IT’S A CHANGING WORLD

LEARNING SEQUENCE

DISCOVER DAIRY
This online curriculum-linked resource was produced by Dairy Australia.

The curriculum-linked resource is designed to introduce young people to the production of dairy foods and the dairy industry in Australia.

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The materials in this educational resource have been developed by Angela Colliver from Angela Colliver Consulting Services Pty Ltd.

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# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource description</td>
<td>2</td>
</tr>
<tr>
<td>Curriculum focus</td>
<td>2</td>
</tr>
<tr>
<td>Australian Curriculum Content Descriptions</td>
<td>3</td>
</tr>
<tr>
<td>A suggested teaching sequence</td>
<td>4</td>
</tr>
<tr>
<td>Step 1: The Scenario</td>
<td>5</td>
</tr>
<tr>
<td>Step 2: Define understandings</td>
<td>6</td>
</tr>
<tr>
<td>Step 3: Discover</td>
<td>7</td>
</tr>
<tr>
<td>Step 4: Dream</td>
<td>11</td>
</tr>
<tr>
<td>Step 5: Design</td>
<td>13</td>
</tr>
<tr>
<td>Step 6: Deliver – Produce</td>
<td>14</td>
</tr>
<tr>
<td>Step 7: Debrief</td>
<td>15</td>
</tr>
<tr>
<td>References and resources</td>
<td>12</td>
</tr>
</tbody>
</table>
This learning sequence encourages students to discover how dairy farmers can use waste products produced on their dairy farms and reduce impacts on the environment. Students learn about the landscapes in which Aboriginal and Torres Strait Islander Peoples’ lived and sourced food. Students learn about dairy farming in the past and present and discover how dairy farmers have changed the natural Australian landscape from bush to fenced paddocks with pastures for cows to graze on. They explore how dairy farmers and the environments in and around their farms can influence each other. Students are tasked with investigating how dairy farmers and the natural resources and infrastructure on their farms are interconnected, and they then design and produce a mural and accompanying narrative that describes the interconnection of the past, present and future to demonstrate how these can best be used in a way that is productive now, and will remain so in the future.

**RESOURCE DESCRIPTION**

This is a unit of work for Geography and Technologies.

**CURRICULUM FOCUS**

This is a unit of work for Geography and Technologies.

*Year levels: Year 5*
AUSTRALIAN CURRICULUM CONTENT DESCRIPTIONS

Technologies

Technologies: Knowledge and understanding
Investigate how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services and environments for current and future use ACTDEK019

Investigate how and why food and fibre are produced in managed environments ACTDEK021

Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use ACTDEK023

Technologies Processes and Production Skills
Critique needs or opportunities for designing and investigate materials, components, tools and equipment and processes to achieve intended designed solutions ACTDEP024

Generate, develop, communicate and document design ideas and processes for audiences using appropriate technical terms and graphical representation techniques ACTDEP025

Apply safe procedures when using a variety of materials, components, tools, equipment and techniques to make designed solutions ACTDEP026

Negotiate criteria for success that include consideration of sustainability to evaluate design ideas, processes and solutions ACTDEP027

Develop project plans that include consideration of resources when making designed solutions individually and collaboratively ACTDEP028

Geography

Geographical Knowledge and Understanding
The influence of people, including Aboriginal and Torres Strait Islander Peoples, on the environmental characteristics of Australian places ACHGK027

The influence people have on the human characteristics of places and the management of spaces within them ACHGK029

The influence of the environment on the human characteristics of a place ACHGK028

History

Historical Knowledge and Understandings
The nature of convict or colonial presence, including the factors that influenced patterns of development, aspects of the daily life of the inhabitants (including Aboriginal Peoples and Torres Strait Islander Peoples) and how the environment changed ACHHK094

The impact of a significant development or event on a colony; for example, the expansion of farming ACHHK095

Historical skills: Explanation and communication
Use a range of communication forms (oral, graphic, written) and digital technologies ACHHS106
**Cross Curriculum Priorities**

**Aboriginal and Torres Strait Islander histories and cultures**

0I.2: Aboriginal and Torres Strait Islander communities maintain a special connection to and responsibility for Country/Place throughout all of Australia.

0I.3: Aboriginal and Torres Strait Islander People have unique belief systems and are spiritually connected to the land, sea, sky and waterways.

0I.5: Aboriginal and Torres Strait Islander Peoples’ ways of life are uniquely expressed through ways of being, knowing, thinking and doing.

0I.6: Aboriginal and Torres Strait Islander Peoples have lived in Australia for tens of thousands of years and experiences can be viewed through historical, social and political lenses.

**Sustainability**

0I.2: All life forms, including human life, are connected through ecosystems on which they depend for their wellbeing and survival.

0I.3: Sustainable patterns of living rely on the interdependence of healthy social, economic and ecological systems.

0I.7: Actions for a more sustainable future reflect values of care, respect and responsibility, and require us to explore and understand environments.

**General Capabilities**

Literacy; ICT’s capabilities, Critical and creative thinking

*Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), downloaded from the Australian Curriculum website in September 2015.*

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**A SUGGESTED TEACHING SEQUENCE**

This learning sequence is underpinned by the work of Lee Crockett. It uses the solution fluency through six phases: Define; Discover; Dream; Design; Deliver and Debrief. The phases of the model are based on the 21st Century Fluencies created by Crockett *et al.* (2011).

The 21st Century Fluencies are outlined extensively in the book ‘Literacy Is Not Enough’ by Crockett *et al.* (2011). See [globaldigitalcitizen.org](http://globaldigitalcitizen.org) and [youtube.com/watch?v=N8DEeR1sraA](http://youtube.com/watch?v=N8DEeR1sraA)
Dairy Australia is searching for schools to investigate the interconnection between how dairy farmers raise cows to produce milk whilst also caring for environment and maintaining healthy farms and healthy cows.

Find out about the landscapes of the Aboriginal and Torres Strait Islander Peoples, how early European settlers brought dairy cows to Australia to provide food and thereby changed the natural Australian landscape from native bush to fenced paddocks with pasture for cows to graze.

View videos and images, and read about today’s dairy farmers who also have changed their Australian landscape to produce cows and milk. Probe into ways some of Australia’s farmers manage spaces on their farms, care for their cows and maintain production systems that are sustainable.

Envision the future and consider the many possible ways dairy farmers can do to take action and farm sustainably.

Dairy Australia invites you to design and produce a mural and an accompanying narrative that describes the factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.

What investigations can assist you to research how landscapes of the Aboriginal and Torres Strait Islander Peoples’ looked? What investigations can assist your research how Australian landscapes looked before European settlement and since European settlement? What investigations can assist your research how dairy farmers look after their landscapes, including their soil, pastures, water and cows? Will you investigate how dairy farmers currently rotate cows around the paddocks to maintain healthy pastures? Will you investigate how dairy farmers currently wash out their milking sheds and recycle the cow waste to irrigate their pastures? Will you investigate how dairy farmers use spray irrigation to efficiently water their pastures? Will you investigate how dairy farmers plant trees to provide shelter and shade for the cows and protect creek banks, wetlands and water quality?

Dairy Australia and other producers can help out with lots of information, images and videos on their websites.

Your challenge is to use these websites and a range of activities and videos to help you design and produce a mural and accompanying narrative that describes the factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.

How will you design your mural? How will your mural describe the landscapes the Aboriginal and Torres Strait Islander Peoples lived in and sourced food from? How will your mural and narrative describe the landscape that existed before European settlers brought dairy cows to Australia? How will your mural and narrative describe the landscape after European settlers brought dairy cows to Australia? How will your mural and narrative describe the landscape that today’s dairy farmer manages? And, how will your mural and narrative describe the landscape of the future where dairy farmers are using their land in a way that it is productive now, and will remain so in the future? Finally, how might you present your mural and accompanying narrative to others?
**Objective:** Have students illustrate their understanding of the challenges set out in the scenario by providing an oral definition of the task.

**Capture students’ interest** and view pictures that feature landscapes in which Aboriginal and Torres Strait Islander Peoples and early settlers lived.

**View artworks** to investigate the features of the landscapes of our Aboriginal and Torres Strait Islander Peoples. See [nla.gov.au/nla.pic-an10128947](nla.gov.au/nla.pic-an10128947)

**Discover** additional artworks using the search function on the homepage of libraries in your state and territory to learn more about the landscapes of our Aboriginal and Torres Strait Islander Peoples.

**Explore artworks** that describe and provide a picture of what landscapes were like after European settlers brought dairy cows to Australia to provide food. See [sl.nsw.gov.au/discover_collections/history_nation/agriculture/index.html](sl.nsw.gov.au/discover_collections/history_nation/agriculture/index.html)

**Scroll through the watercolours** and discuss how with the advent of European settlement the landscape changed as needs for food, shelter and clothing were met.

**View images** of life size cows that school students have painted with images to describe how dairy farmers raise cows and do lots of things to care for their landscape and environment. See [flickr.com/photos/art4agriculture/sets/72157647406900023](flickr.com/photos/art4agriculture/sets/72157647406900023)

**Discuss** what the students think they know about any factors that can shape and change landscapes and environments from the perspective of the past, present and future.

**Invite** students to recall the focus of the task that Dairy Australia has invited them to undertake.

**Ask students** what they might need to know more about, in order to undertake the task set by Dairy Australia. Might they need to know something about the types of landscapes that existed 300 years ago and after European settlement? Might they need to know something about dairy farming today and the landscapes where dairy farming is undertaken? Might they need to know where to find and research information about these landscapes? Might they need to research and evaluate the reasons for changes that were made to the landscape and environment? What might they have to do to design and create a mural and write an accompanying narrative? What tools, equipment and procedures might be needed? How could they design and create a mural? How might they evaluate their mural, its design and the information it communicates? How might they evaluate the effectiveness of their accompanying narrative?

**Prerequisite for progression**

Ask students to articulate their understanding of the task/challenge through oral conversation and if appropriate a written (scribed) statement.

**Note:** The Prerequisite for Progression are the checkpoints that occur at the end of each stage of the learning sequence. This is the time at which formative feedback is given to the students about what they have accomplished in that stage. It describes what the students must complete before they move onto the next phase of the unit. (Crockett, et al)
**STEP 3: DISCOVER**

*Objective:* Have students research, read, view, listen to, discuss, gather, organise ideas about the factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.

**Ask students** to consider the questions ‘How might the Aboriginal and Torres Strait Islander Peoples have altered the environment through their methods of land and resource management?’; ‘How might the European settlers who brought dairy cows to Australia have altered the environment through their methods of land and resource management’; and ‘How might today’s dairy farmers alter the environment through their methods of land and resource management?’

**Talk** about how the Aboriginal and Torres Strait Islander Peoples farmed and fished for food.

**Immerse** students in landscapes where indigenous women collect Merrepen and natural dyes to make dilly bags. See: australianscreen.com.au/titles/merrepen/clip2

**Talk** with the students about the Aboriginal and Torres Strait Islander Peoples’ connection to country and their land/seas, and how their relationship to the natural world carries responsibilities for its survival and continuity. For example talk about how sources of water have to be looked after and cared for as a matter of health and survival; talk about how rock holes are covered with rocks or branches to protect them; and talk about how only the food that is needed is taken from the environment so that on future visits stocks of plants and animals are still plentiful.

**Ask students** to picture a landscape of the Aboriginal and Torres Strait Islander Peoples that is thick with inland forests or grasslands for native animals to feed on.

**Explain** to students that the Aboriginal and Torres Strait Islander Peoples were not an agricultural society and did not till the ground.

**Ask students** to imagine the landscape the Aboriginal and Torres Strait Islander Peoples farmed and fished.

**Ask students** questions like:

- What is this landscape like?
- What do people do here?
- What is happening in this landscape?
- How is food sourced here?
- How is this landscape being affected by the methods of sourcing foods?
- Might the methods of sourcing foods be sustainable practices?
- What changes to the landscape could the Aboriginal and Torres Strait Islander Peoples have influenced after living in the landscape for more than 60,000 years?

**Ask students** to record their understandings about the factors in sourcing food that shaped and changed landscapes and environments from the perspective of the Aboriginal and Torres Strait Islander Peoples.

**Explore the NSW Library’s resources** for information about the European settlers who brought dairy cows to Australia. See sl.nsw.gov.au/discover_collections/history_nation/agriculture/index.html

**Scroll through** the watercolours and photographs and discuss how with the advent of European settlement the landscape changed as needs for food, shelter and clothing were met.

**Ask students** questions like:

- What is this landscape like?
- What do people do here?
- What is happening in this landscape?
- How are cows raised and produced here?
- How is this landscape being affected by the methods of production?
- What changes to the landscape could European settlers have influenced after living in the area for 100 years?

**Ask students** to record their understandings about the factors in dairy farming that shaped and changed landscapes and environments from the perspective of the first European settlers who brought dairy cows to Australia.
In pairs using a digital device, explain to the class they are to research information about dairy farming today and the landscapes where dairy farming is undertaken. See dairy.edu.au/discoverdairy/topics/farm-life/dairy-farming-in-australia

dairy.edu.au/discoverdairy/topics/farm-life/dairy-industry
dairy.edu.au/discoverdairy/topics/farm-life/dairy-cows
dairy.edu.au/discoverdairy/topics/farm-life/dairy-farmers

Using the various photos and the landscapes featured ask questions like:

- What is this landscape like?
- What do people do here?
- What is happening in this landscape?
- How are cows raised and produced here?
- How is this landscape being affected by the methods of production?
- What changes to the landscape might today’s Australian dairy farmers have influenced after living in the area?

Read for information about the history of dairy farming in Australia. See dairy.edu.au/discoverdairy/learning-resources/background-information/s18-dairy-farming-in-australia

Find out more about what is involved in running and managing a dairy farm. See dairy.edu.au/discoverdairy/learning-resources/background-information/s21-a-day-on-the-farm

Assist students with more detailed information about dairy farming. Talk about how all dairy farmers need to plant lots of pasture in paddocks on their farms for dairy cows to eat. These pastures also need nutrients in the soil to grow and lots of water over the summer months to keep the pastures growing. Dairy farmers spread nutrients over these paddocks each year to produce healthy, strong feed for their cows, and they sometimes irrigate their farms if there is an available water supply from a dam, a river or an underground bore.

Dairy farmers also rotate their cows around the farm, from paddock to paddock (rotational grazing), to get the best growth out of their pastures, and to keep the pastures short and leafy. There are also times when dairy farmers graze their cows on a small strip of paddock so that the cows can eat down areas where pastures have become overgrown. Some dairy farmers also plant crops like corn and oats to cut for hay, which they can feed their cows.

Remind students that dairy cows are milked generally twice and sometimes three times a day and think about how dairy cows do a lot of walking between the paddocks and the dairy sheds. Therefore, most farms have a system of laneways that lead to the dairy sheds. These lanes have fences and drains either side to help stop the laneways getting degraded. The yards and paddocks all have fences too.

Discuss how dairy farms also have special areas where their calves can be kept together and be fed and looked after. Check out how a dairy farmer has designed areas for his calves at youtube.com/watch?v=WWNA3h95e7k
Talk about how dairy farms use lots of machinery, like tractors, quad bikes, ploughs, hay balers and hay trailers and they use their machinery and systems to drench their cows for worms, move them to a new paddock or to transport them to market. They also might use horses to assist them run their farm too.

Dairy farmers also look after their farms and the environment. They use a farm plan to organise how they will look after their soil, pastures, water and cows.

Read about how Australian dairy farmers care for the environment. See dairy.edu.au/discoverdairy/learning-resources/background-information/s22-caring-for-the-environment

Talk about ‘irrigation’ on farms. Introduce irrigation techniques like ‘overhead sprinklers; flood irrigation; channel irrigation; under-tree irrigation; automatic irrigation systems and micro-sprinklers’. Ask students to imagine being a dairy farmer and in pairs discuss and list the irrigation system they might prefer to use on a dairy farm, giving reasons why. Explore a ‘Water Smart Farm’ and its use of energy and water efficient systems at dairy.edu.au/discoverdairy/learning-resources/videos/watersmart-farms-university-of-sydney-dairy

Learn more about fencing off waterways and dams from dairy cows, revegetating natural areas on farms and conserving biodiversity in and around dairy farms are important farming practices. View youtube.com/watch?v=204&q=HRDF_SniNw

Find out about how dairy farmers are keeping their landscapes healthy and clean and integrating a range of environmental practices with their farming practices at youtube.com/watch?v=ybxBCN80lbs

Read articles online or visit the library and read books and pamphlets about dairy farming in Australia. A suitable title is ‘Dairy: The Story of Dairy Farming in Australia’ published by the Kondinin Group.

Hear from an Australian farmer and read his stories and view his photos about how he reuses and recycles waste products produced by cows. See montrosedairy.com/2013/03/08/time-to-get-our-crap-sorted

Find out about new technologies that are helping another Australian dairy farmer reuse and recycle cow manure at milkmaidmarian.com/2011/09/30/new-technology-sparks-a-revolution-on-farm

Consider farmers who actively fence their cows away from rivers and streams. Could this reduce the impact on the environment?

Read ‘A Farming Family’ by Lucy Hickson at envirostories.com.au/portfolio/2014-book66 and using page 9 of the story talk about why farm families might fence off areas near watercourses and leave native vegetation along the zone directly adjoining the watercourse that is known as a ‘riparian zone’. (For example: by planting trees and shrubs near rivers and along riparian zones dairy farmers help stop the soil from washing away when it rains (erosion). Fencing cattle out of rivers and waterways keeps cattle poo on the paddocks and stops polluting the water. Cattle poo also keeps the soil healthy by providing it with nutrients).

Check out how schools have been involved in planting trees, sedges and grasses and creating buffer zones between the dairy cows and a rainforest at youtube.com/watch?v=QfF1bKYPGWE

Read about how Australian dairy farmers take action to manage environmental issues on dairy farms at dairy.edu.au/discoverdairy/learning-resources/background-information/s22-caring-for-the-environment

Ask students to record their understandings about the factors in dairy farming that shaped and changed landscapes and environments from the perspective of today’s dairy farmers.

Discuss ideas about how sourcing and producing food changes and alters the environment.

Draw flow charts to demonstrate the impact cow waste might have on a nearby river or stream after heavy rains; or the impacts of cows walking on the same laneways to the milking sheds everyday; or the impacts of irrigation practices that may waterlog the soil.
Develop consequence wheels that describe the consequences of dairy farmers implementing sustainable farming practices like using spray irrigation; planting trees and pastures to control salinity; reusing effluent on their pastures; managing stock carefully; planting perennial pastures; planting wind breaks and shelter belts; fencing stock out of waterways; controlling weeds; providing shelter for calves and cows.

Form pairs to discuss the different types of systems that could be designed to lessen impacts on landscapes and help dairy farmers reduce impacts on the environment.

Ask pairs to share these understandings with others.

Ask each student to share what their research has told them and what they still have to accomplish within the task with their peers, the teacher and family.

Prerequisite for progression

Students have worked as a class, individually and in pairs and collected research on factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.

Websites, videos, images and stories are used to contextualise understanding. Students will share their ideas with peers, the teacher and family.
Objective: Have students imagine how they are going to design a mural and accompanying narrative about factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.

Ask students to visualise their mural.

Ask questions to stimulate the possible ways of designing and creating their mural and accompanying narrative. For example:

- How will you design your mural and create the accompanying narrative?
- How will your mural describe the landscapes the Aboriginal and Torres Strait Islander Peoples lived in and sourced food from?
- How will your mural and narrative describe the landscape that existed before European settlers brought dairy cows to Australia?
- How will your mural and narrative describe the landscape after European settlers brought dairy cows to Australia?
- How will your mural and narrative describe the landscape that today’s dairy farmer manages?
- How will your mural and narrative describe the landscape of the future where dairy farmers are using their land in a way that it is productive now, and will remain so in the future?
- How might you present your mural and accompanying narrative to others?
- What might you have to do to make your design idea possible?
- What might it include?
- What might be focussed on?
- How might it be created?
- What are the different ways it could be created?

Develop possible solutions by brainstorming all possible solutions.

Explore the steps involved in the processes needed to satisfy the design brief and show students a range of ways other illustrators and designers have captured similar scenarios. For example view Simon Kneebone’s work at simonkneebone.files.wordpress.com/2011/10/horse-health-pic.jpg that describes good land management practices when having horses on a farm. Check out the way he communicates the cycle of planning and growing trees too at simonkneebone.files.wordpress.com/2011/10/cycle.jpg

Investigate artworks designed by children from all over the world and their individual ways of capturing stories about changes to environments too. See unep.org/tunza/tunzachildren/#videos and unep.org/tunza/children/photos.aspx#

Invite students to generate their design ideas. Might they create one large mural or a mural of four parts? Titles might include: The way it was; After settlement; The way it is, and The future. Might they create a mural using a collage technique? Might they illustrate it by hand? Might they use digital tools and software?
Ask students to consider the many possible ways they might create their design and accompanying narrative and to experiment with digital tools, aerial views, pictorial representations and the many images available on the ‘Discover Dairy’ website at dairy.edu.au/discoverdairy/students

Ask students to imagine the steps involved in designing and creating their mural and accompanying narrative about factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.

Challenge students to think about the materials, tools, and equipment they will need to design and create the mural and accompanying narrative. Will they use digital or non-digital equipment and tools? How might they work safely and cooperatively? High might they appropriately source their images and information that are used to create the mural and accompanying narrative?

Ask students how they might evaluate whether their mural and accompanying narrative meet the original criteria of their task?

Progressions for Learning
The class have brainstormed ideas to begin designing a mural and accompanying narrative about factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future, and have answered the questions posed in the dream phase.
**Objective:** Have students explain, prepare and action how they are going to design a mural and accompanying narrative about factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.

Ask students to decide on the type of mural and the messaging in the accompanying narrative they are going to design to identify and describe factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.

Invite students to think about developing a project plan outlining the planning and production steps required to produce their mural and accompanying narrative.

Talk about the importance of a clear layout and design that makes it easy for an audience to understand and interpret the information given.

Discuss the importance of including messaging and information in the mural and narrative about factors that change landscapes and environments identifying ways people have influenced and changed places and contributed to their sustainability.

Talk about the importance of sourcing photos and information correctly.

Review rules on personal safety, group safety, and classroom and furniture safety with the students.

Ask students to establish a work station and to gather the materials and tools they require.

Talk about safely storing their work samples and keeping a record of the processes they use to create it.

Ask students to draft the steps involved in making their chosen digital or non-digital work samples.

Ask students to gather the materials, tools, and equipment needed and then plan each step involved in creating the digital or non-digital work samples.

Invite students to start creating the mural and accompanying text that identifies and describes factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.

Talk with students about how they might share and present their mural and accompanying narrative to an audience?

Ask students to explain how they plan to finalise and create their work samples to another peer in the class and seek feedback on their ideas.

**Progressions for Learning**

Students are able to document in oral or written/digital forms how this project is to occur. The understanding is demonstrated by the students explaining their thinking to a peer in the class.
STEP 6: DELIVER – PRODUCE

**Objective:** Have students deliver their mural and accompanying narrative about factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.

The Delivery phase has two stages – production and publication. In the production stage the project comes to life – this is the doing phase. At the end of this phase the publication/presentation of the mural and accompanying narrative about factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future should be completed.

**Ask students** to design and create their mural and accompanying narrative about factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.

In the Publish phase, students get to showcase all of their thinking and planning. This is the time when students deliver their murals and accompanying narrative to each other or an audience. This is a good time for peer or self-assessment.

**Ask students** to share their mural and accompanying narrative about factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future to others.

**Video** presentations of the students’ murals and enjoy a day of showcasing what has been discovered about the factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.

**Progression for Learning**

Each student has produced a mural and accompanying narrative about factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.
**STEP 7: DEBRIEF**

**Objective:** Assess the results of the murals and accompanying narratives about factors in dairy farming that shape and change landscapes and environments from the perspective of the past, present and future.

Ask students to reflect on their learning. Ask students to:

- **re-tell** their findings about the factors in Australian dairy farming that have shaped and changed landscapes and environments.
- **identify** and describe how the Aboriginal and Torres Strait Islander Peoples altered the environment through their methods of sourcing food and landscape management.
- **identify** and describe how the early European settlers who brought dairy cows to Australia have altered the environment through their methods of land and resource management.
- **identify** and describe how today’s dairy farmers alter the environment through their methods of land and resource management.
- **describe** actions Australian dairy farmers use to influence places and contribute to sustainability.
- **evaluate** their mural and accompanying narrative and write about whether their work:
  - matched the definition of the task
  - used a clear layout and design, and
  - included sources of the photos and information it used.
- **write** about the quality of their planning, their finished mural and narrative and whether they enjoyed the task.
REFERENCES AND RESOURCES


Australian Curriculum Assessment and Reporting Authority. Australian Curriculum. Retrieved from australiancurriculum.edu.au

Creative Commons (2013) Creative Commons. Retrieved from creativecommons.org/licenses/by/3.0/au/deed.en


dairy.edu.au/discoverdairy/topics/farm-life/dairy-farming-in-australia

dairy.edu.au/discoverdairy/topics/farm-life/dairy-industry

dairy.edu.au/discoverdairy/topics/farm-life/dairy-cows

dairy.edu.au/discoverdairy/topics/farm-life/dairy-farmers

dairy.edu.au/discoverdairy/learning-resources/background-information/s22-caring-for-the-environment

dairy.edu.au/discoverdairy/learning-resources/background-information/s21-a-day-on-the-farm

dairy.edu.au/discoverdairy/learning-resources/background-information/s18-dairy-farming-in-australia


REFERENCES AND RESOURCES


YouTube videos

Art4Agriculture (2013) Balancing rainforest needs and the cows at Cloverhill Dairies with Erin Lake. Retrieved from youtube.com/watch?v=ybxBCNBOlLs

Art4Agriculture (2013) Erin Lake shares the Picasso Corner native landscape story with the next generation. Retrieved from youtube.com/watch?v=QfFlbKYPGWE

Art4Agriculture (2012) Young Eco Champion Erin Lake shares the Fountaindale Dam Project Story. Retrieved from youtube.com/watch?v=t204&v=thRDF_SnINw

Dairy Australia (2015) How I designed my calf housing with Stuart Tweedle. Retrieved from youtube.com/watch?v=WWNA3h95e7k

Mandalyn1000 (2012) Harnessing the Power of Poo at Cloverhill Dairies. Retrieved from youtube.com/watch?v=N0kbXZfWF4