

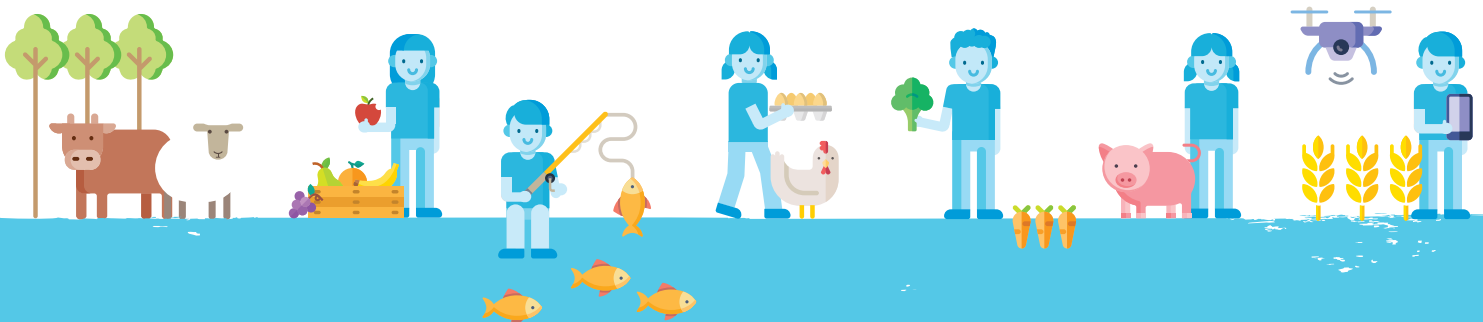


# Unit Overview:

## Tools and Technology Over Time

**Stage:** 3–4

This cross-curricular unit explores the tools and technologies utilised in modern and traditional food and fibre production. Throughout these lessons, students will investigate changes in agricultural practices over time and develop an understanding of the ways innovations in technology have improved productivity, efficiency, safety, and sustainably on farms. Students will apply science inquiry skills to pose questions, make observations, and collect data.

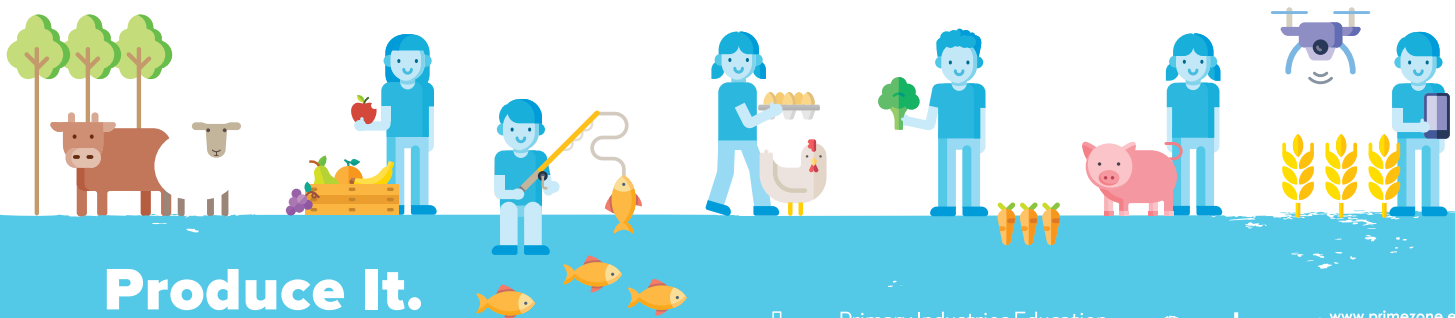


## ➤ **LESSON ONE: Agriculture, Then and Now** (90 minutes)

Throughout this lesson, students will investigate the tools and technologies used in food and fibre production, and the ways that agricultural practices have been influenced by technology over time. Students will have the opportunity to hear first-hand from Victorian producers and learn about how technological advances have made farm work safer, more efficient, easier and has allowed for greater accuracy. Students will apply their design skills to create their own rain gauge and will practice interpreting and representing data relating to rainfall in a region of Victoria.

## ➤ **LESSON TWO: Looking to the Future** (90 minutes)

Throughout this lesson, students will develop an understanding of the way robots are being used in agriculture to solve problems and make tasks more efficient. Through a guided investigation, students will have the opportunity to explore the many uses for robots in food and fibre production and will be challenged to think critically about the advantages and disadvantages this might pose for farmers. Students will work collaboratively to design and build a prototype of a robot to address a concern in agriculture, evaluating their design and reflecting on the design process.



# Curriculum Outcomes

## LESSON ONE

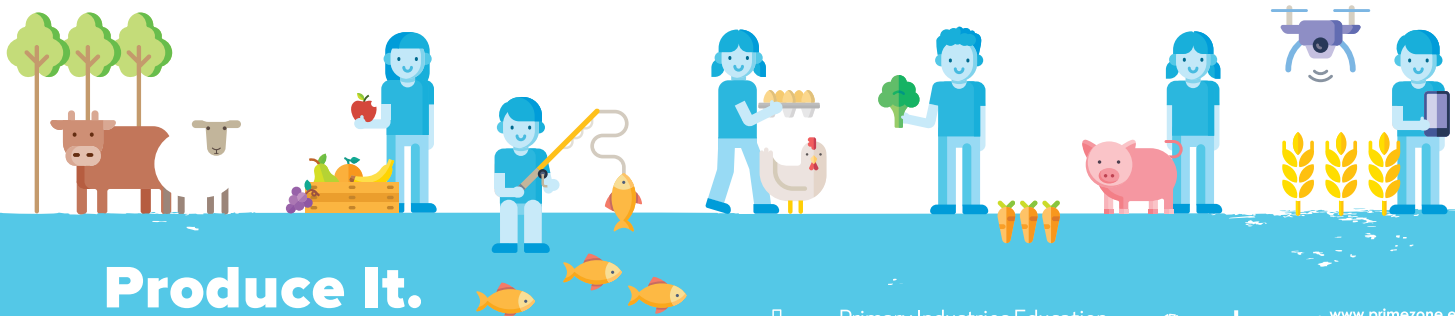
## Agriculture, Then and Now

### Victorian Curriculum Content Descriptors:

- Investigate food and fibre production used in modern or traditional societies (VCDSTC025)
- Measure, order and compare objects using familiar metric units of length, area, mass and capacity (VCMMG140)
- Use scaled instruments to measure and compare lengths, masses, capacities and temperatures (VCMMG165)
- Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies (VCMSP149)
- Interpret and compare data displays (VCMSP150)
- Construct suitable data displays, with and without the use of digital technologies, from given or collected data. Include tables, column graphs and picture graphs where one picture can represent many data values (VCMSP179)
- Evaluate the effectiveness of different displays in illustrating data features including variability (VCMSP180)
- Safely use appropriate materials, tools, equipment and technologies (VCSIS067)
- Use formal measurements in the collection and recording of observations (VCSIS068)
- Use a range of methods including tables and column graphs to represent data and to identify patterns and trends (VCSIS069)

### Australian Curriculum Content Descriptors:

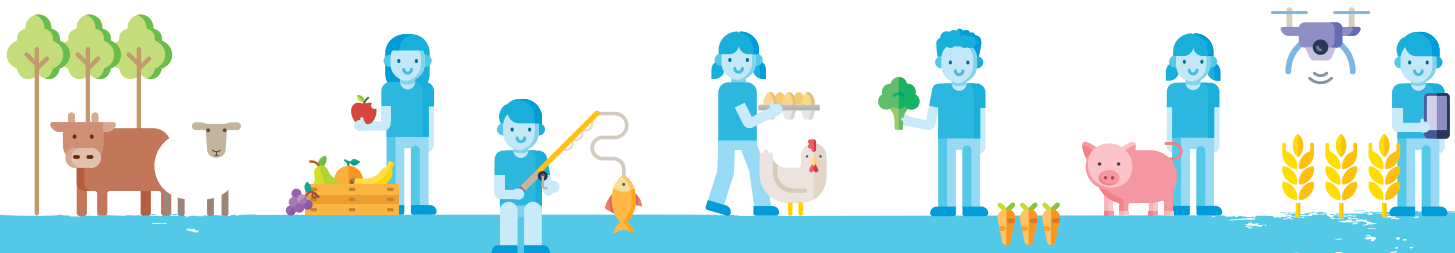
- Investigate food and fibre production and food technologies used in modern and traditional societies (ACTDEK012)
- Measure, order and compare objects using familiar metric units of length, mass and capacity (ACMMG061)
- Use scaled instruments to measure and compare lengths, masses, capacities and temperatures (ACMMG084)
- Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies (ACMSP069)
- Interpret and compare data displays (ACMSP070)
- Construct suitable data displays, with and without the use of digital technologies, from given or collected data. Include tables, column graphs and picture graphs where one picture can represent many data values (ACMSP096)
- Evaluate the effectiveness of different displays in illustrating data features including variability (ACMSP097)
- Represent and communicate observations, ideas and findings using formal and informal representations (ACSIS060)
- Represent and communicate observations, ideas and findings using formal and informal representations (ACSIS071)
- Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (ACSIS057)
- Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (ACSIS068)



**LESSON TWO**

**Looking to the Future**

Victorian Curriculum Content Descriptors:	Australian Curriculum Content Descriptors:
<ul style="list-style-type: none"> <li>Investigate food and fibre production used in modern or traditional societies (VCDSTC025)</li> <li>Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes (VCDSTC027)</li> <li>Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to create designed solutions (VCDSCD028)</li> <li>Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques (VCDSCD029)</li> <li>Select and use materials, components, tools and equipment using safe work practices to produce designed solutions (VCDSCD030)</li> <li>Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment and communities (VCDSCD031)</li> <li>Explain how student-developed solutions and existing information systems meet common personal, school or community needs (VCDTCD025)</li> <li>Listen to and contribute to conversations and discussions to share information and ideas and negotiate in collaborative situations and use interaction skills, including active listening and clear, coherent communications (VCELY275)</li> <li>Interpret ideas and information in spoken texts and listen for key points in order to carry out tasks and use information to share and extend ideas and use interaction skills (VCELY307)</li> </ul>	<ul style="list-style-type: none"> <li>Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended designed solutions (ACTDEP024)</li> <li>Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques (ACTDEP025)</li> <li>Select appropriate materials, components, tools, equipment and techniques to make designed solutions and apply safe procedures (ACTDEP026)</li> <li>Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions (ACTDEP027)</li> <li>Investigate how and why food and fibre are produced in managed environments and prepared to enable people to grow and be healthy (ACTDEK021)</li> <li>Participate in and contribute to discussions, clarifying and interrogating ideas, developing and supporting arguments, sharing and evaluating information, experiences and opinions (ACELY1709)</li> <li>Clarify understanding of content as it unfolds in formal and informal situations, connecting ideas to students' own experiences and present and justify a point of view (ACELY1699)</li> <li>Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE100)</li> <li>Living things have structural features and adaptations that help them to survive in their environment (ACSSU043)</li> </ul>



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Protect It.**  
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# Primezone Resources

Many of the resources found within these units are also available for access on:



## VICTORIAN KIDS TO FARM CONTACTS:

For more information regarding current programs focused on food and fibre education, contact the staff below. Victorian Education Officers are able to assist you with:

- Programming and curriculum development
- Lesson planning
- Incursions
- Resource development
- Conducting professional development at your school
- Contacting enterprises of interest
- Organising personal VIC Farmer Time sessions

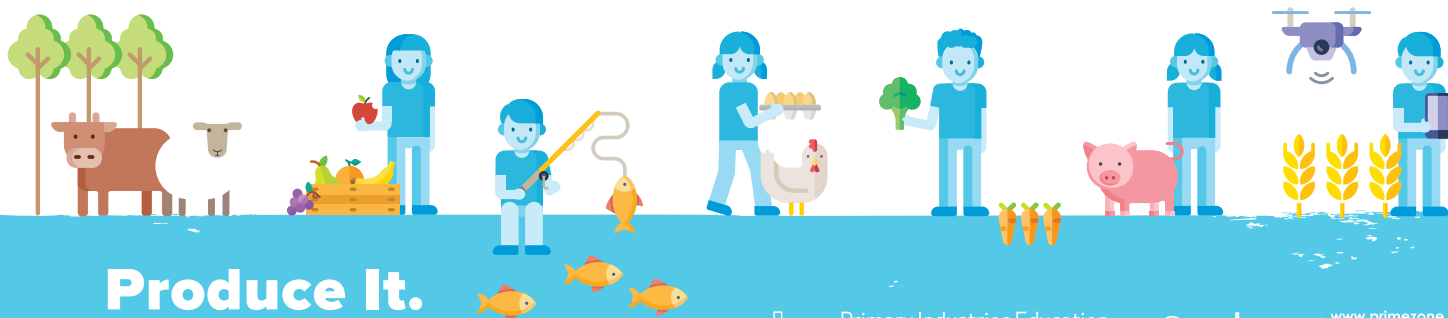
**Jayne Johns**

Email: [Jayne.johns@piefa.edu.au](mailto:Jayne.johns@piefa.edu.au)

Mobile: 0483 870 277

## SHARE YOUR LEARNING:

The Produce It. Protect It. Team would love to hear about your engagement in food and fibre education. Contact us to share photos, samples of work, videos or any evidence of your learning. Victorian Education Officers have some great incentives to send you and your students for sharing any work with us. This will help to spread the word and encourage other educators to get involved in teaching primary school students about the importance of food and fibre and how crucial Australian Agriculture is to their futures.



**Produce It.  
Protect It.**  
VIC FarmerTime

Primary Industries Education  
Foundation Australia 

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The place for all your food and fibre resources