



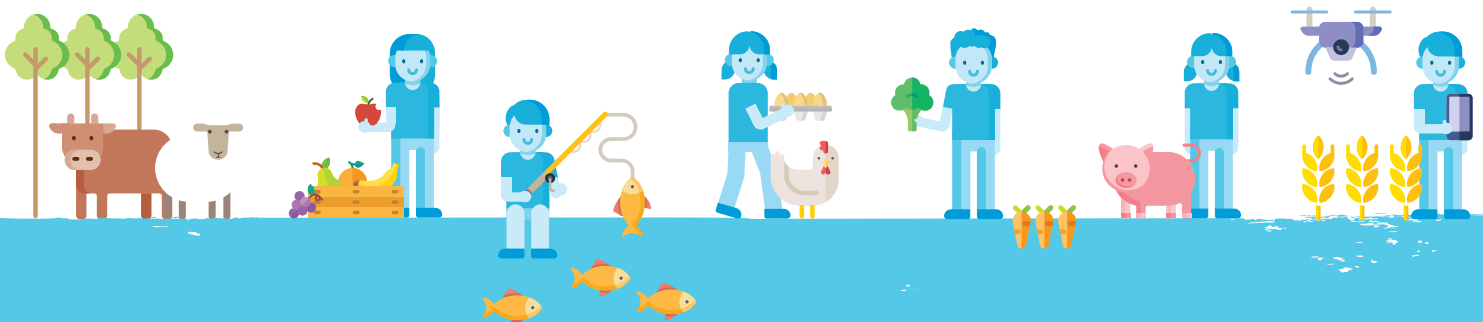
Sustainable Solutions on Farms

Level: 5/6

Lesson Two: VIC Farmer Time – Agroforestry
and Sustainable Solutions for Design

Time: Approx. 120 mins

Key Vocabulary: Agroforestry, system, sustainability, biodiversity, erosion, salinity, opaque, durable, biodegradable, renewable, non-renewable.



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› Lesson Overview:

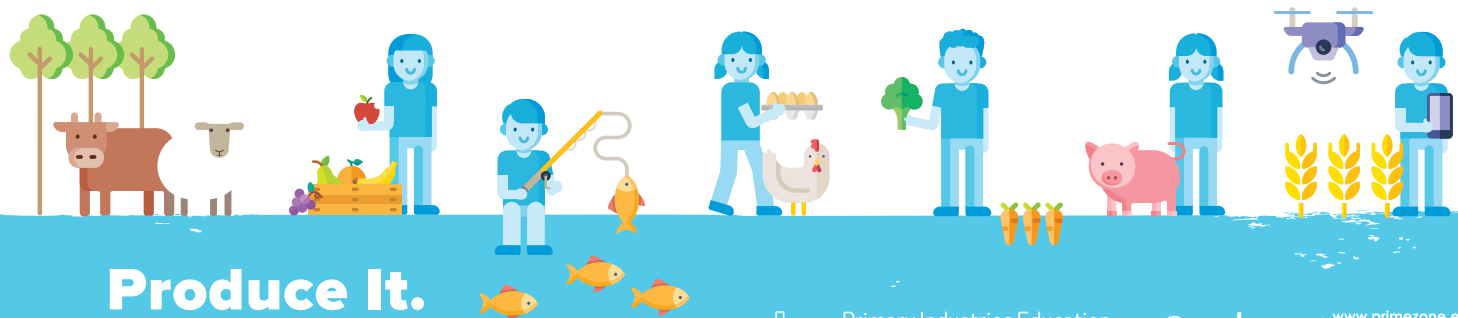
Students will have the opportunity to hear from two Victorian producers about the operations that occur on their sheep and agroforestry farm. Students will learn about agroforestry as a solution to supporting sustainability in agriculture and develop an understanding of interdependence within a farming system. Students will apply their design skills when creating their own farm logo and will work collaboratively to explore the ways materials from trees can be used as sustainable alternatives for design by creating a prototype of a toy using materials from trees.

› Students Will Learn To:

- Identify important features of the producer's farm.
- Understand how different food and fibre is produced by listening to an explanation by primary producers.
- Investigate the benefits of agroforestry in a farm system.
- Explore how materials from trees can be used to provide sustainable solutions for design.

› Victorian Curriculum Outcomes:

VCDSCD038, VCDSCD039, VCDSCD040, VCDSCD041, VCDSTC035, VCELY366, VCELY337, VCSSU073, VCSSU074, VCSSU075



Learning Tasks

ACTIVITY ONE

Introduction to Agroforestry (10 mins)

This activity is designed to capture the interest of students and assess their prior knowledge about trees and forestry.

- a) The teacher will show students the shortened version of the *What is #Agroforestry?* video.

URL: <https://www.veed.io/download/638c7188-7a14-4e4c-976f-92dce91ed978>



ORIGINAL SOURCE: Full length video can be accessed via the source: *What is #Agroforestry?* YouTube, RUVIVAL, 2017 (3:08)

URL: https://www.youtube.com/watch?v=R4M_9GxY5ZI&t=8s

- b) The teacher will draw a large tree (without leaves) on the class whiteboard or on an anchor chart, with the following question on its trunk:
- What are the benefits of planting trees to: farmers, livestock and the ecosystem?
- c) The teacher will provide each student with a green sticky note. Students will record their answer to the question on their sticky note, and then stick it on one of the tree branches.

(The teacher may wish to provide some of the following examples should students require support in answering the question: trees provide shade and shelter for stock; trees can provide another source of income for farmers through timber production).

- d) The teacher will ask students to return to the floor or their tables, selecting some students to share their responses to the question.



ACTIVITY TWO

VIC Farmer Time (15 mins)

During this activity, students will hear from two Victorian farmers about how the introduction of agroforestry into their farming system has improved biodiversity, addressed environmental concerns, such as erosion and salinity, and provided benefits for the stock on their farm.

All *VIC Farmer Time* talks are recorded by Victorian Education Officers and made available to teachers at <https://www.primezone.edu.au/vicfarmertime/>.

FOR INFORMATION: If teachers would like to engage in a one-on-one zoom call with a farmer for a question-and-answer session, they should contact the Victorian Education Officers:

Jayne Johns

Email: Jayne.johns@piefa.edu.au

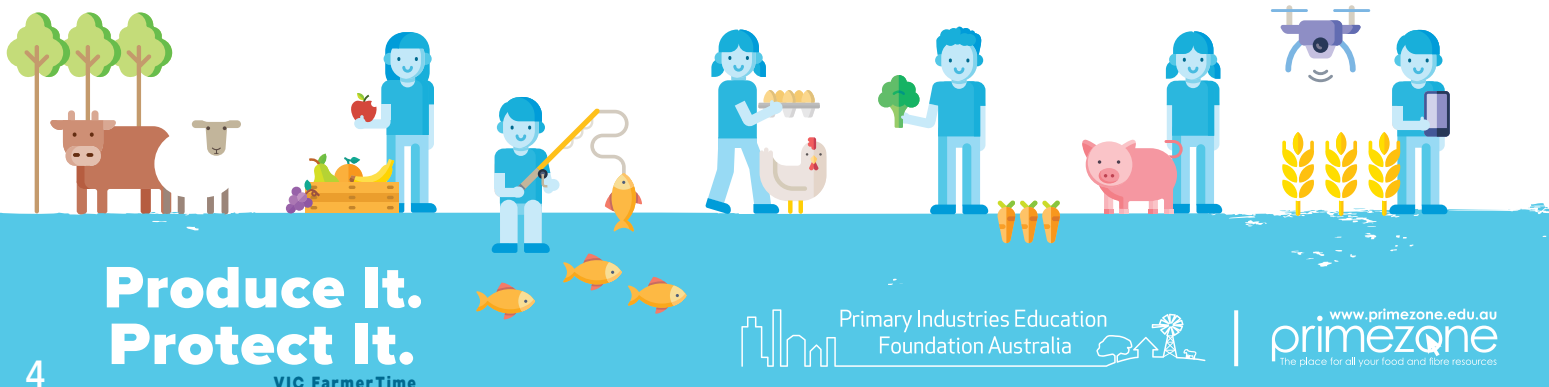
Mobile: 0483 870 277

Allison Arnott

Email: Allison.arnott@piefa.edu.au

Mobile: 0483 869 592

- The teacher will explain that students will be watching a short video of two Victorian farmers talking about life on their farm. The teacher will show students the [Map of Victoria, \(2.1\)](#) highlighting where Yan Yan Gurt West farm is located and who the traditional owners of this land are.
- The teacher will draw another large tree (without leaves) on the whiteboard or on an anchor chart. This time with the following question recorded on the trunk of the tree:
 - What stuck with you from the *VIC Farmer Time* session?
- The teacher will explain that students will be answering this question at the end of the video, and students should listen for any new or interesting information that they hear during the session.
- The teacher will play the recording of the [VIC Farmer Time – Agroforestry, \(Hannah and Kristy Stewart\) session](#).
- The teacher will record notes on the board or an anchor chart during the session as a prompt for students when recalling what stuck with them.



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- f) At the end of the video, the teacher will ask students to turn and talk to the person next to them to answer the question:
- What stuck with you from the *VIC Farmer Time* session?
- g) Students should be encouraged to consider any information they found interesting or any questions they now have after watching the recording.
- h) The teacher will provide each student with another green sticky note for them to record their answer to the question.
- i) The teacher will ask students to share some of their answers before moving to their desks to record their responses onto the green sticky notes provided.
- j) When finished recording their answers, students will display their sticky notes on the second tree: 'What stuck with you from the VIC Farmer Time session?'.

➤ ACTIVITY AT A GLANCE:



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ACTIVITY THREE

Design Your Own Farm Logo (15 mins)

This activity is designed to allow students to respond to the VIC Farmer Time session and prompt student thinking about interdependence within farming systems.

- The teacher will locate 3.00sec of the [VIC Farmer Time – Agroforestry, video](#) and pause on the still shot of the Yan Yan Gurt West Farm logo, displaying this for students to observe.
- The teacher will ask students to reflect on what they can see in the logo and what Hannah and Kristy spoke about when discussing their logo. The teacher will ask students the following questions:
 - What can you see in the logo?
 - What were some of the things Hannah and Kristy highlighted about their farm logo?
 - What do each of the pictures in the logo represent about Yan Yan Gurt West Farm?
- The teacher will explain that during this task, students will be designing their own farm logo.
- The teacher will show students an array of food and fibre samples along with fruit, vegetables and wood products.

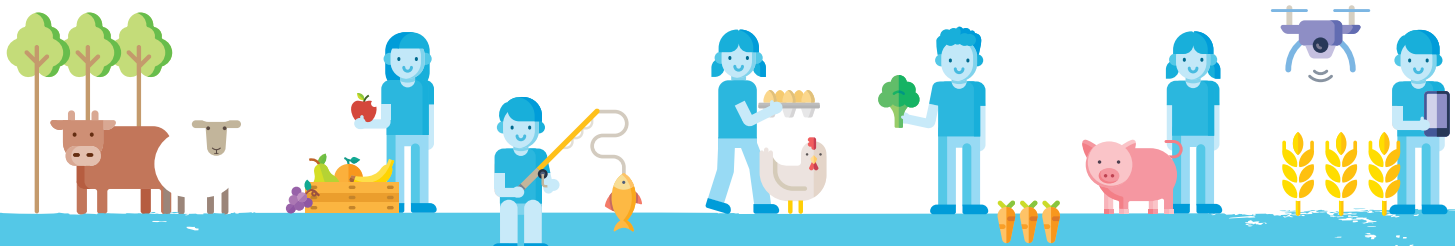
EXAMPLES OF RESOURCE SAMPLES:



i FOR INFORMATION regarding ordering resources contact:

Allison Arnott

Email: Allison.arnott@piefa.edu.au



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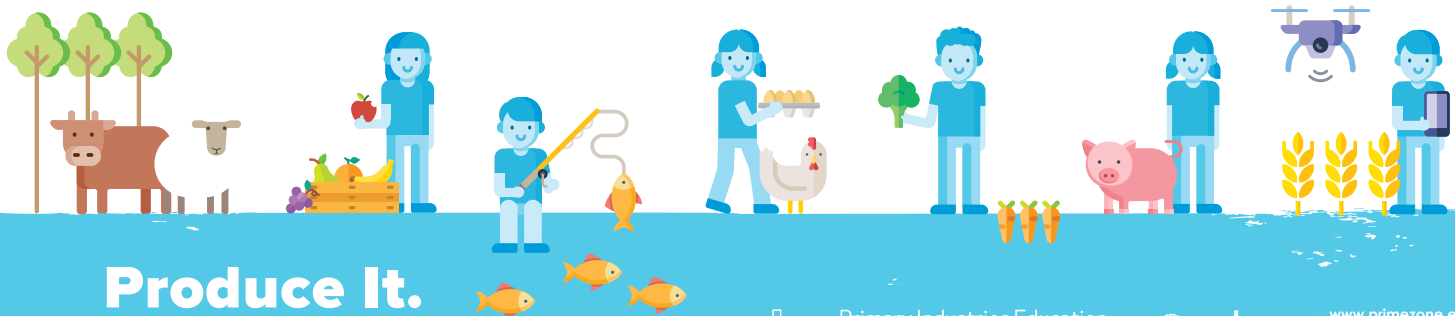
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- e) The teacher will explain that students must create a name for their farm, choose two forms of food or fibre that are produced on the farm, and explain how those plants and animals are interdependent within their farming system.

(e.g. sheep for meat production on Yan Yan Gurt West farm rely on the trees used for timber production for shade and shelter. The trees rely on the sheep for soil fertiliser).

- f) The teacher will model creating a logo for a farm, highlighting the different types of production on the farm. (Support for students with their logos can be provided using the [Design Your Own Logo, stimulus \(3.1\)](#)).

- g) The teacher will provide students with the [Design Your Own Farm Logo, worksheet \(3.2\)](#) and they will move to their tables to complete the activity.



ACTIVITY FOUR

Wood as a Renewable Resource (15 mins)

This activity is designed to prompt student thinking about the ways natural fibres, such as wood, can be used as an alternative to non-renewable materials, such as plastic, for production.

- The teacher will display the first slide of the [Materials from Trees, presentation \(4.1\)](#) on the interactive white board or projector. Alternatively, the teacher may wish to print stimulus for students to observe.
- The teacher will ask students to consider what all of these products have in common.
- The teacher will ask students to share their ideas about what each of these products may have in common. The teacher will reveal that each of these items are made from materials sourced from trees.
- The teacher will explain that objects are made from materials that have particular properties to suit their purpose. They will explain that some materials are more environmentally friendly than others, such as natural materials like wood, cotton and bamboo. Other materials are less sustainable as they are made from non-renewable resources, including fossil fuels, and cannot break down naturally so will likely become landfill, such as plastic and polyester.
- The teacher will show students the following video: *How Wood is Good: An Animated Story*, Veed (0.54).

URL: <https://www.veed.io/download/4f32f0b1-2948-4f5c-bff3-9b533020b22e>



ORIGINAL SOURCE: *How Wood is Good: An Animated story*. YouTube, GreenTV, 2016 (1.43)

URL: <https://www.youtube.com/watch?v=FcRc3F13hXc>

- The teacher will ask students to talk to the person sitting next to them to consider what some of the properties of wood and tree products might be and what the benefits of using these materials for design could be.

(Some of the properties of wood include: Strong, renewable, biodegradable, opaque, pliable).

- The teacher will ask students to discuss how materials from trees might be used as a sustainable solution to building and designing everyday products.



ACTIVITY FIVE

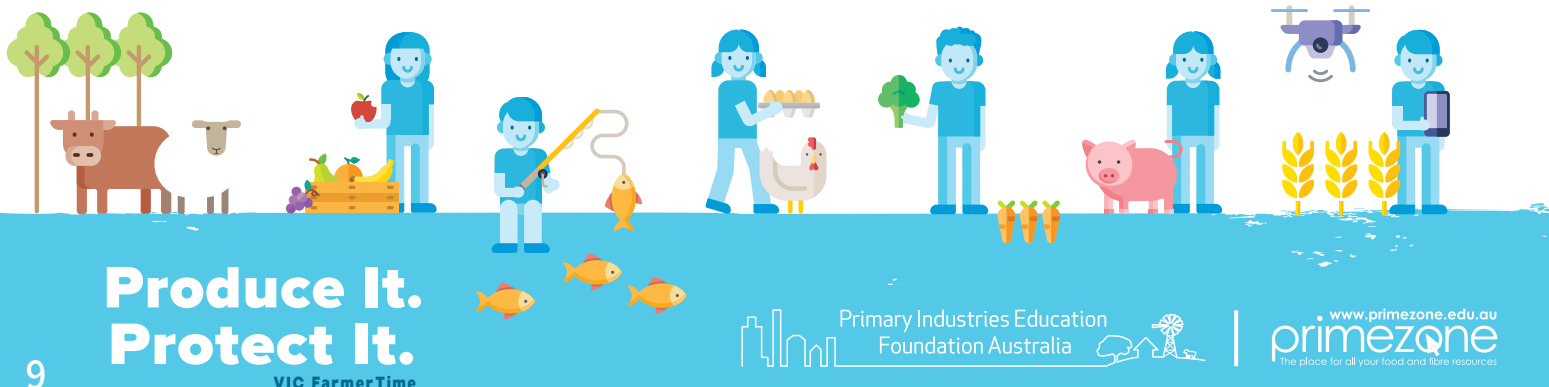
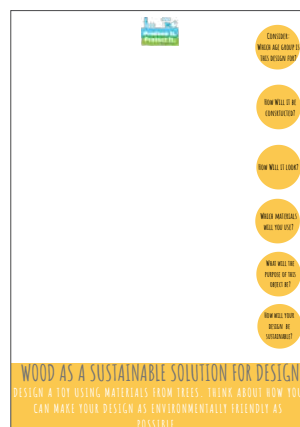
Sustainable Fibres for Design (50 mins)

This activity is designed to investigate the suitability of materials from trees for design. During this activity, students will be designing and creating a prototype of an environmentally friendly toy. Students will work in pairs to apply safe procedures when using a variety of materials and components to produce designed solutions.

- The teacher will show students slide six of the [Materials from Trees, presentation](#) and explain that during this task, they will be challenged to design a sustainable toy using materials from trees.
- In pairs, students will be asked to design and build a toy that is more environmentally friendly than a plastic toy, using materials from trees. The teacher will remind students that these materials can include: paper, cardboard, cork, balsa wood, popsicle sticks, twigs and other tree matter.
- The teacher will divide students into pairs and provide each pair with the [Design Template, worksheet \(5.1\)](#) to complete, labelling the specific parts of their design and noting which tree products they have used in their design. The teacher will explain that students will use their design to create a prototype of their toy.
- When finished their design template, students will collect the materials needed for their design and begin to build their prototype.

(It is suggested that teachers should have each of the materials needed for the design challenge prepared prior to the session and placed on a bench or on the floor in an area that is easily accessible for students during this task.)

➤ ACTIVITY AT A GLANCE:



ACTIVITY SIX

Presenting the Designs (15 mins)

During this activity, pairs will present their toy to the rest of the class, reflecting on the design process, the criteria of the design challenge, and any possible areas for improvement.

- a) Upon completing their prototypes, the teacher will ask each pair of students to present their design and prototype to the rest of the class.
- b) During their presentation, the teacher will ask pairs to explain:
 - How the materials they have selected have made their item more sustainable than then initial object?
 - What the properties of the materials they have selected are?
 - How could their design be modified or improved if they were to make it again or have different materials to choose from?

Upon completion of this Produce it. Protect it. Unit, each student will receive a certificate of completion.

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