

2026 Queensland Quantum Challenge - Curriculum Alignment to Australian Curriculum V9 – Agricultural Science (for Year 11)

The Agricultural Science Rationale is bolded where there is alignment to the 2026 Queensland Quantum Challenge. The Unit/Syllabus Objectives included provide connections to domains where applications of quantum and advanced technologies are being harnessed to solve problems.

Agricultural Science Rationale

Agricultural Science is an interdisciplinary science subject suited to students who are interested in the application of science in a real-world context. **They understand the importance of using science to predict possible effects of human and other activity, and to develop management plans or alternative technologies that minimise these effects and provide for a more sustainable future.** Agricultural Science provides students with a suite of skills and understandings that are valuable to a wide range of further study pathways and careers. A study of Agricultural Science can allow students to transfer learned skills to studies of other subject disciplines in the school environment.

The primary industries sector of the Australian economy is facing many challenges, and the ability of Australia to meet these challenges depends on a well-informed community and highly skilled people working in all sectors of primary industries.

Agricultural Science provides opportunities for students to engage with agricultural production systems as they constantly adapt to meet the changing needs of society. **As human activities and resource demands increase and diversify, agricultural scientists, managers and producers encounter opportunities and challenges associated with the sustainable management of resources and production of food and fibre. In Unit 1, students examine the plant and animal science required to understand agricultural systems, their interactions and their components. In Unit 2, students examine resources and their use and management in agricultural enterprises, the implications of using and consuming these resources, and associated management approaches.** In Unit 3, students investigate how agricultural production systems are managed through an understanding of plant and animal physiology, and how they can be manipulated to ensure productivity and sustainability. In Unit 4, students consider how environmental, social and financial factors can be used to evaluate production systems, and how research and innovation can be used and managed to improve food and fibre production.

Agricultural Science aims to develop students’:

- interest in Agricultural Science and their appreciation of how interdisciplinary knowledge can be used to understand contemporary issues in food and fibre production
- **understanding and appreciation of agriculture as a complex and innovative system, and how it relates to sustainable production decisions now and into the future**
- understanding that agricultural science knowledge is used in a variety of contexts and is influenced by social, economic, cultural and ethical considerations
- **ability to conduct a variety of field, research and laboratory investigations involving collection and analysis of qualitative and quantitative data, and interpretation of evidence**
- **ability to critically evaluate agricultural science concepts, interpretations, claims and conclusions, with reference to evidence**
- **ability to communicate understandings and justify findings and conclusions related to agricultural production systems, using appropriate representations, modes and genres.**

Senior Agricultural Science	
Unit / Syllabus Objectives	Subject Matter
Unit 1: Agricultural Systems	Science as a human endeavour (SHE) <ul style="list-style-type: none"> • Recognise that the use of digital tools (EBVs and molecular value predictions (MVPs)) has dramatically increased the size, accuracy and geographic scope of the genetic datasets that producers use.
Unit 2: Resources	Science as a human endeavour (SHE) <ul style="list-style-type: none"> • Recognise that the development of new sustainable farming systems or models requires a wide range of evidence from multiple sources such as the Department of Agriculture and Fisheries (DAF), Commonwealth Scientific and Industrial Research Organisation (CSIRO) and universities that carry out research and development in agricultural production.