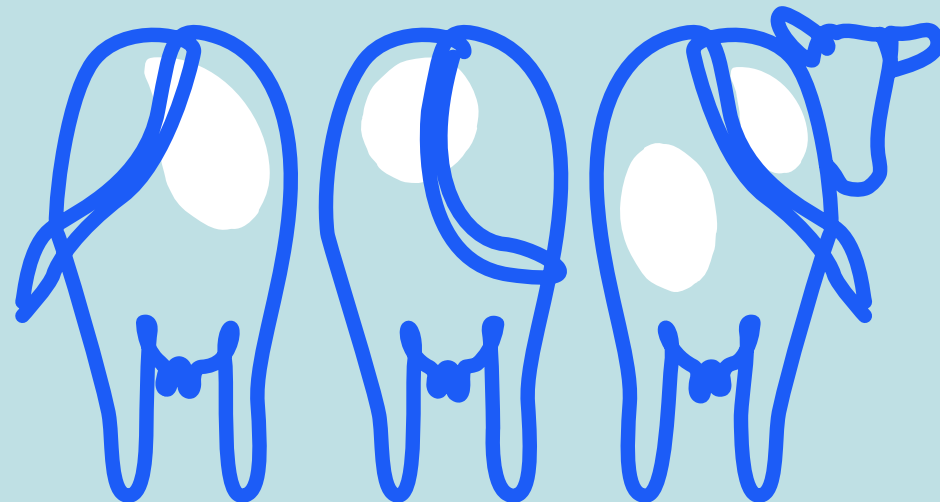
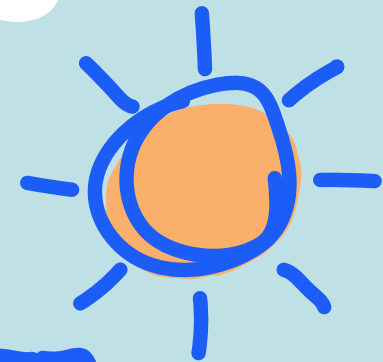


An educational
resource for
**Years
7-8**

Sustainable Dairy

Caring for animals on dairy farms

Interactive Presentation
Stage 4 – Years 7 & 8



Sustainable Dairy

Caring for animals on dairy farms



Background for teachers

This interactive slideshow is for Year 7 and 8 students investigating food and fibre production in Australia. It has direct curriculum links to Design and Technologies.

The slideshow features videos, texts and activities introducing students to the basics of dairy production and animal welfare on Australian dairy farms. Students will be challenged to think creatively about how animal welfare is supported on Australian dairy farms, and how we can communicate the importance of maintaining high standards of animal care.

This resource contains a basic glossary, quiz and discussion questions, creative and design challenges, and student-led extension tasks. We encourage you to adapt these activities to suit your individual students and learning environments.

Assessment

- Monitoring understanding in class discussions
- Informal formative assessment questions
- Collecting work samples
- Student self-assessment
- Peer assessment
- Teacher feedback

Differentiation

- **Support:** Some learning, assessment and research is conducted as a whole class.
- **Structured:** Use small group instruction to refine and redirect research and group projects.
- **Extension:** Student led independent learning and extension tasks are provided.

Connecting Home & School

Encourage students to deepen their understanding of these issues by extending class discussions into their homes. Invite students to share their families' unique perspectives.

The student-led extension tasks at the end of this presentation can be set as independent or at-home learning.

Curriculum Links

Australian Curriculum



	Year 7	Year 8
Design and Technologies	Analyse how people in design and technologies occupations consider ethical and sustainability factors to design and produce products, services and environments. AC9TDE8K01	
	Analyse the impact of innovation and the development of technologies on designed solutions for global preferred futures. AC9TDE8K02	
	Analyse how food and fibre are produced in managed environments and how these can become sustainable. AC9TDE8K04	
	Analyse how characteristics and properties of materials, systems, components, tools and equipment can be combined to create designed solutions. AC9TDE8K06	
English	Analyse needs or opportunities for designing, and investigate and select materials, components, tools, equipment and processes to create designed solutions. AC9TDE8P01	
	Use interaction skills when discussing and presenting ideas and information including evaluations of the features of spoken texts. AC9E7LY02	Use interaction skills for identified purposes and situations, including when supporting or challenging the stated or implied meanings of spoken texts in presentations or discussion. AC9E8LY02
Cross-Curriculum Priority: Sustainability	Plan, create, rehearse and deliver presentations for purposes and audiences in ways that may be imaginative, reflective, informative, persuasive and/or analytical, by selecting text structures, language features, literary devices and visual features, and using features of voice including volume, tone, pitch and pace. AC9E7LY07	Plan, create, rehearse and deliver spoken and multimodal presentations for audiences and purposes, selecting language features, literary devices, visual features and features of voice to suit formal or informal situations, and organising and developing ideas in texts in ways that may be imaginative, reflective, informative, persuasive and/or analytical. AC9E8LY07
	Sustainable patterns of living require the responsible use of resources, maintenance of clean air, water and soils, and preservation or restoration of healthy environments. SS2	
	World views are formed by experiences at personal, local, national and global levels, and are linked to individual, community, business and political actions for sustainability. SW2	
	Sustainably designed products, environments and services aim to minimise the impact on or restore the quality and diversity of environmental, social and economic systems. SD1	
	Creative and innovative design is integral to the identification of new ways of sustainable living. SD2	
	Sustainable futures are achieved through informed individual, community, business and political action that values local, national and global equity and fairness across generations into the future. SF1	

Glossary

Important dairy words



Let's brush-up on the basics of dairy production and farm management. First, let's revise a few important words related to dairy production.

Match the word on the left with its definition on the right. The definitions are jumbled. You can complete this task on your own, in pairs, or as a game with the whole class. The answers are on the next slide.

Dairy Words

1 cows

2 heifers

3 calf / calves

4 Holstein

5 animal welfare

Meaning

A The most popular breed of dairy cow in Australia. They are mainly black and white.

B Female cattle. They give birth to calves and produce milk. Most of the cattle in a dairy herd are cows.

C Supporting animals, such as dairy cattle, to make sure they are physically and psychologically healthy.

D Young female cattle. They are the 'teenagers' of the herd and haven't had a calf or have had one calf only.

E Baby cattle. Female calves grow into heifers and then milking cows. Male calves may be sold for veal production or raised to become breeding bulls.

Glossary

Important dairy words



Answer

1 cows

B Female cattle. They give birth to calves and produce milk. Most of the cattle in a dairy herd are cows.

2 heifers

D Young female cattle. They are the 'teenagers' of the herd and haven't had a calf or have had one calf only.

3 calf / calves

E Baby cattle. Female calves grow into heifers and then milking cows. Male calves may be sold for veal production or raised to become breeding bulls.

4 Holstein

A The most popular breed of dairy cow in Australia. They are mainly black and white.

5 animal welfare

C Supporting animals, such as dairy cattle, to make sure they are physically and psychologically healthy.

Video Introduction

Introduction to dairy processes

These brief videos show how milk is produced on Aussie dairy farms.
Pay close attention as you watch the videos, they are followed by a quick quiz!

If you have time, watch the 'Farm to Plate' interactive and 'Everything You Need To Know About Dairy' video (24 minutes). These provide a more in-depth look at Aussie dairy farming, including how milk is processed into other dairy foods and how dairy foods get from the farm to our fridges.

How do cows make milk?

[youtube.com/
watch?v=crDLIQU5Kdw](https://youtube.com/watch?v=crDLIQU5Kdw)

When do cows make milk?

[youtube.com/watch?v=
atch?v=HTWGGyVcYKw
sBPIfb9W3K4&t=4s](https://youtube.com/watch?v=HTWGGyVcYKwsBPIfb9W3K4&t=4s)

Milking time on the farm

[youtube.com/
watch?v=HTWGGyVcYKw](https://youtube.com/watch?v=HTWGGyVcYKwsBPIfb9W3K4&t=4s)

Farm to plate Interactive

[dairy.edu.au/discover-
dairy-farm-to-plate](https://dairy.edu.au/discover-dairy-farm-to-plate)

Everything you need to know about dairy

[youtube.com/
watch?v=v48PgjwcoOs](https://youtube.com/watch?v=v48PgjwcoOs)

Quick quiz

Introduction to dairy processes



Answer the questions based on the video content. The correct answer is on the next slide.

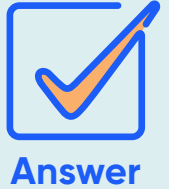
Question 1 Multiple Choice

When does
a cow start
to produce milk?

- a After her first calf is born
- b Around 2 years old
- c After 9 months of pregnancy
- d All of the above

Quick quiz

Introduction to dairy processes



Answer the questions based on the video content. The correct answer is on the next slide.

Question 1 Multiple Choice

When does a cow start to produce milk?

- a After her first calf is born
- b Around 2 years old
- c After 9 months of pregnancy
- d All of the above**

A cow usually has her first calf at around two years of age. A cow's pregnancy is about 9 months - the same length as a human's. Once they have given birth, cows will continue to produce milk for as long as their calf feeds from them, or for as long as they are milked at the dairy.

Quick quiz

Introduction to dairy processes



Answer the questions based on the video content. The correct answer is on the next slide.

Question 2 True or False?

**Cows are fed
at milking time.**

True

False

Quick quiz

Introduction to dairy processes



Answer

Answer the questions based on the video content. The correct answer is on the next slide.

Question 2 True or False?

**Cows are fed
at milking time.**

True

False

Studies have shown that feeding cows at milking time has a calming effect on them and helps them to produce more milk.

Quick quiz

Introduction to dairy processes



Answer the questions based on the video content. The correct answer is on the next slide.

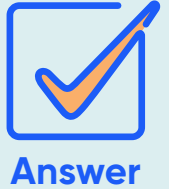
Question 3 Multiple Choice

How soon after being born are calves separated from their mothers?

- a Immediately
- b Within 6 hours of being born
- c Within 12 hours of being born
- d This rarely occurs

Quick quiz

Introduction to dairy processes



Answer the questions based on the video content. The correct answer is on the next slide.

Question 3 Multiple Choice

How soon after being born are calves separated from their mothers?

- a Immediately
- b Within 6 hours of being born
- c Within 12 hours of being born**
- d This rarely occurs

Researchers have found that separating the calves before they are 24 hours old creates less stress for the animals. Calves are then moved to a protected nursery shed where they attach to each other and show minimal signs of distress.

Quick quiz

Introduction to dairy processes



Answer the questions based on the video content. The correct answer is on the next slide.

Question 4 Match each question with the correct answer

Questions

1 What does a cow's udder do?

2 How much milk can a healthy cow produce each day?

3 A rotary is a continuously rotating platform on which cows are milked. What are the benefits of a rotary?

4 At milking time, how do the suction cups placed on a cow's teats mimic the feeding of a calf?

Answers

A Depending on the breed, a cow can produce about 25-40 litres of milk each day.

B The milk is sucked out in gentle pulses.

C This is where cow's milk is made and stored. When a cow is milked, the milk is squeezed from her four teats.

D It allows the cows to calmly move through the milking shed with minimal handling.

Quick quiz

Introduction to dairy processes



Answer

Answer the questions based on the video content. The correct answer is on the next slide.

Chew the cud!

Discuss with your partner: What is something new you have learned about dairy production? What would you still like to know?

Question 4 Match each question with the correct answer

Questions

- 1 What does a cow's udder do?
- 2 How much milk can a healthy cow produce each day?
- 3 A rotary is a continuously rotating platform on which cows are milked. What are the benefits of a rotary?
- 4 At milking time, how do the suction cups placed on a cow's teats mimic the feeding of a calf?

Answers

- C This is where cow's milk is made and stored. When a cow is milked, the milk is squeezed from her four teats.
- A Depending on the breed, a cow can produce about 25-40 litres of milk each day.
- D It allows the cows to calmly move through the milking shed with minimal handling.
- B The milk is sucked out in gentle pulses.

Animal Welfare

How Dairy Farmers Care For Their Cows

The video below explains how Aussie dairy farmers care for cows on their farms. A healthy herd is of great importance to dairy farmers, so they closely monitor the health of their cows. Not only do all animals deserve to feel safe and protected, but happy, healthy cows produce better milk in larger volumes.

Copy the table on the next slide and complete it as you watch the video. For each feature, write brief notes outlining how Aussie dairy farmers look after the welfare of their cows. You may need to pause the video, or watch it more than once to ensure you get all the answers.

How dairy farmers care for their cows

[youtube.com/
watch?v=onFy4VGr0NA](https://www.youtube.com/watch?v=onFy4VGr0NA)

Animal welfare

How Dairy Farmers Care For Their Cows



Feature	How Aussie Dairy Farmers Care For Their Cows
Milking shed	
Paddocks	
Hygiene	
Water	
Health checks	

Animal welfare

How Dairy Farmers Care For Their Cows



Answer

Feature	How Aussie Dairy Farmers Care For Their Cows
Milking shed	<ul style="list-style-type: none">• A familiar and safe place for cows• Food is provided
Paddocks	<ul style="list-style-type: none">• Cattle are rotated through different paddocks to provide fresh, new pastures• Shade / shelter
Hygiene	<ul style="list-style-type: none">• Each cow's teats are washed twice a day before milking• Milking sheds are washed regularly
Water	<ul style="list-style-type: none">• Cows are provided with a large amount of water: up to 100 litres per day
Health checks	<ul style="list-style-type: none">• Regular veterinary health checks• Ongoing inspections after giving birth• Farmer observations twice a day• A unique identification tag for each cow which is linked to health records• Drenching (prevents worms)• Vaccination against common diseases

Creative challenge 1

Caring for animals on dairy farms



Explore & create

Design solutions to support and improve animal welfare on dairy farms

For this activity you will consider current production methods on Aussie dairy farms and design solutions to further support and improve animal welfare.

As a class, discuss the current production methods on Aussie dairy farms that you have observed. Have you identified any aspects of milk production which could be modified to support animal welfare?

Collaborating in small groups, research the production areas you would like to improve.

Consider the positive and negative aspects of the current farming practices. How could they be improved?

You might like to explore:

- milking system design (e.g. rotary, robotic, etc)
- shade and irrigation
- bobby calves and animal transportation
- cow track or yard design
- disease and hygiene
- comforts to relieve animal stress

Create a concise brief (set of instructions) outlining your design and how it would improve your chosen aspect of dairy farm management. Your brief should include:

- project background, focusing on the issue you are trying to solve to support animal welfare
- proposed solutions, including annotated sketches and the resources required

Present your designs to your class.

Creative challenge 2

Caring for animals on dairy farms



Analyse & communicate

Use digital technologies to communicate how dairy farmers care for their cows

For this activity, you will explore current production methods on Aussie dairy farms then devise and produce a video communicating how milk is produced.

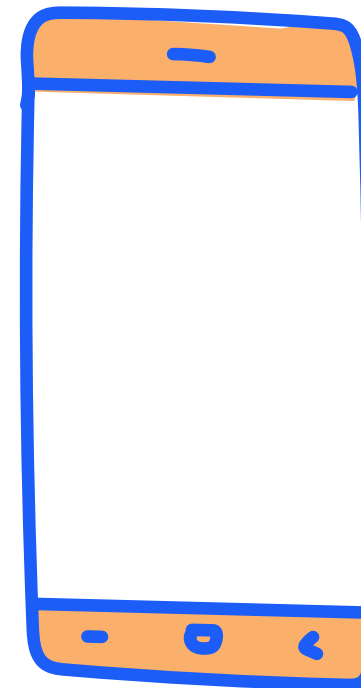
Consider what you have learned about how milk is produced on Aussie dairy farms. Collaborating in small groups, research and discuss the guiding questions:

- How are cows milked? How often are they milked? How much milk do they produce?
- What equipment and other resources are required to milk cows on Aussie dairy farms?
- How do farmers care for their cows to ensure their herd is physically and psychologically healthy?

Devise, shoot and edit a short film communicating what you have learned. Consider your target audience – your friends!

Use an app such as ShadowPuppetEdu, Animoto or iMovie to create your film. Get creative! You could re-enact the milking processes, use stop-motion animation, or edit and narrate other people's footage.

Share your film with your classmates!



Student led tasks

Independent and extension learning



This matrix provides extra student-led activities that can be completed independently, in small groups, or as homework tasks. Some activities will require further teacher scaffolding.

Research	Imagine	Analyse
<p>Investigate the life and work of Dr. Temple Grandin, a groundbreaking animal behaviourist and autism advocate.</p> <p>Dr. Grandin's autism appears to increase her empathy with animals, helping her to understand their lives. She has contributed greatly to animal welfare debates and to agricultural innovations supporting animal welfare.</p> <p>Integrate some of Dr. Grandin's farming ideas into your design tasks or make a digital poster showing her achievements.</p>	<p>Write a narrative about living as an animal in a world in which human beings reign supreme.</p> <p>What challenges will your character face? How will you resolve them? How will your character help humans and other animals create a happier, more sustainable existence for all?</p> <p>Draw or paint a portrait of your animal protagonist.</p>	<p>Investigate the idea of human rights.</p> <p>What are human rights? When, how and why did this idea develop? Explore the Universal Declaration of Human Rights, a document created following the horrors of World War II. What is the purpose of this document?</p> <p>Read through the 30 Articles in the document and decide which five rights you believe are most important. Why?</p> <p>Research charters of rights for animals and outline your findings.</p>

Resources & links

How dairy farmers care for their cows

[Australian Dairy - Sustainability](#)

[Dairy Matters - You Ask, We Answer](#)

[Discover Dairy - Australian Dairy Education Resources](#)

[Discover Dairy - How Milk is Made & The Milking Process](#)

[Discover Dairy - YouTube](#)

[Australian Animal Welfare Standards and Guidelines](#)

[Australian Curriculum](#)

[Australian Dairy Farmers - Animal Health and Welfare](#)

DISCOVER AUSSIE DAIRY
DAIRY.EDU.AU