students classify and compare living and non-living things and different life cycles. They describe the observable properties of soils, rocks and minerals and describe their importance as resources. They identify sources of heat energy and examples of heat transfer and explain changes in the temperature of objects. They classify solids and liquids based on observable properties and describe how to cause a change of state. They describe how people use data to develop explanations. They identify solutions that use scientific explanations.</p> <p>Students pose questions to explore patterns and relationships and make predictions based on observations. They use scaffolds to plan safe investigations and fair tests. They use familiar classroom instruments to make measurements. They organise data and information using provided scaffolds and identify patterns and relationships. They compare their findings with those of others, explain how they kept their investigation fair, identify further questions and draw conclusions. They communicate ideas and findings for an identified purpose, including using scientific vocabulary when appropriate.</p>	<p>By the end of Year 3, students group living things based on their features, and distinguish them from non-living and once-living things. They recognise that soils, rocks and minerals are important Earth resources and are used by both humans and other living things in various and interconnected ways. They identify different types of energy and understand that it can be transferred and transformed. They describe how heat causes a change of state in a substance.</p> <p>Students explore science ideas by posing questions that include variables to be measured and changed. They make predictions based on observations of planned phenomena and test these using scaffolds to plan and conduct investigations that include variables to be kept the same and identified material and equipment risks. They make and record observations, including formal measurements using familiar scaled instruments. They organise data and information using tables, column graphs and models to identify patterns. They compare their data with those of others, determine if their investigation was fair and identify further questions. They communicate ideas and findings for using scientific vocabulary using scaffolded texts. Students use science knowledge to propose explanations for observed phenomena and solutions to problems.</p>

Year 4

Current WA Curriculum	Australian Curriculum v9	Proposed WA Curriculum
<p>Science Understanding</p> <p>At Standard, students describe how materials can be used and relate this to their observable properties. They describe how contact and non-contact forces affect interactions between objects. Students discuss how natural processes and human activity cause changes to Earth’s surface. They describe relationships that assist the survival of living things and sequence key stages in the life cycle of a plant or animal.</p> <p>Science as a Human Endeavour</p> <p>Students identify that science is used to understand the world around them.</p> <p>Science Inquiry Skills</p> <p>Students follow instructions to identify investigable questions about familiar contexts and make predictions based on prior knowledge. They describe ways to conduct investigations and safely use equipment to make and record observations. Students use provided tables and construct column graphs to organise data and identify patterns. They suggest explanations for observations and compare their findings with their predictions. Students suggest reasons why a test was fair or not. They use formal and informal ways to communicate their observations and findings.</p>	<p>By the end of Year 4 students identify the roles of organisms in a habitat and construct food chains. They identify key processes in the water cycle and describe how water cycles through the environment. They identify forces acting on objects and describe their effect. They relate the uses of materials to their properties. They explain the role of data in science inquiry. They identify solutions based on scientific explanations and describe the needs these meet.</p> <p>Students pose questions to identify patterns and relationships and make predictions based on observations. They plan investigations using planning scaffolds, identify key elements of fair tests and describe how they conduct investigations safely. They use simple procedures to make accurate formal measurements. They construct representations to organise data and information and identify patterns and relationships. They compare their findings with those of others, assess the fairness of their investigation, identify further questions for investigation and draw conclusions. They communicate ideas and findings for an identified audience and purpose, including using scientific vocabulary when appropriate.</p>	<p>By the end of Year 4, students describe the interaction between consumers, producers, and decomposers in a habitat and represent these using food chains. They identify types of weathering and the resulting changes to Earth’s surface over time. Students identify contact and non-contact forces and describe, with examples, how they affect the behaviour of objects. They relate the uses of materials to their observable properties.</p> <p>Students explore science ideas by posing questions that include variables to be measured and changed. They make predictions based on observations of planned phenomena and prior knowledge and test these using scaffolds to plan and conduct investigations that include variables to be kept the same, identified material and equipment risks, ordered steps and multiple trials. They make and record observations, including formal measurements using scaled instruments. They organise data and information using tables, column graphs and models to identify patterns and describe findings. They compare their findings with those of others, explain how they kept their investigation fair and identify further questions. They communicate ideas and findings for an identified purpose and audience, including using scientific vocabulary. Students use science knowledge to propose explanations for observed phenomena and solutions to problems.</p>

Year 5

Current WA Curriculum	Australian Curriculum v9	Proposed WA Curriculum
<p>Science Understanding</p> <p>At Standard, students classify solids, liquids and gases according to their observable properties and behaviours. They describe everyday phenomena associated with the transfer of light. Students describe the key features of our solar system. They analyse how the features of living things enables them to function in their environments.</p> <p>Science as a Human Endeavour</p> <p>Students discuss how scientific developments have affected people’s lives, help us solve problems and how science knowledge develops from many people’s contributions.</p> <p>Science Inquiry Skills</p> <p>Students follow instructions to pose questions for investigation and predict the effect of changing variables when planning an investigation. They use equipment in ways that are safe and improve the accuracy of their observations. Students construct tables and graphs to organise data and identify patterns in the data. They compare patterns in their data with predictions when suggesting explanations. Students describe ways to improve the fairness of their investigations, and communicate their ideas and findings.</p>	<p>By the end of Year 5 students explain how the form and behaviour of living things enables survival. They describe key processes that change Earth’s surface. They identify sources of light and model the transfer of light to explain observed phenomena. They relate the particulate arrangement of solids, liquids and gases to their observable properties. They describe examples of collaboration leading to advances in science, and scientific knowledge that has changed over time. They identify examples where scientific knowledge informs the actions of individuals and communities.</p> <p>Students plan safe investigations to identify patterns and relationships and make reasoned predictions. They identify risks associated with investigations and key intercultural considerations when planning field work. They identify variables to be changed and measured. They use equipment to generate data with appropriate precision. They construct representations to organise data and information and describe patterns, trends and relationships. They compare their methods and findings to those of others, identify possible sources of error in their investigation, pose questions for further investigation and draw reasoned conclusions. They use language features that reflect their purpose and audience when communicating their ideas and findings.</p>	<p>By the end of Year 5, students explain how the form and behaviour of living things enables survival in their habitat. They model the relationship between the sun and the planets in the solar system and illustrate how Earth’s tilt, rotation on its axis and revolution around the sun relate to observable cyclic phenomena. They identify sources of light, describe how it moves in a straight path and explain how it is reflected, refracted, absorbed, forms shadows and may be sensed. They describe the observable properties of solids, liquids and gases, how they behave in different ways, and relate this to the arrangement of atoms and molecules (particles).</p> <p>Students pose measurable questions that include variables to be changed and measured and apply science knowledge to make predictions. They plan and conduct safe, fair, repeatable investigations, to test predictions. Students use selected equipment to generate data. They organise data and information using tables, graphs and models to describe patterns and relationships. Students compare their methods and findings to those of others, to identify possible sources of error in investigations, pose questions for further investigation and draw reasoned conclusions. They use language features that reflect their purpose and audience when communicating ideas and findings. They use science knowledge to develop considered responses to problems through investigation and research at a local and global level.</p>

Year 6

Current WA Curriculum	Australian Curriculum v9	Proposed WA Curriculum
<p>Science Understanding</p> <p>At Standard, students compare and classify reversible and irreversible observable changes to materials. They describe how energy can be transformed from one form to another in electrical circuits and can be generated from a range of sources. Students explain how natural events cause sudden change to Earth’s surface. They describe and predict the effect of environmental changes on living things.</p> <p>Science as a Human Endeavour</p> <p>Students explain how scientific knowledge helps us to solve problems and inform decisions and identify historical contributions.</p> <p>Science Inquiry Skills</p> <p>Students follow procedures to develop investigable questions and design investigations into simple relationships. They identify variables to be changed and measured and describe potential safety risks when planning methods. Students collect, organise and interpret their data, identifying where improvements to their methods or research could improve the data. They describe and analyse relationships in data using appropriate representations to communicate ideas, methods and findings.</p>	<p>By the end of Year 6 students explain how changes in physical conditions affect living things. They model the relationship between the sun and planets of the solar system and explain how the relative positions of Earth and the sun relate to observed phenomena on Earth. They identify the role of circuit components in the transfer and transformation of electrical energy. They classify and compare reversible and irreversible changes to substances. They explain why science is often collaborative and describe different individuals’ contributions to scientific knowledge. They describe how individuals and communities use scientific knowledge.</p> <p>Students plan safe, repeatable investigations to identify patterns and test relationships and make reasoned predictions. They describe risks associated with investigations and key intercultural considerations when planning field work. They identify variables to be changed, measured and controlled. They use equipment to generate and record data with appropriate precision. They construct representations to organise and process data and information and describe patterns, trends and relationships. They identify possible sources of error in their own and others’ methods and</p>	<p>By the end of Year 6, students explain how changes in physical conditions affect the growth and survival of living things. They investigate the effect of sudden geological changes and extreme weather on Earth’s surface. Students identify the role of circuit components in the transfer and transformation of electrical energy. They classify and compare reversible and irreversible changes to substances and explain change of state.</p> <p>Students pose specific, relevant and measurable questions that include variables to be changed and measured and apply science knowledge to make reasoned predictions. They plan and conduct safe, fair, repeatable investigations including controlled variables to test predictions and identify patterns and relationships. They select and use appropriate equipment to generate and record data. Students process and represent data using tables, graphs and models to identify patterns, and describe the observed relationship between the dependant and independent variables. They compare methods and findings with those of others, and to predictions and pose questions for further investigation. Students select evidence to draw conclusions and select language features when communicating their ideas and findings. They use science knowledge to</p>

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	<p>findings, pose questions for further investigation and select evidence to support reasoned conclusions. They select and use language features effectively for their purpose and audience when communicating their ideas and findings.</p>	<p>develop considered responses to problems through investigation and research at a local and global level.</p>

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Year 7

Current WA Curriculum	Australian Curriculum v9	Proposed WA Curriculum
<p>Science Understanding</p> <p>At Standard, students describe techniques to separate pure substances from mixtures. They represent and predict the effects of unbalanced forces, including Earth’s gravity, on motion. Students explain how the relative positions of Earth, the 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. Students classify and organise diverse organisms based on observable differences and predict the effect of human and environmental changes on interactions between organisms.</p> <p>Science as a Human Endeavour</p> <p>Students describe situations where scientific knowledge has been used to solve a real-world problem.</p> <p>Science Inquiry Skills</p> <p>Students identify questions that can be investigated scientifically. They plan fair experimental methods, identifying variables to be changed and measured. Students select equipment that improves fairness and accuracy and describe how they considered safety. They draw on evidence to support their conclusions. Students summarise data from different sources,</p>	<p>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.</p> <p>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</p>	<p>By the end of Year 7 students classify and organise diverse organisms based on observable differences. They represent the flow of energy in ecosystems and predict the impacts of human activity. They use particle theory to explain the motion and arrangement of atoms and molecules and describe techniques to separate pure substances from mixtures. They can classify celestial objects in the night sky based on their observable properties and explain how the relative positions of Earth, the sun and moon affect phenomena on Earth. They can classify forces as acting in contact or at a distance and represent and predict the effects of unbalanced forces on motion.</p> <p>Students plan and conduct reproducible investigations to test relationships and aspects of scientific models. They identify risks and ethical issues involved in conducting investigations. They use equipment to generate and record data with precision. They select and construct appropriate representations to organise data and information. They analyse data and information to describe patterns, trends and relationships. They identify possible sources of error in methods and refer to the quality of their data when suggesting improvements to their methods. They identify evidence to support their conclusions and</p>

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<p>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.</p>	<p>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.</p>	<p>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. They identify situations where development of scientific knowledge has benefited from collaboration and has influenced the development of human activity.</p>

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Year 8

Current WA Curriculum	Australian Curriculum v9	Proposed WA Curriculum
<p>Science Understanding</p> <p>At Standard, students compare physical and chemical changes and use the particle model to explain and predict the properties and behaviours of the states of matter. They identify different forms of energy and describe how energy transfers and transformations cause change in simple systems. Students compare the different processes of rock formation. They describe the relationship between structure and function at cell, organ and body system levels.</p> <p>Science as a Human Endeavour</p> <p>Students explain how evidence has led to an improved understanding of a scientific idea and where science knowledge is used in various occupations.</p> <p>Science Inquiry Skills</p> <p>Students construct questions that they can investigate scientifically. They consider safety and ethics when planning investigations, including designing field or experimental methods. Students identify variables to be changed, measured and controlled. They construct representations of their data to identify and analyse patterns and trends, and use these when justifying their conclusions. Students explain how modifications to methods could improve the quality of their data. They apply their scientific knowledge to evaluate</p>	<p>By the end of Year 8 students explain the role of specialised cell structures and organelles in cellular function and analyse the relationship between structure and function at organ and body system levels. They apply an understanding of the theory of plate tectonics to explain patterns of change in the geosphere. They explain how the properties of rocks relate to their formation and influence their use. They compare different forms of energy and represent transfer and transformation of energy in simple systems. They classify and represent different types of matter and distinguish between physical and chemical change. Students analyse how different factors influence development of and lead to changes in scientific knowledge. They analyse the key considerations that inform scientific responses and how these responses impact society. They analyse the importance of science communication in shaping viewpoints, policies and regulations.</p> <p>Students plan and conduct safe, reproducible investigations to test relationships and explore models. They describe potential ethical issues and intercultural considerations needed for specific field locations or use of secondary data. They select and use equipment to generate and record data with precision. They select and construct appropriate</p>	<p>By the end of Year 8 students explain the role of specialised cell structures and organelles in cellular function. They compare the structure and function of flowering plant and vertebrate systems. They classify and represent different types of matter and distinguish between physical and chemical change. They apply an understanding of the theory of plate tectonics to explain patterns of change in the geosphere. They compare the different processes of rock formation and classify rocks and minerals using their physical properties. They compare different forms of energy and represent transfer and transformation of energy in simple systems and electricity generation.</p> <p>Students plan and conduct reproducible investigations to test relationships and aspects of scientific models. They describe risks and ethical issues involved in conducting investigations. They select and use equipment to generate and record data with precision. They select and construct appropriate representations to organise data and information. They analyse data and information to describe patterns, trends and relationships and identify anomalies. They identify possible sources of error in methods and explain how modifications to methods could improve the quality of their data. They</p>

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<p>claims made by others. Students use appropriate language and representations to communicate science ideas, methods and findings.</p>	<p>representations to organise and process data and information. They analyse data and information to describe patterns, trends and relationships and identify anomalies. They identify assumptions and sources of error in methods and analyse conclusions and claims with reference to conflicting evidence and unanswered questions. They construct evidence-based arguments to support conclusions and evaluate claims. They select and use language and text features appropriately for their purpose when communicating their ideas, findings and arguments to specific audiences.</p>	<p>construct evidence-based arguments to support conclusions and evaluate claims. They select and use language and text features appropriately for their purpose when communicating their ideas, findings and arguments to specific audiences. They describe situations where development of scientific knowledge has benefited from collaboration and has influenced the development of human activity.</p>

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Year 9

Current WA Curriculum	Australian Curriculum v9	Proposed WA Curriculum
<p>Science Understanding</p> <p>At Standard, students explain chemical processes and natural radioactivity in terms of atoms and energy transfers and describe examples of important chemical reactions. They describe wave and particle models of energy transfer and apply these to explain phenomena. Students explain global features and events in terms of geological processes and timescales. They analyse how biological systems function and respond to external changes and describe ecosystems with reference to interdependencies, energy transfers and flows of matter.</p> <p>Science as a Human Endeavour</p> <p>Students describe social and technological factors that have influenced scientific developments.</p> <p>Science Inquiry Skills</p> <p>Students design questions that can be investigated. They design methods that include the control and measurement of variables and systematic collection of data and describe how they considered ethics and safety. Students analyse trends in data, identify relationships between variables and inconsistencies in results. They analyse their methods and the quality of their data, and suggest actions to improve the quality of their evidence. Students evaluate others' methods</p>	<p>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.</p> <p>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</p>	<p>By the end of Year 9 students analyse how organisms respond to external temperature changes and plant and animal adaptations aid survival. They analyse the impact of abiotic and biotic factors on population size and species biodiversity. They describe the arrangement of elements in the periodic table. They write chemical formulae to represent simple compounds and word equations for chemical reactions. They explain how interactions within and between Earth's spheres affect the carbon cycle, water cycle and global climate. They describe wave and particle models of energy transfer and apply these to explain phenomena.</p> <p>Students plan and conduct reproducible investigations to test or identify relationships and models. They follow risk assessments when conducting investigations and describe how they address ethical considerations. 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 sources of error in methods and evaluate the validity of conclusions and claims. They construct</p>

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<p>and explanations from a scientific perspective and use appropriate language and representations when communicating their findings and ideas.</p>	<p>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.</p>	<p>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. They explain how advances in science, technologies and engineering are interconnected and how scientific responses are developed and can impact society.</p>

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Year 10

Current WA Curriculum	Australian Curriculum v9	Proposed WA Curriculum
<p>Science Understanding</p> <p>At Standard, students analyse how the periodic table organises elements and use it to make predictions about the properties of elements. They explain how chemical reactions are used to produce particular products and how different factors influence the rate of reactions. Students apply relationships between force, mass and acceleration to predict changes in the motion of objects. They explain the concept of energy conservation and represent energy transfer and transformation within systems. Students describe and analyse interactions and cycles within and between Earth’s spheres. They describe the evidence for scientific theories that explain the origin of the universe and the diversity of life on Earth. Students explain the processes that underpin heredity and evolution.</p> <p>Science as a Human Endeavour</p> <p>Students analyse how the models and theories they use have developed over time.</p> <p>Science Inquiry Skills</p> <p>Students develop questions and hypotheses and independently design and improve appropriate methods of investigation. They describe how they have considered reliability, safety, fairness and ethical</p>	<p>By the end of Year 10 students explain the processes that underpin heredity and genetic diversity and describe the evidence supporting the theory of evolution by natural selection. They sequence key events in the origin and evolution of the universe and describe the supporting evidence for the big bang theory. They describe trends in patterns of global climate change and identify causal factors. They explain how Newton’s laws describe motion and apply them to predict motion of objects in a system. They explain patterns and trends in the periodic table and predict the products of reactions and the effect of changing reactant and reaction conditions. Students analyse the importance of publication and peer review in the development of scientific knowledge and analyse the relationship between science, technologies and engineering. They analyse the key factors that influence interactions between science and society.</p> <p>Students plan and conduct safe, valid and reproducible investigations to test relationships or develop explanatory models. They explain how they have addressed any ethical and intercultural considerations when generating or using primary and secondary data. They select equipment and use it efficiently to generate and record appropriate sample</p>	<p>By the end of Year 10 students explain the processes that underpin heredity and predict the outcome of non-sex-linked crosses. They describe the processes and supporting evidence that underpin the theory of evolution by natural selection. They analyse how the periodic table organises elements and use it to make predictions about the properties of elements. They predict the effect of changing reactant and reaction conditions and use chemical equations to predict the products of reactions. They sequence key events in the formation of stars, galaxies and solar systems and explain the benefits of space exploration. They explain how Newton’s laws describe motion and apply them to predict motion of objects in a system. They explain the concept of energy conservation and represent energy transfer and transformation within systems.</p> <p>Students plan and conduct valid and reproducible investigations to test or identify relationships and models. They develop and apply risk assessments and ethical considerations involved in conducting investigations. They select equipment and use it efficiently to generate and record appropriate sample sizes and replicable data with precision. They select and construct appropriate representations to organise, process and summarise data and information. They analyse and connect a variety of</p>

Current WA Curriculum	Australian Curriculum v9	Proposed WA Curriculum
<p>actions in their methods. When analysing data, selecting evidence and developing conclusions, students identify any sources of uncertainty. They evaluate the validity and reliability of claims made in secondary sources with reference to the evidence cited. Students construct evidence-based arguments and select appropriate representations to communicate science ideas.</p>	<p>sizes and replicable data with precision. They select and construct effective representations to organise, process and summarise data and information. They analyse and connect a variety of data and information to identify and explain patterns, trends, relationships and anomalies. They evaluate the validity and reproducibility of methods, and the validity of conclusions and claims. They construct logical arguments based on analysis of a variety of 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 diverse audiences.</p>	<p>data and information to identify and explain patterns, trends, relationships and anomalies. They evaluate the validity and reproducibility of methods, and the validity of conclusions and claims. They construct logical arguments based on analysis of a variety of 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 diverse audiences. They explain how advances in science, technologies and engineering are interconnected and analyse scientific responses and how these responses impact society.</p>