



AN EDUCATIONAL UNIT FOR JUNIOR PRIMARY SCHOOLS



# Farm diaries

FOUNDATION

Design and Technologies,  
and Mathematics

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Liz Grant*

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This resource is designed to introduce young people to food and fibre production and primary industries in Australia. Whilst not an exhaustive educational resource, it is intended to raise the awareness of school-aged students about the influence of natural and human factors on the extent of food and fibre production in Australia and it supports investigations of the past and present and includes visioning a range of futures for food and fibre production.

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

PIEF would like to acknowledge and sincerely thank the education program reference group for offering comments on the drafts of materials in this educational resource.

Where experiments are involved, you are advised to carefully follow all instructions and heed all warnings. Experiments should be conducted only under adult supervision.

## Disclaimer

While reasonable efforts have been made to ensure that the contents of this educational resource are factually correct, the PIEF does not accept responsibility for the accuracy or completeness of the contents, and shall not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of this educational resource.

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# Introduction

## Rationale

This resource material aims to help teachers and students in primary schools investigate and understand more about primary industries in Australia.

The objectives of the educational resources are to:

- Support PIEF and its members in expanding awareness about primary industries in Australia by engaging and informing teachers and students about the role and importance of primary industries in the Australian economy, environment and wider community.
- Provide resources which help build leadership skills amongst teachers and students in communicating about food and fibre production and primary industries in Australia.
- Develop educational resources that can be used across Australia to provide encouragement, information and practical teaching advice that will support efforts to teach about food and fibre production and the primary industries sector.
- Educate school students on ways food and animals are raised and grown.
- Demonstrate to students that everyone can consider careers in primary industries and along the supply chain of food and fibre products.
- Assist school students to spread this message to their families and the broader community.
- Develop engaging learning programs using an inquiry process aligned with the Australian Curriculum.
- Develop in school communities, an integrated primary industries education program that emphasises the relationship between food and fibre industries, individuals, communities, the environment and our economy.

These educational resources are an effort to provide practical support to teachers and students learning about food and fibre production and primary industries in schools.

An integrated primary industries education program that emphasises the relationship between food and fibre industries, individuals, communities, the environment and our economy.

# About the approach

The approach used, is the inquiry approach through five phases: Engage, Explore, Explain, Elaborate and Evaluate.

Several key principles underpin the theoretical and practical application to this unit.

In providing an *integrated framework for inquiry*, complemented by rich explorations of texts that are, in turn, supported by an emphasis on undertaking a challenge or task, the unit requires students to:

- Search for information using both digital and non-digital means
- Use research techniques and strategies
- Use thinking and analysis techniques
- Present findings to a real audience, and
- Reflect both on the product created and the process undertaken.

Rather than seeing knowledge as something that is *taught* the emphasis in this unit is on knowledge and understanding that is *learned*.

The unit involves students in:

- Working from a basis of their prior knowledge and experience
- Seeing a real task or purpose for their learning
- Being directly involved in gathering information firsthand
- Constructing their knowledge in different ways
- Presenting their learning to a real audience
- Reflecting on their learning.

The approach used, is the inquiry approach through five phases: **Engage, Explore, Explain, Elaborate** and **Evaluate**. The phases of the model are based on the 5Es instructional model (Bybee, 1997). This unit of work containing student activities assists students to raise questions, gather and process data, make conclusions and take action. These phases are:

- **Engage:** The 'Engage' phase begins with lessons that mentally engage students with an activity or question. It captures their interest, provides an opportunity for them to express what they know about the concept or skill being developed, and helps them to make connections between what they know and the new ideas.
- **Explore:** The 'Explore' phase includes activities in which they can explore the concept or skill. They grapple with the problem or phenomenon and describe it in their own words. This phase allows students to acquire a common set of experiences that they can use to help each other make sense of the new concept or skill.
- **Explain:** The 'Explain' phase enables students to develop explanations for the phenomenon they have experienced. The significant aspect of this phase is that explanation follows experience.
- **Elaborate:** The 'Elaborate' phase provides opportunities for students to apply what they have learned to new situations and so develop a deeper understanding of the concept or greater use of the skill. It is important for students to discuss and compare their ideas with each other during this phase.
- **Evaluate:** The 'Evaluate' phase provides an opportunity for students to review and reflect on their own learning and new understanding and skills. It is also when students provide evidence for changes to their understanding, beliefs and skills.

## Resource description

This is a unit with five inquiry teaching sequences about exploring someone's life on farms through the story of one day.

This unit encourages students to examine mathematical concepts of time and days of the week by exploring the needs of animals on farms each day of the week. They explore things that farm families are doing to care for the animals and crops that are grown, raised and processed for food or fibre.

Students are given an insight into ways farmers care for their animals and crops everyday with animal welfare standards and environmental stewardship principles in mind.

Students are invited to plan a presentation about what happens on a farm each day of the week and how farm animals and crops are grown, raised and cared for on farms.

As the unit progresses, the emphasis shifts to investigating products produced from farm animals or crops and how they meet our needs.

Having explored what happens on the farm where food is grown, students then investigate foods grown on farms that they eat every day. They interview a family member or friend about Australian grown farm products they eat, wear or use and collect their favourite recipe or item that uses these products.

At each stage in the investigations, the students are encouraged to share their findings about what happens on a farm each day of the week and how farm animals and crops are grown, raised and cared for on farms; the products produced from them; and recipes, clothes and household items made using Australian farm grown foods and fibres used by families.

**Year levels:** Foundation

## Curriculum focus

In this unit, students:

- Explore someone's life through the story of one day.
- Investigate systems of care for animals or crops that are grown, raised and processed for food and fibre.
- Investigate the basic needs of animals or crops on farms each day of the week.
- Investigate methods used every day on Australian farms to produce farm animals and/or crops.
- Investigate concepts and ideas about how food produced by farm animals and crops can be prepared for healthy eating.
- Select ideas and undertake inquiries.
- Reflect and evaluate the ways farmers care for animals and crops that are grown, raised and processed for food every day of the week.

Explore things that farm families are doing to care for the animals and crops that are grown, raised and processed for food or fibre.

# Australian Curriculum content descriptions

## Design and Technologies

**Strand:** Design and Technologies knowledge and understanding

Explore how plants and animals are grown for food, clothing and shelter and how food is selected and prepared for healthy eating [ACTDEK003](#)

## Mathematics

**Strand:** Measurement and Geometry: Understanding units of measurement

Compare and order duration of events using everyday language of time [ACMMG007](#)

Connect days of the week to familiar events and actions [ACMMG008](#)

## Cross Curriculum Priorities

### Sustainability

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

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

*Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), downloaded from the Australian Curriculum website in September 2014.*

# Implementing the unit and activities in the classroom

## Using the unit

The unit can be used in a number of ways. It will be of most benefit to teachers who wish to implement a sustained sequence of activities following the inquiry stages identified on page 4 of this unit and content descriptions in Foundation in Design and Technologies, Mathematics and Science as stated in the Australian Curriculum.

## Selecting activities

At each stage several activities are suggested from which you are encouraged to select the most appropriate for your purposes. Not all activities in each stage of the unit need to be used. Alternatively, you may add to or complement the suggested activities with ideas of your own.

It is suggested that teachers create a hyperlinked unit. Organise the digital resources for your class's use on a website or wiki or provide them on your interactive whiteboard.

## Resourcing the unit

The resources suggested are on the whole, general rather than specific. Schools and the contexts in which they exist vary widely as does the availability of some resources – particularly in remote areas. There is a strong emphasis in the unit on gathering information and data; research and observations also feature strongly as these methods develop important skills and ensure that the exploration of the topics are grounded in a relevant context.




Some You Tube and online videos in addition to Internet based resources are suggested in the unit. You will need to investigate what is available in your school.

## Adapting the unit

The unit is targeted at Foundation level students. This is a suggested age range only and teachers are encouraged to modify activities to suit the needs of the students with whom they are working.

The unit's topics are based on content descriptions of the Australian Curriculum and on the key cross curriculum priority of sustainability. They embrace content that we believe is of relevance and significance to all students. We encourage you to explore ways in which the content can be adjusted to the context in which you are working.

Many of the activities contain the following icons offering a suggestion on how many students should be involved:

-  Suggested for individuals
-  Suggested for pairs or small groups
-  Suggested for larger groups or entire classes

Resource sheets are provided for some activities. Most are for photocopying and distribution to students. They are identified within units in bold: **[Resource 1.1](#)**

The resource sheets are designed to assist teachers to facilitate learning without having to access a range of other resources.

### What about assessment?

Rather than being a task carried out at the end of the unit, assessment is viewed as integral to the entire unit sequence. Each activity should be regarded as a context for assessment of student learning.

When planning and implementing the unit of work make clear decisions on what you will focus on in assessing learning. The unit provides an opportunity for a range of skills and understandings to be observed. We encourage you to devise an assessment plan or assessment rubric that features areas to be assessed over subsequent lessons.

In planning for assessment, student learning in the following areas can be considered:

- Understandings about the topic.
- Development of skills.
- Exploration and clarification of values.
- Use of language in relation to content.
- Ability to use and critically analyse a range of texts.
- Ability to analyse and solve problems.
- Ability to interpret information, perceive its meaning and significance, and use it to complete real-world tasks.
- Ability to work cooperatively with others.
- Approach to learning (independence, confidence, participation and enthusiasm).

For this unit, the following understandings are provided to assist teachers in planning for assessment.

### Assessment strategies

Each stage in the inquiry sequence provides information about student learning. This unit contains a 'Student Task' which is well suited for assessment as it is the summation of the work undertaken by the students in the unit. Work samples should be retained for this purpose.



## Some questions and possible answers

### **Should I do all the activities?**

At each stage of a unit, a number of activities are listed. You would not be expected to do them all. Instead, the unit is designed so that a selection of activities can be made at each stage. You should select the activities according to the needs and interests of your students and the time, relevance to the existing school curriculum and resources available to you.

While you are encouraged to follow the suggested inquiry sequence for each unit, it is quite possible to pick and choose from the range of activity ideas throughout the unit. It may also be used in conjunction with other programs you use.

### **How do these units fit into my weekly program?**

Although the unit integrates a range of key subject areas, it is not designed to be a total program. It is assumed that regular routines that operate in your classroom will continue to run alongside your unit of work. For example, you may have regular times for use of the library, for maths, physical education etc. These things don't change – although student's writing topics or choice of topics to research in the library or in ICT classes may be influenced by this unit.

### **How long should the unit run?**

This will of course depend on your particular circumstances but generally, a few weeks to a term are suggested.

### **I don't know much about food and fibre production myself – will I be able to teach it effectively?**

Yes! The unit is designed in such a way that you, as the teacher are a co-learner, and you are therefore provided with teacher notes, plus readily available resources that are mainly web-based. Most importantly, you will find that you learn with the students and make discoveries with them.

# Fast facts about Australian agriculture

## National Farmers Federation (NFF) Farm Facts 2012



In 2011, there were 157,000 farmers in Australia.



The gross value of Australian farm production in 2011-12 was \$46.7 billion.

This page provides basic food and fibre production information that may be helpful when you interact with the school students.

- Agriculture plays a vital role in Australia, contributing to our social, economic and environmental sustainability.
- In 2011, there were 157,000 farmers in Australia. Around half of these were mixed crop and livestock farmers (22 percent), beef cattle farmers (20 percent) or dairy farmers (8 percent).

*Sources: Australian Bureau of Statistics, 2010-11 Agricultural Census; Australian Bureau of Statistics, Australian Social Trends, Australian Farming and Farmers, December 2012, Catalogue No. 4102.0.*

- These farmers own or manage Australia's 135,000 farm businesses – 99 percent of which are Australian owned.

*Sources: Australian Bureau of Statistics, 2010-11 Agricultural Census; Australian Bureau of Statistics, Agricultural Land and Water Ownership, December 2010, Catalogue No. 7127.0.*

- Each Australian farmer produces enough food to feed 600 people, 150 at home and 450 overseas. Australian farmers produce 93 percent of Australia's daily domestic food supply.

*Sources: Keogh M, Australian Farm Institute, 2009, "Australia's response to world food security concerns", Address to the 1st NFF Annual Congress – PMSEIC (2010); Australia and Food Security in a Changing World. The Prime Minister's Science, Engineering and Innovation Council, Canberra, Australia.*

- The average Australian farmer is male (72 percent), 53 years old (compared with 40 years old for people in other occupations), and a self-employed owner manager (56 percent).

*Sources: Australian Bureau of Statistics, 2010-11 Agricultural Census; Australian Bureau of Statistics, Australian Social Trends, Australian Farming and Farmers, December 2012, Catalogue No. 4102.0.*

- As of June 2012, there were 290,000 people employed in Australian agriculture. The complete agricultural supply chain, including the affiliated food and fibre industries, provide over 1.6 million jobs to the Australian economy.

*Sources: ABARES, Australian Commodity Statistics, 2012; Australia's Farm Dependent Economy: Analysis of the role of Agriculture in the Australian Economy. Modelling undertaken by Econtech.*

- The agricultural sector, at farm-gate, contributes 2.4 percent to Australia's total gross domestic product (GDP). The gross value of Australian farm production in 2011-12 was \$46.7 billion.

*Sources: Australian Bureau of Statistics, Value of Agricultural Commodities Produced, 2011-12, Catalogue No. 7503.0; Australian Bureau of Statistics, 2010-11, Australian System of National Accounts, Catalogue No. 5204.0; ABARES, Australian Commodity Statistics, 2012.*

- Australian farmers are environmental stewards, owning, managing and caring for 59 percent of Australia's land mass.

*Sources: Australian Government Department of Agriculture, Fisheries and Forestry, At a Glance, 2012.*

- Farmers are at the frontline of delivering environmental outcomes on behalf of the Australian community, with 94 percent of Australian farmers actively undertaking natural resource management.

*Source: Australian Bureau of Statistics, Natural Resource Management on Australian Farms 2006-07.*

- Australia's primary industries have led the nation in reducing greenhouse gas emissions: a massive 40 percent reduction between 1990 and 2006.

*Source: Australian Government Department of Climate Change, National Inventory by Economic Sector 2006.*

Source: National Farmers' Federation (NFF) Farm Facts 2012 at

<http://www.nff.org.au/farm-facts.html>

## Meat and Livestock Industry

- Australia's national cattle herd stands at 28.5 million head with the beef industry accounting for 57 percent of all farms with agricultural activity.
- Australia produced around 2.2 million tonnes of beef and veal in 2012–13 directly contributing to 1 percent of Australia's gross domestic product.
- Australia's national sheep flock is 74.7 million head with the sheep industry accounting for 32 percent of all farms with agricultural activity.
- Australia produces approximately 6 percent of the world's lamb and mutton supply and in 2012–13 exported 51 percent of all lamb and 96 percent of all mutton produced.
- Australia's beef and lamb industry employs approximately 200,000 workers across farm, processing and retail.
- Australian cattle and sheep farmers are the custodians of almost half of Australia's land.
- Australia's beef and lamb industry is committed to ensuring a sustainable food supply for future generations with ongoing research and development projects relating to water, soil, biodiversity, animal welfare, energy, emissions and more.

Source: *Meat and Livestock Australia* <http://mla.com.au>

## Fishing and Aquaculture Industry

Australia's marine domain, our Exclusive Economic Zone (EEZ), is one of the largest in the world, covering around 10 million square kilometres. This is larger than mainland Australia (7.69 million square kilometres). Despite the size of this zone Australia ranks 46th in the world for seafood production.

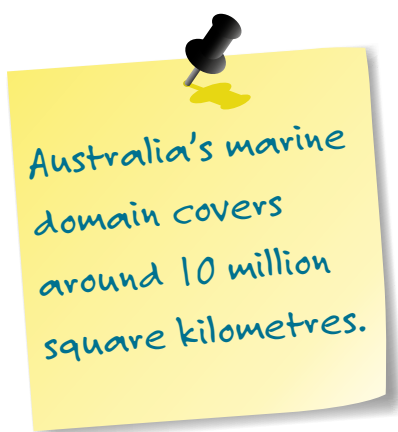
Australia has progressively adopted a more ecosystem-based approach to fisheries management which looks at the effect of fishing practices not just on the target species, but also on the environment and other related species. Fisheries managers monitor both stock and fishing levels as well as a range of other environmental factors to ensure the amount of seafood harvested every year does not deplete stocks. In addition, government observers travel regularly on fishing boats to ensure compliance to quotas, bycatch limits and other regulations.

Source: *Fisheries Research and Development Corporation (FRDC) 2013* <http://frdc.com.au/>

During 2011–12 in Australia:

- There were 6,991 people directly employed in the commercial fishing, hunting and trapping sector, and 3,642 in aquaculture enterprises.
- The sector comprises approximately 120 wild catch fisheries and 70 aquaculture species.
- The gross value of Australian commercial seafood and products (e.g. pearls) was valued at \$2.3 billion, an increase of 3 percent on the previous year.
- Australian imports of fisheries products increased by 5 percent.
- The value of production for the wild-catch sector declined by 1 percent to \$1.3 billion and production volume decreased by 4 percent to 157,505 tonnes. While the gross value of aquaculture production rose by 10 percent (\$100 million) to \$1.1 billion.
- The largest contributor to Australian aquaculture production in 2011–12 was salmonids, which make up 52 percent of the total aquaculture production volume and 49 percent of the value.
- Tasmania accounted for the largest share of gross value of production (30 percent), followed by South Australia (19 percent) and Western Australia (17 percent). Commonwealth fisheries accounted for 13 percent of the gross value of production.

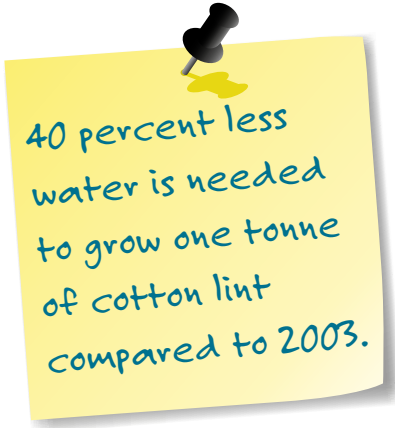
Source: *Australian Bureau of Agricultural & Resource Economics (ABARES) 2013* [http://data.daff.gov.au/data/warehouse/9aam/afstad9aamd003/2012/AustFishStats\\_2012\\_v1.0.0.pdf](http://data.daff.gov.au/data/warehouse/9aam/afstad9aamd003/2012/AustFishStats_2012_v1.0.0.pdf)



## Cotton Industry



Australia's cotton growers produce yields almost three times the world average.



40 percent less water is needed to grow one tonne of cotton lint compared to 2003.

- Every year cotton farmers make an important social and economic contribution to the nation creating jobs for 8,000 people (in Northern NSW and Southern QLD alone), support for more than 4,000 businesses and over \$2 billion for the national economy in export earnings.

Sources: *Cotton Australia Pocket Guide to Cotton, Judith Stubbs and Associates Report 2011.*

- In 2013, there were 1,181 cotton farms. 56 percent were in NSW and 44 percent were in Queensland. Of those farms cotton makes up 17 percent of land area on farm.

Source: *Monsanto audited numbers 20.12.13, 2011.*

- Australia's cotton growers produce enough cotton to provide jeans, socks, underwear and a shirt for 450 million people. The overall yield in 2012 was 10.37 bales per hectare – the first time in history that average yields have exceeded 10 bales per hectare. Australia's cotton growers produce yields almost three times the world average.

Sources: *Cotton Australia tables (compilation of industry sources), ABARES Crop Report, December 2012, Pocket Guide to Cotton 2014.*

- The average Australian cotton farmer is 39 years old, has a family owned and operated farm, employs on average six or more people, grows other crops like sorghum, soybeans, wheat and canola, has 496 hectares of cotton and is not only a farmer but also a builder, mechanic meteorologist, agronomist, conservationist, scientist and marketer.

Sources: *Pocket Guide to Cotton 2014, Monsanto audited numbers, 20.12.13, 2013 Cotton Practices Grower Survey, CRDC.*

- The Australian cotton crop was worth almost \$2.3 billion at the farm gate.

Source: *Cotton Australia tables (compilation of industry sources) Cotton Compass.*

- The Australian cotton industry has achieved a 40 percent increase in water productivity over the last decade i.e. 40 percent less water is now needed to grow one tonne of cotton lint, compared to 2003.

Source: *The Australian Cotton Water Story 2011.*

- The ratio of dryland cotton (rain grown) to irrigated cotton varies depending on the market and conditions. Of the 2011–12 crop 5 percent was dryland and 95 percent irrigated. Favourable grain and sorghum prices meant many dryland farmers opted not to plant cotton at that time.

Sources: *Cotton Australia Tables (Compilation of industry sources), ABARES Crop Report December 2012.*

- Australian cotton growers have reduced their insecticide use by 95 percent over the past 15 years. Source: *Monsanto Audited numbers 20.12.2013.*

- Cotton growers are good environmental stewards, owning and caring for native vegetation equivalent to 40 percent of the area of their cotton farms, on average.

Source: *2011 Cotton Grower Survey (CRDC and Cotton CRC).*

Source: Cotton Australia <http://www.cottonaustralia.com.au>

## Pork Industry



- Australia is the first nation in the world to introduce the voluntary phase-out of gestation stalls.
- Pork accounts for approximately 0.4 percent of the national greenhouse gas emissions – significantly lower than other agricultural sectors, including beef at 11.2 percent, sheep at 3.4 percent, and cattle at 2.7 percent.  
*Source: Garnaut, R 2008, The Garnaut climate change review – final report, available at: <http://www.garnautreview.org.au/index.htm>*
- Whether housed indoors or outdoors, a pig spends more time resting than any other domestic animal.
- Australia's pig herd health is one of the cleanest in the world, free from many detrimental diseases found in most other pig producing countries
- The feed component (mainly grains such as wheat, barley and sorghum) makes up about 60 percent of the total cost of producing pork.
- Pigs have a very wide angle of vision (310 degrees) and are therefore easily distracted.
- On average, a sow will produce 10–12 piglets per litter.
- The average growth rate of Australian pigs is around 600–650g a day from birth to sale.
- Pigs have colour vision but they can't focus both eyes on the same spot.
- Pigs are unable to perspire and they lose heat through their mouths. Their ideal growing temperature is 20–22°C.

*Source: Australian Pork Limited <http://www.australianpork.com.au>*

## Forestry Industry



Australia has 125 million hectares of forest, equivalent to 16 percent of it's land area.



Forests protect soil and water resources as well as storing carbon.

- Forestry plays a vital role in Australia, contributing to our social, economic and environmental sustainability.
- Forests are also the foundation for a broad range of cultural and spiritual experiences for diverse groups of people. They are a major tourist attraction for Australian and overseas visitors, providing for a vast array of recreational and educational activities.
- In 2010–11, the total turnover of Australia’s forest product industries was more than \$24 billion.
- Australia has 125 million hectares of forest, equivalent to 16 percent of Australia’s land area. Australia has about 3 percent of the world’s forest area, and the seventh largest reported forest area of any country worldwide.
- Australia’s 123 million hectares of native forests are dominated by eucalypt forests and acacia forests.
- 32 percent of all Australia’s native forests (private and public land) are protected for biodiversity conservation. With 73 percent of Australia’s identified old growth forests in formal or informal nature conservation reserves.
- 9 percent (36.6 million hectares) of the native forests were available and suitable for commercial wood production in 2010–11 comprising 7.5 million hectares of multiple-use public forests and 29.1 million hectares of leasehold and private forests.
- Forests protect soil and water resources and are increasingly being recognised for their carbon storage and sequestration capability. The total carbon stored in forests, wood and wood products and paper products was in the order of 400 million tonnes in 2010.
- Australia’s native and plantation forests provide the majority of the timber and a significant proportion of the paper products used by Australians.
- On average, each year, every Australian consumes the equivalent of about 1 cubic metre of harvested log in the form of timber products, including timber for home building, joinery and furniture and paper products.
- Australia’s forest management is among the best in the world in terms of conservation reserves and codes of practice for production forests.
- Australia has two forestry certification schemes that enable users of wood and wooden products to know the source of the wood.
- The sector directly employs 73,267 people in the forest and wood products industry in Australia (2011). This includes full and part time employees with 1.5 percent of all employees being Indigenous.

Sources: <http://www.agriculture.gov.au/forestry>  
<http://au.fsc.org/>  
<http://www.forestrystandard.org.au/>  
<http://www.naturallybetter.com.au/>



# Step 1: Engage with the topic

## Getting started

### Purpose

To provide students with opportunities to:

- gather information about student's prior knowledge about farms, different types of animals raised or crops grown and what they produce
- pool ideas and share with others
- learn about time and the days of the week
- organise the ideas they have about farming
- develop skills in making connections between ideas
- set directions for an investigation
- collate data for assessment purposes.

### Farms

Whether living on an isolated island, in a rural town, coastal area or in the heart of a city, farms can be explored so that students develop an understanding of the places people live, the animals and crops that are raised and grown on these places and where our food and fibres come from.

### Use an e-Book



**READ** the illustrated e-Books 'Farm Animals', 'What we have on farms' and 'I own it all' to introduce farms, the different types of animals and crops raised there and what they produce.

**SELECT** one text and encourage students to **SHARE** their initial impressions of the story. Ask questions such as:

- What did you like about the story?
- Who are the characters in the story?
- Where does the story take place?
- What happens in the story?
- What words are unfamiliar to you?
- What did you notice about the images in the story?



**VIEW** the covers, **READ** aloud the titles and use clues from the covers and student's background knowledge to formulate predictions about how the stories might unfold.



**READ** the stories and engage students in visualising the characters and their environs. See:

- [http://www.envirostories.com.au/es2012/es2012\\_CW\\_FarmAnimals/index.html](http://www.envirostories.com.au/es2012/es2012_CW_FarmAnimals/index.html)
- [http://www.envirostories.com.au/es2012/es2012\\_BRG\\_WhatHaveFarms/index.html](http://www.envirostories.com.au/es2012/es2012_BRG_WhatHaveFarms/index.html)
- [http://www.envirostories.com.au/es2012/es2012\\_CRC\\_Ownitall/index.html](http://www.envirostories.com.au/es2012/es2012_CRC_Ownitall/index.html)

### Immerse the students in the topic of farms



**SEE** the following You Tube videos:

- Old Macdonald had a farm: <http://www.youtube.com/watch?v=xjCAmKyMrPI>
- Farm Animals: <http://www.youtube.com/watch?v=f77KjedQ5Ug>
- Farm Animal Sounds: <http://www.youtube.com/watch?v=gkAsTg7Qyvw>



Formally **ASK** the class for questions that puzzle them or things they would like to find out about farms. **RECORD** the responses and **DISPLAY** them, or establish a question box for students. Share students' questions and seek answers to them.

### Brainstorm



**BRAINSTORM** ideas about how farm animals or crops are raised and grown and what they produce. **LIST** key words and **CREATE** a flow chart to show links between them.



## Step 1: Engage with the topic

Farms can be explored so that students develop an understanding of the places people live, the animals and crops that are raised and grown on these places and where our food and fibres come from.

### Personal responses



Find out what students now know about farm animals, their basic needs and what they produce. Encourage students to tell, **WRITE** or **DRAW** their ideas. Display these for future reference.



Each group reports to the class, synthesising ideas collated by the class. **DISPLAY** responses around the classroom.



If questions emerge from this activity, **RECORD** these and display them for reference throughout the unit.

Repeat each stage of this suggested activity using a farm crop focus too.

### Days of the week

Explain to the class that they will be working in small groups later in the unit, to **FIND** out more about what happens on a farm every day of the week. Find out what students already know about time and the days of the week.



**LEARN** the days of the week. View the You Tube video featuring the farmer 'Old McDonald' teaching four children the days of the week.

See: <http://www.youtube.com/watch?v=eAi5cQuK1Mk>

Try **SINGING** the days of the week to familiar tunes.

#### Every Week

(To the tune: "Twinkle, Twinkle, Little Star")

Every week has 7 days,

See how many you can say.

Sunday, Monday, Tuesday,

Wednesday, Thursday, Friday,

Saturday. What's today?

#### Days of the Week

(To the tune: Frere Jacques!)

These are all the

da-ays of the we-ek,

Sing with me,

Sing with me.

Sunday, Monday, Tuesday

Wednesday, Thursday, Friday

Saturday

A day to play.





## Step 1: Engage with the topic

### Days of the Week

(To the tune: "Twinkle, Twinkle, Little Star")

Sunday, Monday, Tuesday too.

Wednesday, Thursday just for you.

Friday, Saturday that's the end.

Now let's say those days again!

Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday!

Source: Can Teach <http://www.canteach.ca/elementary/songspoems4.html>

### Setting the task

Explain to the class that their task will be to work in small groups to **FIND** out more about what happens on a farm every day of the week and how farm animals or crops needs are met, and grown to produce food and fibre. Note: This is a suggested assessment task.



Explain that each group will either, **WRITE** and **DRAW, RECORD** and **VIDEO**, or **DESIGN** and **MAKE** a model of a farm accompanied by a text (that the teacher or teacher aid scribes) about what happens on a farm each day of the week and how farm animals or crops are grown, raised and cared for on farms.



Explain that later in the unit, each student will also **EXPLORE** if their family uses food produced by farm animals or crops, how and for what purpose. Explain that each student will **INTERVIEW** a family member or friend to find out what farm produced products they eat, use or wear. They will also **ASK** them for their favourite recipe that includes these foods.

Interview a family member to find out what farm produced products they eat, use or wear.



Created by Sienna Zienkiewicz, Whitefriars School, Adelaide SA



## Step 2: Explore the topic

### Explore someone's life through the story of one day

#### Purpose

To provide students with opportunities to develop their understanding of:

- typical activities undertaken on one day in a farm family's life
- farm animals, what they eat and drink, and where they live
- crops and what they need to grow
- the language of time and days of the week
- the needs of animals and crops on farms each day of the week
- how farmers grow their crops and raise and shelter their animals in different ways
- the forthcoming experiences in the 'Explain' stage of the inquiry.

#### A story of one day



As a class **VIEW** the video 'Why do cows make milk' at:  
<http://splash.abc.net.au/media/-/m/30240/why-do-cows-make-milk->

Using the video, **INTRODUCE** students to what happens on a dairy farm every day of the week.

**FOCUS** on the concept of time by asking the question 'How long is a day?'



**RECORD** student responses as 'I think a day is...'

**REPLAY** the video and identify any tasks the dairy farmer does every day.



**EXPLORE** further questions:

- What do cows produce every day for their calves?
- What might dairy farmers need to do every day of the week?
- What do cows eat and drink every day?
- How many times a day are dairy cows milked?



## RESEARCH TASK: PART 1

### Investigate farms and farm animals

Re-state to the class that they will be **LISTENING** to stories, **VIEWING** images, learning objects and using websites containing videos about farms to develop an understanding of:

- What happens on farms each day of the week.
- How farm animals or crops needs are met.
- How farm animals or crops are raised, provided shelter and grown to produce food.

### Form groups

Form groups and ask groups to:

**CHOOSE** a farm animal or crop.



**THINK** about what the farm animal or crop needs every day of the week i.e. water, food, shelter, space, air and protection from predators.



**DRAW** who might provide the farm animal or crop with what it needs to grow and be healthy.



**NAME** the days of the week that the farm animal or crop needs things like food and water; shelter and space plus air too.



**DRAW** or **MAKE** a model or **RECORD** a video showing what happens on the farm every day of the week and how animals or crops needs are met.

### View resources



Explain to the students that their task is to start researching. Invite students in their groups to **VIEW** the following videos and with the support of an adult, **RECORD** information for each one.



Students might **DRAW** or use invented spelling to **RECORD** ideas or the teacher or teacher's aide might scribe students' ideas.

#### Resource 1

Title: Where does bread come from?

Link: <http://splash.abc.net.au/media/-/m/30303/where-does-bread-come-from->

#### Resource 2

Title: Cotton on Koramba

Link: [http://www.envirostories.com.au/es2012/es2012\\_CRC\\_Koramba/index.html](http://www.envirostories.com.au/es2012/es2012_CRC_Koramba/index.html)

#### Resource 3

Title: My Life on a Sheep Farm

Link: [http://www.envirostories.com.au/es2012/es2012\\_CW\\_SheepFarm/index.html](http://www.envirostories.com.au/es2012/es2012_CW_SheepFarm/index.html)

#### Resource 4

Title: George the Farmer

Link: <http://www.georgethefarmer.com.au/>

Think about what the farm animals or crops need to grow and be healthy.



Talk about farm animals and they are being fed, where they are housed, whether their needs are being met.

### Farm images



Sitting in a circle give each student images of farm animals and crops. Students **SHARE** these and **TALK** about farm animals and crops they recognise and talk about what the animals are being fed, where they are housed, whether their needs are being met. **TALK** about crops too and what they need to grow and be healthy.

See: [Resource 1.1](#)

Ask students to **SHARE** ideas about animal’s needs on farms each day of the week i.e. they need food, water, space, shelter and air each day of the week.

Ask students to **SHARE** ideas about what a crop needs every day of the week i.e. they need water, good soil, sunshine and no pests or weeds in and around them.



**ASK** students questions like:

- What farm animals and crops do you recognise in the photographs?
- What might the farm animals eat and drink every day?
- What might farmers do to look after their animals and crops every day of the week?
- How might farmers provide a healthy space for animals and crops to grow?
- What things can be found on farms?
- What might happen on a pig farm, sheep farm, cattle farm and alpaca farm every day of the week?
- What might happen on a cotton farm every day of the week?

### Deciding on the farm animal or crop to find out more about

Encourage the students to **CHOOSE** a farm animal or crop to find out more about. Note: This is a suggested assessment task.



Explain that their task is to **FIND** out about types of farm animals, what they eat, what their homes are like, farm animal’s needs and products we get from farm animals.



Alternatively they can **FIND** out about crops grown on farms and what they need to grow and the products we get from farm crops (both food and household objects).



Re-state that each group of students will **WRITE** and **DRAW**, or **RECORD** and **VIDEO** or **DESIGN** and **MAKE** a model of a farm accompanied by a text about how an animal or crop is grown, raised and cared for on farms.

Invite students to **MAKE** a creation using concrete materials, iPads or computers to show how the chosen animal or crop is grown, raised and cared for on farms.



## Step 2: Explore the topic

### An apple story

Learn where apples are grown and how the apple farmer looks after the apple trees so they can grow fruit. See: <http://splash.abc.net.au/media/-/m/30276/growing-apples>



**TALK** about what the farmer grows and what he does to help the trees grow good fruit.



**ASK** questions like:

- If you sat still and watched and listened what might you see and hear on the apple farm?
- What would you do if you visited?
- What day of the week might you visit?
- What season of the year might you like to visit and why?



**DRAW** what you would most like to do when visiting an apple farm.

Learn where apples are grown and how the apple farmer looks after the apple trees so they can grow fruit.



# Step 3: Explain how farm animals or crops are raised and grown

## Purpose

To provide students with opportunities to:

- describe how farm animals or crops are grown, raised and cared for on farms every day of the week
- explore if their family uses food or fibre produced by Australian farmers
- gather information about the topic
- develop skills of formulating questions and gathering data
- develop communication skills: oral language and active listening
- develop the understanding of how we can learn from others
- develop a storyboard.

## Approaches to growing, raising and caring for farm animals or crops



Using the information gathered, each group prepares a presentation with their creation, explaining how farm animals or crops are grown, raised and cared for on farms every day of the week.

Encourage students to use their creation as part of their presentation.

## RESEARCH TASK: PART 2



Explain to the students that they will be **EXPLORING** if their family or friend uses food or fibre produced by Australian farmers, how and for what purpose.



Explain that each student will **INTERVIEW** a family member or friend to find out what Australian grown farm products they eat, wear or use and their favourite recipe or item that uses the product.

## Interviewing



Ask students what they know about interviews and what they are used for.



Then in pairs, ask students to **ASK** each other what farm products they eat; what farm products they wear and what farm products they use.



As a suggested homework activity, students might **INTERVIEW** a family member or friend about what farm products they eat, wear and use.



Students also **ASK** their interviewee for their favourite recipe or item that includes farm grown foods, or fibres.

Interview material can be **SHARED** in whole-class discussion.



## Step 3: Explain how farm animals or crops are raised and grown

### Decide on what to present and how to do so

**RE-STATE** the purposes of the interview and **ASK** students to consider how they are going to bring their information together and present it so that the main points come across clearly.

**MODEL** the construction of a collage. Students now use the information they have gathered to make a collage of the farm products their interviewee eats, wears and used plus their favourite recipe or item that uses these products.



Some students may choose a low-tech or no-tech option and have an adult at home **WRITE** a recount of the interview. Students might **PHOTOGRAPH** or **DRAW** the Australian farm products used by the family or friend and photograph or bring a copy of the family or friend's favourite recipe to class.



Created by Sienna Zienkiewicz, Whitefriars School, Adelaide SA

Interview a family member or friend about the Australian grown farm products they eat, wear or use and their favourite recipe or item that uses these products.



## Step 4: Elaborate on concepts and ideas

### Going further in understanding production systems

#### Purpose

To provide students with opportunities to:

- share if their family uses food or fibre produced by Australian farmers
- apply what they have learned and communicate the foods and fibres used and the family members favourite recipe or item based on Australian grown farm products
- plan their presentation
- share investigation findings.

#### Working with the data gathered from the interviews

A number of strategies can be used to help students make sense of the information the class as a whole has gathered. Some suggestions are:

- Prepare picture graphs or bar graphs using coloured frieze tape and **COLLATE** the class information about the Australian grown farm products most eaten and liked
- Prepare a **REPORT** to include in the school newsletter
- **COMPILE** a class e-Book of recipes based on the information gathered by the class
- **EMAIL** the Primary Industries Education Foundation and tell them about the favourite Australian grown farm recipes.

Email: [info@primaryindustrieseducation.com.au](mailto:info@primaryindustrieseducation.com.au)

As interviews are being processed, it is important to make explicit that the information has been told from one person's perspective and that many people like different recipes and some may not like to eat some vegetables, some wheat based products, some dairy foods or even meat. Alternatively, people like wearing clothes made from different fibres for different seasons and reasons.



**TALK** about allergies to some foods and fabrics, cultural preferences for some foods and general likes and dislikes of some foods and fibres.

#### Going further with the planning of the presentation

Invite students to **CONFIRM** the idea planned for their presentation. Note: This is part of the suggested assessment task.

Ask students to **CREATE** a final plan for completing the presentation. Students may with the help of an adult, need to document their key messages, create an image bank and **COLLATE** references and acknowledgements for their work sample. Invite them to summarise these and the learning achieved in a journal log or reflection.

#### Review and submit

Invite students to **REVISE** and fine-tune their presentation of the Australian grown foods and fibres used in the family and their favourite recipe or item.



**CONSIDER** hosting a 'Community Show & Tell' to showcase the students' work to the school community and beyond.



**DISPLAY** student's models, pictures and show videos to showcase what they know about how farm animals or crops needs are met every day of the week.



**DISPLAY** foods, clothes and other household items that families use that come from Australian grown foods and fibres.

**COOK** some recipes, have a fashion parade or natural fibres exhibition or invite parents to share these with the class.

Or **HOLD** a farm produce party!





# Step 5: Evaluating

## Think back and evaluate

### Purpose

To provide students with opportunities to:

- reflect on their own learning
- collate data for assessment.

To provide teachers with:

- insights into students' understanding and attitudes, as well as their perceptions of their own strengths and weaknesses.




### Reflections

Provide students with a set of focus questions for their writing. Ask students to use the 'smiley faces' to show how they feel about their learning. Suggest students colour the 'smiley face' to show how they have assessed themselves. Ask them to draw the section they liked best in the unit underneath their responses:

I did my best.   

I listened well.   

I worked with my partner.   

I could tell you what I know about how farms produce animals, crops and food and fibre that we eat, wear and use?   

I liked learning about \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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## Websites (viewed October 2014)

ABC Splash

- [http://splash.abc.net.au/media/-/m/30240/why-do-cows-make-milk-](http://splash.abc.net.au/media/-/m/30240/why-do-cows-make-milk)  
<http://splash.abc.net.au/media/-/m/30303/where-does-bread-come-from->  
<http://splash.abc.net.au/media/-/m/30276/growing-apples>

Australian Curriculum Reporting Assessment Authority (ACARA)

- <http://australiancurriculum.edu.au>

Australian Forestry Standard

- <http://www.forestrystandard.org.au/>

Australian Government: Department of Agriculture

- <http://www.agriculture.gov.au/forestry>

Australian Pork Limited

- <http://australianpork.com.au/>

Australian Southern Bluefin Tuna Industry Association (ASBTIA)

- <http://www.asbtia.com.au/industry/jobs-and-careers-tuna-industry/>

Can Teach

- <http://www.canteach.ca/elementary/songspoems4.html>

Cotton Australia

- <http://cottonaustralia.com.au/>

Daily Motion

- [http://www.dailymotion.com/video/x18si72\\_days-of-the-week-learn-english-nursery-rhymes-7-days-of-week\\_music](http://www.dailymotion.com/video/x18si72_days-of-the-week-learn-english-nursery-rhymes-7-days-of-week_music)

Envirostories

- [http://www.envirostories.com.au/es2012/es2012\\_CW\\_FarmAnimals/index.html](http://www.envirostories.com.au/es2012/es2012_CW_FarmAnimals/index.html)  
[http://www.envirostories.com.au/es2012/es2012\\_BRG\\_WhatHaveFarms/index.html](http://www.envirostories.com.au/es2012/es2012_BRG_WhatHaveFarms/index.html)  
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[http://www.envirostories.com.au/es2012/es2012\\_CRC\\_Ownitall/index.html](http://www.envirostories.com.au/es2012/es2012_CRC_Ownitall/index.html)

Fisheries Research Development Corporation

- <http://frdc.com.au/>

Forest Stewardship Council Australia

- <http://au.fsc.org/>

George the Farmer

- <http://www.georgethefarmer.com.au/>

Kids Cyber

- <http://www.kidcyber.com.au/>

Meat and Livestock Australia

- <http://www.mla.com.au/Home>

Visit Farmer Bob's Farm

- <http://www2.ca.uky.edu/agripedia/agmania/visit/>

### Wood Naturally Better

<http://www.naturallybetter.com.au/>

### YouTube videos

[http://www.youtube.com/watch?annotation\\_id=annotation\\_205468&feature=iv&index=13&list=PLC94256E76C3340DD&src\\_vid=gkAsTg7Qvyw&v=p00B\\_IDND4k](http://www.youtube.com/watch?annotation_id=annotation_205468&feature=iv&index=13&list=PLC94256E76C3340DD&src_vid=gkAsTg7Qvyw&v=p00B_IDND4k)

<http://www.youtube.com/watch?v=mSchoyVzH8c>

<http://www.youtube.com/watch?v=xjCAmKyMrPI>

<http://www.youtube.com/watch?v=f77KjedQ5Ug>

<http://www.youtube.com/watch?v=gkAsTg7Qvyw>

<http://www.youtube.com/watch?v=eAi5cQuK1Mk>

<http://www.youtube.com/watch?v=vAHOBTVZaq8>

## Resource 1.1 – Farm images



*Photo courtesy of Australian Pork Limited*



*Photo courtesy of Australian Pork Limited*



Photo courtesy of Meat & Livestock Australia



Photo courtesy of Meat & Livestock Australia



Photo courtesy of Meat & Livestock Australia



Photo courtesy of Meat & Livestock Australia



Photo courtesy of Cotton Australia. Photographer: Amanda Platt



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