

Year 4 standard elaborations — Australian Curriculum v9.0: Science

Purpose

The standards elaborations (SEs) support teachers to connect curriculum to evidence in assessment so that students are assessed on what they have had the opportunity to learn. The SEs can be used to:

- make consistent and comparable judgments, on a five-point scale, about the evidence of learning in a folio of student work across a year/band
- develop task-specific standards (or marking guides) for individual assessment tasks
- quality assure planning documents to ensure coverage of the achievement standard across a year/band.

Structure

The SEs have been developed using the Australian Curriculum achievement standard. The achievement standard for Science describes what students are expected to know and be able to do at the end of each year. Teachers use the SEs during and at the end of a teaching period to make on-balance judgments about the qualities in student work that demonstrate the depth and breadth of their learning.

In Queensland, the achievement standard represents the C standard — a sound level of knowledge and understanding of the content, and application of skills. The SEs are presented in a matrix where the discernible differences and/or degrees of quality between each performance level are highlighted. Teachers match these discernible differences and/or degrees of quality to characteristics of student work to make judgments across a five-point scale.



Year 4 Australian Curriculum: Science achievement standard

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.

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.

Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), *Australian Curriculum Version 9.0 Science for Foundation–10*
<https://v9.australiancurriculum.edu.au/f-10-curriculum/learning-areas/science/year-4>

Year 4 Science standard elaborations

		A	B	C	D	E
		The folio of student work contains evidence of the following:				
Science understanding	Biological sciences	<ul style="list-style-type: none"> • thorough identification of the roles of organisms in a habitat • purposeful construction of food chains 	<ul style="list-style-type: none"> • detailed identification of the roles of organisms in a habitat • plausible construction of food chains 	<ul style="list-style-type: none"> • identification of the roles of organisms in a habitat • construction of food chains 	<ul style="list-style-type: none"> • guided identification of the roles of organisms in a habitat • guided construction of food chains 	<ul style="list-style-type: none"> • statement/s about organisms in a habitat • directed construction of food chains
	Earth and space sciences	<ul style="list-style-type: none"> • thorough identification of key processes in the water cycle • considered description of how water cycles through the environment 	<ul style="list-style-type: none"> • detailed identification of key processes in the water cycle • informed description of how water cycles through the environment 	<ul style="list-style-type: none"> • identification of key processes in the water cycle • description of how water cycles through the environment 	<ul style="list-style-type: none"> • guided identification of key processes in the water cycle • guided description of how water cycles through the environment 	<ul style="list-style-type: none"> • statement/s about water cycling through the environment

		A	B	C	D	E
	Physical sciences	<ul style="list-style-type: none"> • <u>thorough</u> identification of forces acting on objects • <u>thorough</u> description of the effect of forces acting on objects 	<ul style="list-style-type: none"> • <u>detailed</u> identification of forces acting on objects • <u>detailed</u> description of the effect of forces acting on objects 	<ul style="list-style-type: none"> • identification of forces acting on objects • description of the effect of forces acting on objects 	<ul style="list-style-type: none"> • <u>guided</u> identification of forces acting on objects • <u>guided</u> description of the effect of forces acting on objects 	<u>statement/s about</u> forces acting on objects
	Chemical sciences	<u>reasoned</u> relating of the uses of materials to their properties	<u>informed</u> relating of the uses of materials to their properties	relating the uses of materials to their properties	relating of the uses of materials to their properties, <u>with guidance</u>	<u>statement/s about</u> the properties of materials
Science as a human endeavour	Nature and development of science	<u>reasoned</u> explanation of the role of data in science inquiry	<u>informed</u> explanation of the role of data in science inquiry	explanation of the role of data in science inquiry	<u>description</u> of data in science inquiry	<u>identification</u> of data in science inquiry
	Use and influence of science	<ul style="list-style-type: none"> • <u>purposeful</u> identification of solutions based on scientific explanations • <u>considered</u> description of the needs the solutions meet 	<ul style="list-style-type: none"> • <u>informed</u> identification of solutions based on scientific explanations • <u>informed</u> description of the needs the solutions meet 	<ul style="list-style-type: none"> • identification of solutions based on scientific explanations • description of the needs the solutions meet 	<ul style="list-style-type: none"> • <u>guided</u> identification of solutions based on scientific explanations • <u>guided</u> description of the needs the solutions meet 	<u>statement/s about</u> solutions based on scientific explanations

		A	B	C	D	E
Science inquiry	Questioning and predicting	<ul style="list-style-type: none"> posing of reasoned questions to identify patterns and relationships reasoned predictions based on observations 	<ul style="list-style-type: none"> posing of plausible questions to identify patterns and relationships plausible predictions based on observations 	<ul style="list-style-type: none"> posing questions to identify patterns and relationships predictions based on observations 	<ul style="list-style-type: none"> posing of questions to identify patterns and relationships, with guidance guided predictions based on observations 	<ul style="list-style-type: none"> posing of questions to identify patterns and relationships, with direction directed predictions based on observations
	Planning and conducting	<ul style="list-style-type: none"> thorough planning of investigations using planning scaffolds reasoned identification of key elements of fair tests thorough description of how they conduct investigations safely 	<ul style="list-style-type: none"> plausible planning of investigations using planning scaffolds informed identification of key elements of fair tests informed description of how they conduct investigations safely 	<ul style="list-style-type: none"> planning of investigations using planning scaffolds identification of key elements of fair tests description of how they conduct investigations safely 	<ul style="list-style-type: none"> planning of investigations using planning scaffolds, with guidance guided identification of key elements of fair tests guided description of how they conduct investigations safely 	<ul style="list-style-type: none"> planning of investigations using planning scaffolds, with direction statement/s about fair tests statement/s about conducting investigations safely
		<p>purposeful use of simple procedures to make accurate formal measurements</p>	<p>effective use of simple procedures to make accurate formal measurements</p>	<p>use of simple procedures to make accurate formal measurements</p>	<p>guided use of simple procedures to make formal measurements</p>	<p>directed use of simple procedures to make formal measurements</p>
Processing, modelling and analysing	<ul style="list-style-type: none"> construction of representations for the purposeful organisation of data and information reasoned identification of patterns and relationships 	<ul style="list-style-type: none"> construction of representations for the effective organisation of data and information informed identification of patterns and relationships 	<ul style="list-style-type: none"> construction of representations for the organisation of data and information identification of patterns and relationships 	<ul style="list-style-type: none"> guided construction of representations for the organisation of data and information identification of patterns or relationships 	<ul style="list-style-type: none"> use of provided representations for the organisation of data and information statement/s about patterns or relationships 	

		A	B	C	D	E
	Evaluating	<ul style="list-style-type: none"> • thorough comparison of their findings with those of others • thorough assessment of the fairness of their investigation • reasoned identification of further questions for investigation • reasoned conclusions drawn 	<ul style="list-style-type: none"> • informed comparison of their findings with those of others • informed assessment of the fairness of their investigation • informed identification of further questions for investigation • plausible conclusions drawn 	<ul style="list-style-type: none"> • comparison of their findings with those of others • assessment of the fairness of their investigation • identification of further questions for investigation • conclusions drawn 	<ul style="list-style-type: none"> • guided comparison of their findings with those of others • guided assessment of the fairness of their investigation • guided identification of further questions for investigation • conclusions drawn, with guidance 	<ul style="list-style-type: none"> • directed comparison of their findings with those of others • statement/s about the fairness of their investigation • directed identification of further questions for investigation
	Communicating	considered communication of ideas and findings for an identified audience and purpose, including using scientific vocabulary when appropriate.	informed communication of ideas and findings for an identified audience and purpose, including using scientific vocabulary when appropriate.	communication of ideas and findings for an identified audience and purpose, including using scientific vocabulary when appropriate.	communication of ideas and findings for an identified audience or purpose using everyday vocabulary.	communication of ideas and findings using everyday vocabulary.

Key shading emphasises the **qualities that discriminate between the A–E descriptors**

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