Stage 5 – Agricultural technology – exploring agricultural issues

## Summary

The unit explores agricultural issues and provides students with the opportunity to develop an understanding of current topics faced in Australian agriculture that are considered socially or ethically debatable. The activities selected can be tailored to fit plant or animal enterprises of the student’s choice.

## Duration

2 weeks or 6 hours

## Outcomes

* **AG5-1** explains why identified plant species and animal breeds have been used in agricultural enterprises and developed for the Australian environment and/or markets
* **AG5-4** investigates and implements responsible production systems for plant and animal enterprises
* **AG5-8** evaluates the impact of past and current agricultural practices on agricultural sustainability
* **AG5-9** evaluates management practices in terms of profitability, technology, sustainability, social issues and ethics
* **AG5-12** collects and analyses agricultural data and communicates results using a range of technologies

[Agricultural Technology Years 7-10 Syllabus](https://educationstandards.nsw.edu.au/wps/portal/nesa/k-10/learning-areas/technologies/agricultural-technology-2019) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2019

## Unit overview

The aim of the Agricultural Technology Years 7-10 Syllabus is to actively engage students in learning about animal and plant production, enabling them to evaluate the interactions between plants, animals, technology, the economy and consumers.

Students will explore current trends in plant and animal production and investigate factors that are considered socially or ethically debatable. Students will use their understanding of agricultural practices to develop and present possible solutions to problems.

## Resources overview

The resources and links listed below are referenced within the program but is not an exhaustive list of resources available. Teachers can add to these resources as needed.

### Physical resources

* Computer with internet connectivity

### Websites

YouTube:

* [Greenpeace Australia pacific Genetic engineering in agriculture](https://www.youtube.com/watch?v=zcTNmCUMZ7c) (duration 3:45)
* [University of Guelph Enviropig](https://www.youtube.com/watch?v=mAfCauLF-14) (duration 6:57)

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| **Content** | **Teaching and learning** | **Evidence of learning** | **Adjustments and registration** |
| **Lesson 1**   * Evaluate the social and ethical issues that would be confronted in the chosen plant enterprise * Investigate the social and ethical issues that affect the chosen animal enterprises | **Students:**   * Research definitions and complete vocabulary table for terminology in student workbook. * Complete brainstorming activity listing concepts and words that they associate with biotechnology. * Watch the video clip on [Enviropig](https://www.youtube.com/watch?v=mAfCauLF-14) (duration 6:57) as an example of biotechnology. Complete the questions on the video clip. * Read the information about biotechnology in the workbook and create a definition in your own words. | * Students can articulate definitions for industry specific terminology. * Students will have demonstrated prior knowledge through completion of the brainstorm word association activity. Their conceptual understanding may have progressed after these activities and be evident when compared to their definition. * Students are able to explain the reasons why biotechnology is explored in agriculture through the analysis of the Enviropig resource. |  |
| **Lesson 2**   * Evaluate the social and ethical issues that would be confronted in the chosen plant enterprise * Investigate the social and ethical issues that affect the chosen animal enterprises | **Students:**   * Read information in workbooks about ethical concerns in agriculture. * Watch the video link showing one environmental rights groups views on biotechnology, [genetic engineering in agriculture](https://www.youtube.com/watch?v=zcTNmCUMZ7c) (duration 3:45). * Read the three articles about genetically modified sheep and answer the questions relating to the articles. * Research other examples of biotechnology in a range of agricultural enterprises. * Create a plus, minus, interesting (PMI) chart around the use of biotechnology in agriculture. | * Students can outline knowledge of current biotechnology developed across agricultural industries. * Students are able to participate in discussions involving a range of ethical issues relevant to biotechnology in the agricultural industry. |  |
| **Lesson 3**   * Evaluate the social and ethical issues that would be confronted in the chosen plant enterprise * Investigate the social and ethical issues that affect the chosen animal enterprises | **Students:**   * Design your own genetically engineered agricultural product that addresses an identified need in society or the environment. Describe the improvements to the original product and outline how and from what other organism it is being enhanced. * Create a promotional campaign to promote the product to society which alleviates any concerns that may be faced. | * Students can recognise real world problems that can be addressed using biotechnology. While appreciating the ethical concerns society may have about genetically engineered produce, they are able to promote the benefits of this product. |  |
| **Lesson 4**   * Research a range of current and future employment opportunities in agriculture. | **Students:**   * Research one career in agricultural biotechnology and complete the workbook questions. | * Students show understanding of higher education career pathways in agriculture through completion of activities. |  |
| **Lesson 5**   * Research and agricultural problem and develop possible solutions. * Research an agricultural issue relevant to the plant or animal enterprise chosen and propose possible solutions. | **Students:**   * Research an agricultural problem for an industry you are studying. Create a newspaper report outlining the issue to raise awareness amongst the community. * For the newspaper article completed above, create a promotional social media piece that generates interest in the story and persuades people to access the full story. | * Students demonstrate understanding of current agricultural problems faced by Australian farmers and how media can be used to generate public interest through completion of activities. |  |
| **Lesson 6**   * Research and agricultural problem and develop possible solutions. * Research an agricultural issue relevant to the plant or animal enterprise chosen and propose possible solutions. | **Students:**   * Brainstorm a range of possible solutions to the agricultural problem researched. * Expand on one of the solutions brainstormed in the previous activity. | * Students demonstrate prior understanding of agricultural technology and processes to formulate solutions to agricultural problems. |  |

## Evaluation

Evaluation of learning activities should be an ongoing process that happens throughout the delivery of this unit. Teachers should document their evaluation of learning activities throughout the program. The space provided below is to evaluate the overall unit of work.

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