

## 2026 Queensland Quantum Challenge - Curriculum Alignment to Australian Curriculum V9 - Science (Years 9 and 10)

The 2026 Queensland Quantum Challenge aligns to the Rationale and Aims for the Science curriculum, provided below.

[https://www.australiancurriculum.edu.au/f-10-curriculum/learning-areas/Science-7-10/year-9\\_year-10](https://www.australiancurriculum.edu.au/f-10-curriculum/learning-areas/Science-7-10/year-9_year-10)

### Rationale

Science is a dynamic, collaborative and creative human endeavour arising from our desire to make sense of our world. Through science, we explore the unknown, investigate universal phenomena, make predictions and solve problems. Science gives us an empirical way of answering curious and important questions about the changing world we live in. Science knowledge is revised, refined and extended as new evidence arises and has proven to be a reliable basis for action in our personal, social and economic lives.

The Australian Curriculum: Science enables students to develop an understanding of important science concepts and processes, the practices used to develop scientific knowledge, science's contribution to our culture and society, and its uses in our lives. It supports students to develop the scientific knowledge, understandings and skills needed to make informed decisions about local, national and global issues, and to succeed in science-related careers.

Also, learning science is a valuable pursuit in its own right. Students can experience the joy of scientific discovery. They can nurture their natural curiosity about the world around them.

In developing scientific literacy, students use critical and creative thinking skills, and challenge themselves to ask questions and draw evidence-based conclusions using scientific knowledge and practices. The wider benefits of scientific literacy include enabling students to engage meaningfully with contemporary issues, evaluate different points of view and make informed decisions.

Learning science is important for a diverse and capable science, technology, engineering and mathematics (STEM) workforce. Transdisciplinary STEM learning can enhance students' scientific and mathematical literacy, design and computational thinking, problem-solving and collaboration skills. Developing STEM competencies enables students to develop, model, analyse and improve solutions to real-world

problems, and supports students to access further study and a variety of careers and jobs within or outside of STEM fields.

### Aims

The Australian Curriculum: Science aims to ensure that students develop:

- an interest in science as a way of expanding their curiosity and willingness to explore, ask questions about and speculate on the changing world they live in
- a solid foundation of knowledge of the biological, Earth and space, physical and chemical sciences, including being able to select and integrate scientific knowledge and practices to explain and predict phenomena and to apply understanding to new situations and events
- an understanding of scientific inquiry and the ability to use a range of scientific inquiry practices, including questioning; planning and conducting experiments and investigations based on ethical and interculturally aware principles; generating and analysing data; evaluating results; and drawing critical, evidence-based conclusions
- an ability to communicate scientific understanding and findings to a range of audiences, to justify claims with evidence, and to evaluate and debate scientific explanations and arguments
- an ability to solve problems and make informed decisions about current and future uses of science while taking into account ethical, environmental, social and economic implications of decisions
- an understanding of the dynamic nature of science knowledge including historical and global contributions, and an understanding of the relationship between science and society including the diversity of science careers.

### Achievement Standard Aspects and Content Descriptions

The Achievement Standard Aspects and Content Descriptions included provide connections to domains where applications of quantum and advanced technologies are being harnessed to solve problems.

<b>Year 9 Science</b>	
<b>Achievement Standard Aspect</b>	<b>Content Descriptions</b>
<b>Science Understanding</b>	
explain how body systems provide a coordinated response to stimuli.	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 how interactions within and between Earth's spheres affect the carbon cycle.	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)
<b>Science as a Human Endeavour</b>	
explain the role of publication and peer review in the development of scientific knowledge and explain the relationship between science, technologies and engineering.	investigate how advances in technologies enable advances in science, and how science has contributed to developments in technologies and engineering (AC9S9H02)
analyse the different ways in which science and society are interconnected.	examine how the values and needs of society influence the focus of scientific research (AC9S9H04)
<b>Science Inquiry</b>	
select and construct appropriate representations to organise, process and summarise data and information.	select and construct appropriate representations, including tables, graphs, descriptive statistics, models and mathematical relationships, to organise and process data and information (AC9S9I04)
analyse the impact of assumptions and sources of error in methods and evaluate the validity of conclusions and claims.	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)
construct logical arguments based on evidence to support conclusions and evaluate claims.	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)
select and use content, language and text features effectively to achieve their purpose when communicating their ideas, findings	write and create texts to communicate ideas, findings and arguments effectively for identified purposes and audiences, including selection of appropriate content,

and arguments to specific audiences.	language and text features, using digital tools as appropriate (AC9S9I08)
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<b>Year 10 Science</b>	
<b>Achievement Standard Aspect</b>	<b>Content Descriptions</b>
<b>Science Understanding</b>	
describe trends in patterns of global climate change and identify causal factors.	use models of energy flow between the geosphere, biosphere, hydrosphere and atmosphere to explain patterns of global climate change (AC9S10U04)
<b>Science as a Human Endeavour</b>	
analyse the importance of publication and peer review in the development of scientific knowledge and analyse the relationship between science, technologies and engineering.	investigate how advances in technologies enable advances in science, and how science has contributed to developments in technologies and engineering (AC9S10H02)
analyse the key factors that influence interactions between science and society.	examine how the values and needs of society influence the focus of scientific research (AC9S10H04)
<b>Science Inquiry</b>	
select and construct effective representations to organise, process and summarise data and information.	select and construct appropriate representations, including tables, graphs, descriptive statistics, models and mathematical relationships, to organise and process data and information (AC9S10I04)
evaluate the validity and reproducibility of methods, and the validity of conclusions and claims.	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 (AC9S10I06)
construct logical arguments based on analysis of a variety of evidence	construct arguments based on analysis of a variety of evidence to support conclusions or evaluate claims, and consider any ethical issues and cultural protocols

to support conclusions and evaluate claims.	associated with accessing, using or citing secondary data or information (AC9S10I07)
select and use content, language and text features effectively to achieve their purpose when communicating their ideas, findings and arguments to diverse audiences.	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 (AC9S10I08)