



# Western Australian Curriculum

## Science

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Achievement standards | Pre-primary–Year 10  
(Provisional)

For familiarisation in 2025

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## Overview

An Achievement standard describes the quality of learning (e.g. the depth of conceptual understanding and the sophistication of skills) that would indicate the student is well placed to commence the learning required at the next level of achievement.

The Achievement standard describes an expected level that the majority of students are achieving or working towards by the end of that year of schooling. Some students will have progressed beyond the Achievement standard; others will need additional support.

The Achievement standards for the Science curriculum are provisional and will be validated once teachers have had the time to become familiar with the teaching and assessment of the revised curriculum.

## Pre-primary

By the end of the year:

Children describe the basic needs of plants and animals and how these are met by the places they live. They describe the influence of size, shape, material and force on the movement of objects. Children describe the observable properties of various materials used in everyday objects. They describe how daily and seasonal changes in the environment affect everyday life.

Children in Pre-primary pose questions and make predictions based on their shared experiences and knowledge. They use their senses in guided investigations to make observations, discuss these and represent them in a variety of ways. Children discuss similarities between their predictions and observations.

## Year 1

By the end of the year:

Children group plants and animals by observing their external features. They recognise that water is a natural resource that comes from a range of sources and is used in different ways by plants, animals and people. Children describe the strength and direction of a push or pull force and how it affects the motion and/or shape of an object. They understand that physical changes to materials do not affect their composition.

Children pose questions to explore science ideas and make predictions based on experiences and prior knowledge. They engage safely in guided investigations, making and recording observations, including informal measurements. 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. Children use their science knowledge to help them make choices and decisions.

## Year 2

By the end of the year:

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 recognise that sound is a form of energy produced by natural and human sources and can be sensed. They describe ways materials can be combined for different purposes.

Children pose questions to explore science ideas and make predictions based on experiences and prior knowledge. They make and record observations including informal measurements during guided investigations. They use provided organisers to sort, order, 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. Children use their science knowledge to help them make choices and decisions



## Year 3

By the end of the year:

Students group living things based on their characteristics 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 different and interconnected ways. They understand that energy can be transferred and transformed. Students recall the observable properties of solids and liquids and understand that a change of state in a substance results from adding or removing heat.

Students explore science ideas by posing guided questions about the effect on one variable of changing another. They make predictions, with assistance, and test them by planning and conducting safe investigations that account for variables to be kept the same. They record observations and measurements, made with familiar scaled instruments. They compare this data in tables, graphs and models to predictions and to the results of others. They communicate findings using scientific vocabulary. Children use science knowledge to propose explanations for observed phenomena and solutions to problems.

## Year 4

By the end of the year:

Students describe the interaction between producers, consumers and decomposers in a habitat and represent these using food chains. They identify the processes that result in slow and rapid 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 connect raw materials to the processed materials that are made from them and relate the use of materials to their observable properties.

Students explore science ideas by posing questions, with guidance, that include variables to measure and change. They make predictions based on observations and test them by planning and conducting scaffolded investigations. Students record observations and formal measurements using scaled instruments. They organise data using tables, column graphs, and models to identify patterns and describe findings. Students compare their results with their predictions, identify how they kept their investigation fair, and identify further questions. With support, they communicate ideas and findings using scientific vocabulary. Students use science knowledge to propose explanations for observed phenomena and solutions to problems.

## Year 5

By the end of the year:

Students describe the structural and behavioural adaptations of various living things that enable survival in their habitats. They model the relationship between the Sun and the planets in the solar system and illustrate how Earth's rotation on its axis and revolution around the Sun relate to observable cyclic phenomena. They identify sources of light, describe how it travels in a straight line, and explain how it is reflected, refracted, absorbed, forms shadows, and can be sensed. They describe and compare the observable properties and behaviour of solids, liquids and gases, and relate this to the arrangement of atoms and molecules (particles).

Students pose measurable questions that include variables to be changed and measured. They apply science knowledge to make predictions and, with guidance, plan and conduct safe, fair investigations, to test them. Students use a variety of equipment to observe, measure and record data that they organise using tables, graphs and models to identify the relationship between variables. Students compare their results with their predictions, explain how they kept their investigation fair and pose questions for further investigation. They communicate their investigation procedure, data and results in various ways. Students use science knowledge to develop considered responses to problems, at a local level, through investigation and research.

## Year 6

By the end of the year:

Students explain how changes in conditions in the environment and the influence of human activities affect the growth and survival of living things. They describe the effect of sudden geological changes and extreme weather on Earth's surface. Students identify the role of circuit components, insulators and conductors in the transfer and transformation of electrical energy. They classify and compare reversible and irreversible changes to substances.

Students pose 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 to test predictions and identify the relationship between variables. Students use equipment to generate and record data that they process and represent using tables, graphs and models to describe their findings. They compare their results with predictions and with those of others and pose questions for further investigation. With assistance, students, draw conclusions based on collected data and communicate these in various ways including scientific reports. They use science knowledge to develop considered responses to problems, at a regional and global level, through investigation and research.

## Year 7

By the end of the year:

Students classify and group organisms based on observable features. 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 in solids, liquids and gases and describe techniques to separate pure substances from mixtures. They can classify celestial objects based on their observable properties and explain how the relative positions of Earth, the Sun and Moon affect phenomena on Earth. They can identify situations when friction, gravitational, magnetic and electrostatic forces are acting, represent and predict the effects of unbalanced forces on motion and identify the type of mechanical advantage provide by simple machines.

Students plan and conduct reproducible investigations to test relationships and aspects of scientific models. They identify risks involved in conducting investigations. They use equipment to generate and record data with precision. They construct appropriate representations to organise data and information. They analyse data and information to describe patterns and relationships. They identify possible sources of error in methods and suggest improvements to their methods. They draw simple conclusions that identify patterns or relationships evident in their data. They identify evidence to support their conclusions and 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.

## Year 8

By the end of the year:

Students explain the role of cell structures and organelles. They compare the structure and function of flowering plant and vertebrate systems. They distinguish between elements and compounds and identify metals and non-metals based on their physical properties. They identify physical and chemical changes. They apply an understanding of the theory of plate tectonics to explain patterns of change on Earth. 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.

Students plan and conduct reproducible investigations to test relationships and aspects of scientific models. They describe and manage risks 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 and relationships and identify anomalies. They identify possible sources of error in methods and suggest specific improvements to their methods. They draw simple conclusions that identify patterns or relationships evident in their data. They construct evidence-based arguments to support conclusions and support or dispute 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.

## Year 9

By the end of the year:

Students describe how plant and animal adaptations enable survival, and they respond to external temperature changes. They describe the impact of abiotic and biotic factors on population size and species diversity. They describe the structure of atoms and explain the arrangement of elements in the periodic table. They write chemical formulae to represent simple compounds and word equations for chemical reactions. They describe 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 for light and sound.

Students plan and conduct reproducible investigations to test or identify relationships and models. They follow risk assessments when conducting investigations. They select and use equipment to generate and record replicable data. They select and construct appropriate representations to organise, process and summarise data and information. They analyse data and information to describe patterns, relationships and anomalies. They describe sources of error in methods and suggest ways to improve the quality of their data. They draw conclusions that identify patterns or relationships evident in their data. They construct arguments based on analysis of a variety of evidence to support conclusions and support or dispute claims. They use content, language and text features to achieve their purpose when communicating their ideas, findings and arguments to specific audiences. They identify how advances in science, technologies and engineering are interconnected and describe how scientific responses are developed and can impact society.

## Year 10

By the end of the year:

Students describe the processes that underpin heredity and predict the outcome of autosomal dominant/recessive crosses. They describe the processes that underpin the theory of evolution by natural selection. They describe how the periodic table organises elements and use it to make predictions about types of bonding. 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 describe the benefits of space exploration. They recall Newton's laws of motion and apply them to predict motion of objects in a system. They describe the concept of energy conservation and represent energy transfer and transformation within systems.

Students plan and conduct valid and reproducible investigations to test or identify relationships and models. They follow risk assessments when conducting investigations. They select equipment and use it to generate and record appropriate sample sizes and replicable data. They select and construct appropriate representations to organise, process and summarise data and information. They analyse data and information to identify and describe patterns, relationships and anomalies. They describe the validity and reliability of methods and suggest ways to improve the quality of the data. They use evidence to draw conclusions that identify patterns or relationships evident in their data. They construct arguments based on analysis of a variety of evidence to support conclusions and support or dispute claims. They use content, language and text features effectively to achieve their purpose when communicating their ideas, findings and arguments to specific audiences. They describe how advances in science, technologies and engineering are interconnected and analyse scientific responses and how these responses impact society.