



AN EDUCATIONAL UNIT FOR JUNIOR PRIMARY SCHOOLS



Out and about on farms

FOUNDATION

Design and Technologies,
and Geography

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The material in this Unit of Work is made available for the purpose of providing access to general information about food and fibre production and primary industries in Australia.



As content of the websites used in this unit is updated or moved, hyperlinks may not always function.

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 Primary Industries Education Foundation Australia 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.

Source: Primary Connections <http://www.primaryconnections.org.au/about/teaching>

Resource description

This resource material aims to help teachers and students in junior primary classes explore Australian farms as places where people live.

Students are given an insight into ways Australian farmers are producing food and fibre, for food, clothing and shelter.

Students explore features of Australian farms using a range of media and represent these on collaborative maps.

Students are given an insight into why some places are important to people and ways Aboriginal and Torres Strait Islander Peoples and farmers care for places.

During the unit, the students investigate places where different foods and fibres are produced in Australia; the features of these places; what makes them special; and how they are cared for.

Having explored a variety of places where different foods and fibres are produced, students draw, scribe or write texts and create picture maps that are added to a class interest centre.

Year level: Foundation

Curriculum focus

It contains a unit of work in **Geography** and **Design and Technologies** with a variety of student activities selected as vehicles to help students:

- Investigate and explore Australian farms as places where people live.
- Investigate ways Australian farmers are producing food and fibre, for food, clothing and shelter.
- Investigate and describe the features of farms and recognise why some farms are special to people.
- Observe the familiar features of farms and represent these features and their location on pictorial maps and models.
- Identify and describe the natural, managed and constructed features of places on farms and recognise that spaces can be arranged for different purposes.
- Identify changes in features and describe how to care for places.
- Select ideas and undertake an inquiry.
- Reflect on the actions farmers are taking to care for farms and the animals and crops they grow.

Teachers will find, as they examine this unit and its student activities that there are some learning areas which are more strongly represented than others. This is a consequence of the subject matter with which students are dealing. Aboriginal and Torres Strait Islander histories and culture and sustainability are the dominant cross curriculum priorities, and **Design and Technologies** and **Geography** learning areas feature strongly in the unit as the topics deal food and fibre production, features on farms, characteristics of these features, and how farms are cared for. English and critical and creative thinking are featured strongly throughout the activities.

Based on Australian Curriculum, Assessment and Reporting Authority (ACARA) materials downloaded from the Australian Curriculum website in February 2015. ACARA does not endorse any changes that have been made to the Australian Curriculum.

Students investigate places where different foods and fibres are produced in Australia; the features of these places; what makes them special; and how they are cared for.

Australian Curriculum content descriptions

Geography Foundation

Strand: Geographical Knowledge and Understanding

The representation of the location of places and their features on maps and a globe

[ACHGK001](#)

The places people live in and belong to, their familiar features and why they are important to people [ACHGK002](#)

The Countries/Places that Aboriginal and Torres Strait Islander Peoples belong to in the local area and why they are important to them [ACHGK003](#)

Strand: Geographical Inquiry and Skills: Observing, questioning and planning

Make observations about familiar places and pose questions about them [ACHGS001](#)

Strand: Geographical Inquiry and Skills: Collecting, recording, evaluating and representing

Record geographical data and information collected by observation [ACHGS002](#)

Represent the location of features of a familiar place on pictorial maps and models [ACHGS003](#)

Strand: Geographical Inquiry and Skills: Reflecting and responding

Reflect on their learning to suggest ways that they can look after a familiar place [ACHGS006](#)

Design and Technologies Foundation – Year2

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](#)

Cross Curriculum Priorities

Aboriginal and Torres Strait Islander histories and cultures

- OI.2:** Aboriginal and Torres Strait Islander communities maintain a special connection to and responsibility for Country/Place throughout all of Australia.
- OI.3:** Aboriginal and Torres Strait Islander Peoples have unique belief systems and are spiritually connected to the land, sea, sky and waterways.
- OI.5:** Aboriginal and Torres Strait Islander Peoples' ways of life are uniquely expressed through ways of being, knowing, thinking and doing.
- OI.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

- 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 February 2015.

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 in the **About the approach** section of this unit and content descriptions in the early years in Geography and Design and Technologies 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 YouTube 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 junior primary 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 italic: **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. There are, however, two stages in the unit that are central to assessment: the **Engage** stage and the **Evaluate** stage. Work that is undertaken in these stages can assist teachers to monitor growth and observe concrete examples of the way student ideas have been refined or have changed through the unit sequence. Work samples should be retained for this purpose.

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 this unit.

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 Information and Communication Technology 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 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 National Farmers' Federation Annual Congress – Prime Minister's Science, Engineering and Innovation Council (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: Australian Bureau of Agricultural & Resource Economics and Sciences (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. 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 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, 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, 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: ABARES, 2013 http://data.daff.gov.au/data/warehouse/9aam/afstad9aamd003/2012/AustFishStats_2012_v1.0.0.pdf



Australia's marine domain covers around 10 million square kilometres.

Cotton Industry

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

40% 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 New South Wales and Southern Queensland 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. 63 percent were in New South Wales and 37 percent were in Queensland. Of those farms cotton makes up 17 percent of land area on farm.

Source: *Cotton Annual 2014*.

- 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*, *Cotton Research and Development Corporation*.

- 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 (Cotton Research and Development Corporation and Cotton Catchment Communities Co-operative Research Centre)*.

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

Pork Industry



Australia's pig herd is one of the cleanest in the world.

- 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% of its 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/>
<http://www.forestlearning.edu.au/>



Step 1: Engage with the topic

Getting started

Purpose

To provide students with opportunities to:

- develop understandings about the different places people live and the features of these places
- develop ideas about places where people grow food and fibre
- gather information about their prior knowledge of farms
- pool ideas and share with others
- organise the ideas they have about farms as places where people live and grow food and fibre
- set directions for an investigation.

Invite family members from a variety of backgrounds to visit and talk about their families and the places they live.

Places where people live

Whether living on an isolated island, in a rural town, on a farm, in a coastal area or in the heart of a city; all people live in places.



BRAINSTORM a range of known places where the students in the class and other people live. **CONSIDER** urban families, farm families, rural families, Indigenous families, refugee families, migrant families, isolated families, apartments, houses, flats, caravans, farms, stations.



Invite family members from a variety of backgrounds to **VISIT** and **TALK** about their families and the places they live. Encourage them to present photographs of the place they live in and previous places in Australia and other countries.



EXPLORE the different places people live in around the world using images at: <http://www.globaleducation.edu.au/resources-gallery/resource-gallery-images.html> and <http://www.hgpho.to/wfest/house/house-e.html>



EXPLORE and **DISCUSS** the images of different places and consider;

- Are these places similar or different to the place I live in? How?
- What are the names for the different types of places? For example: shelter, flat, caravan, boat, unit, farm.
- What materials are these homes made from? Why?
- Where are they located?
- Are they in the city or country?
- What other interesting things can we see about these places?

Places where people grow food and fibres



Ask students to **TALK** about the places where foods like meat, vegetables, wheat, fish, fruits, eggs, nuts, seafood, and milk are grown and then share this with a partner. As a class **LIST** all the different types of foods suggested by students and their ideas about the places they are grown.



Ask students to **SHARE** the places where they think fibres like cotton, wood and wool are grown?



RECORD all ideas.

EXPLAIN to the students that in this unit they will be investigating places where different foods and fibres are produced in Australia; the features of these places; what makes them special; and how they are cared for.



Step 1: Engage with the topic

Focus on the range of people in different countries facing food security issues.

Brainstorm



BRAINSTORM what is known about farms. **CONSIDER** questions like:

- What do we understand about pig farms?
- What do we know about cattle and sheep farms?
- What do we know about cotton farms?
- What have we heard about fish farms and aquaculture farms?
- What do we know about tree farms or plantation forests?



DISPLAY brainstorm lists around the classroom. If questions emerge from this activity, **RECORD** these and display them for reference throughout the unit.



Step 2: Explore places that produce food and fibre

Purpose

To provide students with opportunities to develop their understanding of:

- a variety of places where people grow food and fibre
- where foods and fibres are farmed
- geographical language used to describe places
- features of places that grow food and fibre
- a focus for the forthcoming experiences in the 'Explain' stage of the inquiry.

Visit farms



Where possible, **COORDINATE** a visit to a local farm to directly find out more about the places on the farm, what it grows, the running of the farm, and the way the farm is cared for. If interested contact the Primary Industries Education Foundation Australia and email info@primaryindustrieseducation.com.au

Where possible, **ARRANGE** a Skype or Virtual session with a farmer.

Read for information



LEARN more about places where foods and fibre are grown by reading Envirostories.



In reading groups, ask students to **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.



Ask students to **VIEW** the covers, read aloud the titles and use clues from the covers and students' background knowledge to formulate predictions about how the stories might unfold.

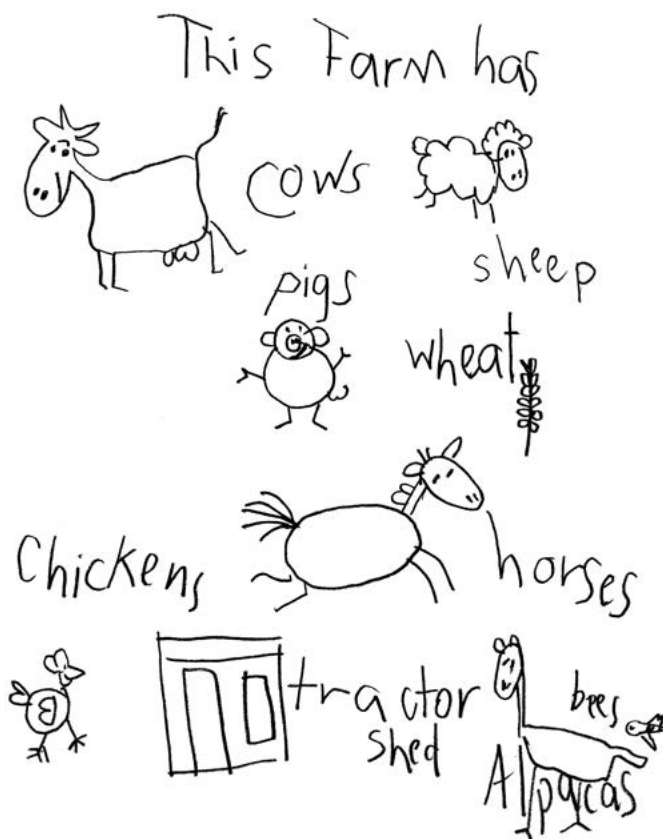


After students have **READ** the stories, engage them in visualising the characters and the environs. See: http://www.envirostories.com.au/es2012/es2012_CW_FarmAnimals/index.html
http://www.envirostories.com.au/es2012/es2012_BRG_WhatHaveFarms/index.html
http://www.envirostories.com.au/es2012/es2012_CRC_Ownitall/index.html



Ask students to **DRAW** or **WRITE** about what these places are like.

Find out about the places on a farm, what it grows, the running of the farm, and the way the farm is cared for.



Drawing by Lexie – 5 years old



Step 2: Explore places that produce food and fibre

Talk with students about geographers and how they study the Earth's surface as the space in which people, plants and animals live.

Features of places

TALK about the features of the students where people live. For example 'What features do your homes have? Do they have doors, windows, gardens, fences, paths, roofs, verandas, balconies?'

REFLECT back on the places seen and read about in the Envirostories in the earlier activity and talk about the features of these places.



RE-READ the story titled '*What we have on farms*', and explore the features mentioned on this particular farm. For example: cows, sheep, pigs, wheat, horses, chickens, tractors, paddocks, bees, alpacas, goats, roosters, dogs and vegetable gardens.



TALK about the characteristics of this particular farm.

DRAW pictures of the farm and its features (see student work on the previous page).



SCRIBE or **WRITE** accompanying captions about the farm and its features.

DISPLAY in an interest centre entitled '*What we have on farms*'.

Features of farms



Re-state to the class that they will be **INVESTIGATING** places where different foods and fibres are produced in Australia; the features of these places; what makes them special; and how they are cared for.

Introduce geographical language



TALK with students about geographers and how they study the Earth's surface as the space in which people, plants and animals live.

Let them know that geographers ask questions about places, like:

- Where is it?
- What is it like?
- Why is it there?
- When did it happen?
- Who is involved?
- What impact does it have?
- How should it be altered or managed?



TALK about the language they use. **INTRODUCE** terms about places like: country, continent, island, ocean, seas, lakes, surroundings, city, town, country town, farm, forest, plantation, mountain, native forests, suburb, rural area, neighbourhood, bush and coastal town.



Step 2: Explore places that produce food and fibre

Form groups

Focus on farms as places. **FORM** groups and ask groups to:

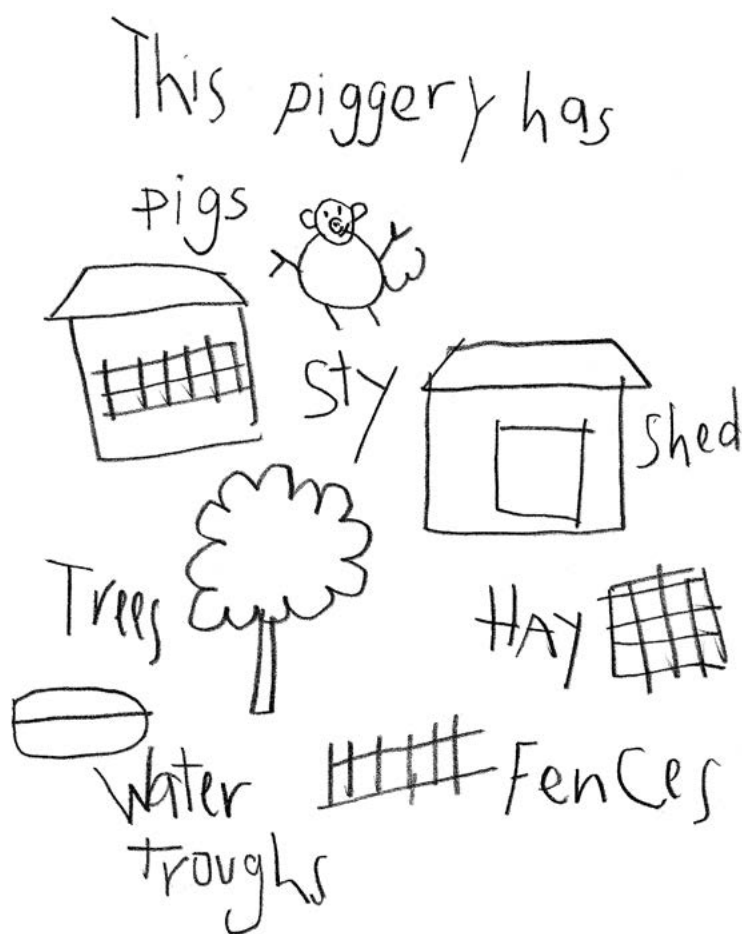


- Use the illustrations of farms located in **Resource 1.1** to **FIND** places and locations on farms.

- **EXPLORE** features of the place featured in each illustration.



- Ask students to **CHOOSE** a farm and **DRAW** the features of this place (see student work sample below).



Drawing by Lexie - 5 years old



Step 3: Explain different places

Purpose

To provide students with opportunities to:

- describe places on farms
- describe places where they live
- understand more about places where some Aboriginal people belong to and ways places provided food and fibre for them
- understand more about places where some Torres Strait Islander people belong to and ways places provided food and fibre for them
- explore how places are important to people
- be introduced to maps
- make a collaborative map.

Talk about the places students live in and their features. Ask them to describe what they can see, smell, hear and feel at their place.

Making connections



Ask students to **DRAW** a farm of their choice that they have learned about accompanied by a scribed text that describes the features of the place and what is grown and farmed there.

Add to the class interest centre

Note: The teacher or teacher aide may need to scribe ideas for some students in Year 1.



Invite students to add information, including **DRAWINGS** and **CAPTIONS** of farms and their features to the class interest centre.

Features of places – personal responses



TALK about the places students live in and their features.

Ask them to **DESCRIBE** what they can see, smell, hear and feel at their place.

REMINd students that in Geography we ask ‘what and where questions’ – about people and places, their features and locations.



Ask students to **DESCRIBE** what their place is like:

- The place I live in is in a street called...
- The place I live in is in the suburb of...
- The place I live in is surrounded by...
- My neighborhood has...



Invite students to **DRAW** the place they and their family members live in and include building features such as windows, doors, garage... garden features such as trees, veggie patch, a flower bed...play equipment such as sand pit, trampoline...

Use an Aboriginal perspective



READ the story of the Ngunnawal Peoples and the special places that provided them with food and fibres aloud to the class.

http://www.tams.act.gov.au/_data/assets/pdf_file/0004/396904/Aboriginal_Cultural_Heritage_of_the_ACT.pdf

Use a Torres Strait Islander perspective



FIND OUT about Phil Wallis – a Traditional owner and the special place that is important to him and his people.

<https://www.youtube.com/watch?v=rmttpaH5IR4&list=UUnoxDA5iji0limevCrFQVSA&index=19>



Step 3: Explain different places

Special places



EXPLORE and **DISCUSS** special things and places and consider;



- What places are special?
- What are the features of my special place?
- How can you care for a special place?

Point out that some places have special significance to Aboriginal and Torres Strait Islander peoples. Many Aboriginal and Torres Strait Islander Australians have spiritual connections with land, water and air. Refer back to the Ngunnawal people's story and where possible talk with Aboriginal or Torres Strait Islander people about their spiritual connections with the land.

Farms as special places



VIEW 'We're bush kids, and we love it' at: <http://vimeo.com/75170201>

TALK about what makes this place special to the kids who live there.



FIND OUT what makes two city kids find their grandparent's farm special at: <https://open.abc.net.au/projects/video-postcards-30rs6yp/contributions/postcard-from-broomfield-46aw3cq>

Get drawing



Invite students to **DRAW** a place that grows food or fibre and its surroundings and **LABEL** the special features they recall outside and inside the place.

REPEAT these steps for another place that has been investigated.

Make a collaborative class map

INTRODUCE the term 'map'. **ASK** what a map might be.

SHOW students different maps, for example Google Maps, a road map, plan of the school, street directory, a world map. **EXPLAIN** how maps are an explanation of places.

INTRODUCE the students to the concept of a 'key' on maps. **EXPLAIN** to the students how a key helps people to read a map. Refer back to a road map, plan of the school, street directory, or a world map and locate and show the students the key.

INTRODUCE the different symbols used in the key and on the map. **TALK** about the places they stand for.



RECALL the earlier farms using **Resource 1.1** and the places people grow food, crops and timber. Then, as a class, collectively **DRAW** a picture map to show where some of the features and elements on the farms were found.



REMIND students that the class map needs a key. As a class, **DECIDE** on the symbols to use for the features on the class picture map.

- For example, if using the piggery, **LOCATE** where their shelter, water troughs and feed were located. **DECIDE** what symbols to use for these features.

Some places have special significance to Aboriginal and Torres Strait Islander peoples. Many Aboriginal and Torres Strait Islander Australians have spiritual connections with land, water and air.



Step 3: Explain different places

As a class,
collectively draw
a picture map to
show where some
of the features and
elements on the
farms were found.



- If using the sheep and cattle farm, **DRAW** a pictorial map showing the farm house, gate, dam, fences, sheds, cattle and sheep. **DECIDE** what symbols to use for these features.
- If using the aquaculture farm, ask students collaboratively to **SHOW** the sea cages, feed barge, feed lines and mooring buoys. **DECIDE** what symbols to use for these features.
- When using the illustration of the cotton farm, ask students to **REPRESENT** the irrigated cotton field, reservoir, paddock with dry land wheat, dry land cotton and the fallow paddock on a picture map. **DECIDE** what symbols to use for these features.
- Ask students to also **REPRESENT** the location of features of the Eucalyptus plantation, *Pinus radiata* plantation and saw mill on a pictorial map. **DECIDE** what symbols to use for these features.

ADD picture maps to the class interest centre.



Drawing by Lexie - 5 years old



Step 4: Elaborate on concepts and ideas

Purpose

To provide students with opportunities to:

- learn about how places that produce food and fibre are cared for
- investigate illustrations representing farms
- apply what they have learned
- share investigation findings.

Talk about the need to provide food, water, shelter, clean air and space for animals to grow.

Discuss how crops need water, sunlight and to be free of weeds and pests to grow.

Caring for places



Talk with the class about how places that are special are also usually cared for. **BRAINSTORM** ideas about how farmers might care for the animals and crops they grow.



TALK about the need to provide food, water, shelter, clean air and space for animals to grow.

DISCUSS how crops need water, sunlight and to be free of weeds and pests to grow.



REVIEW the illustrations in **Resource 1.1** and ask students to **IDENTIFY** ways the pigs in the piggery are being cared for.

Ask questions like:

- Can you locate things that the pigs need to be healthy? (for example: feed, water, shelter, space, and clean air)



REFLECT on the cattle and sheep farm and ask students to **LOCATE** images that identify how these animals are cared for.



LOOK at the aquaculture farm and ask students to **IDENTIFY** ways farmers are caring for the salmon farmed there.



REFLECT on the cotton farm and ask students to **DESCRIBE** ways the cotton being grown might be cared for.



Lastly, **VIEW** the illustration of the plantation and native forests and ask students to **DESCRIBE** what the forester may need to do to ensure that the trees grow to be tall and strong to produce timber.

Play a game

Recall features of farms and their features and **PLAY** a game... On this farm there are special creatures... guess what one is by checking its features...

Download an App



Learn more about farms, farming practices and food and fibre production.

DOWNLOAD 'George the Farmer' from <https://itunes.apple.com/au/app/george-farmers-australian/id892654793?mt=8>

This App is designed for both iPhone and iPad.

Note a series of flash cards have been produced that are being distributed through social media, <https://www.facebook.com/GeorgetheFarmerAU>

Debrief



As a class, **DISCUSS** what students have learned about places like farms; what makes them special and ways farmers care for these places.



Step 5: Evaluating

Think back and evaluate

Purpose

To provide students with opportunities to:

- reflect on their own learning.

To provide teachers with:

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

Reflections



Ask students to use the 'smiley faces' to **SHOW** how they feel about their learning. Suggest students **CIRCLE** or **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 well with others.



I can tell you about features of farms.



I can tell you about ways people care for their animals and crops on farms.



I liked learning about:

References

- Australian Academy of Science (2005) *Primary Connections*, Canberra, Australia.
- Boothroyd, J. (1972) *Map my Home*. Lerner Publishing Group, Incorporated. USA.
- Cecil, N. (1995) *The Art of Inquiry: questioning strategies for K-6 classrooms*, Peguis, Canada.
- Crockett, L., Jukes, I. & Churches, A. (2011) *Literacy is not enough. 21st Century Fluencies for the Digital Age*. 21st Century Fluency Project Inc.
- De Bono, E. (1992) *Six Thinking Hats for Schools, Books 1 & 2*, Hawker Brownlow Educational.
- Development Education Centre. (1994) *Long Ago and Far Away*, Development Education Centre, Birmingham.
- Gardner, H. (1985) *Frames of Mind: the theory of multiple intelligences*, Basic Books, New York.
- Hamston, J. and Murdock, K. (1996) *Integrating Socially: units of work for social education*, Eleanor Curtin, Melbourne.
- Hill, S. and Hill, T. (1990) *The Collaborative Classroom*, Eleanor Curtin, Melbourne.
- Wilks, S. (1992) *Critical and Creative Thinking: strategies for classroom enquiry*, Eleanor Curtin, Melbourne.

Websites (viewed February 2015)

This is a list of websites used in this unit for teacher use. As content of the websites used in this unit is updated or moved, hyperlinks may not always function.

Australian Broadcasting Corporation. ABC Open.

Postcard from Broomfield <https://open.abc.net.au/projects/video-postcards-30rs6yp/contributions/postcard-from-broomfield-46aw3cq>

ACT Government. Territory and Municipal Services - Ngunnawal Country

http://www.tams.act.gov.au/_data/assets/pdf_file/0004/396904/Aboriginal_Cultural_Heritage_of_the_ACT.pdf

Australian Curriculum, Assessment and Reporting Authority. Australian Curriculum

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

Australian Forestry Standard

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

Australian Government Department of Agriculture - Forestry

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

http://data.daff.gov.au/data/warehouse/9aam/afstad9aamd003/2012/AustFishStats_2012_v1.0.0.pdf

Australian Pork Limited

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

Commonwealth of Australia: Global Education website

<http://www.globaleducation.edu.au/resources-gallery/resource-gallery-images.html>

Cotton Australia

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

Creative Commons

<http://creativecommons.org/licenses/by/3.0/au/deed.en>

Envirostories

Farm Animals http://www.envirostories.com.au/es2012/es2012_CW_FarmAnimals/index.html

What we have on farms http://www.envirostories.com.au/es2012/es2012_BRG_WhatHaveFarms/index.html

I own it all http://www.envirostories.com.au/es2012/es2012_CRC_Ownitall/index.html

Facebook - George the Farmer

<http://www.facebook.com/GeorgetheFarmerAU>

Fisheries Research Development Corporation

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

Forest Learning

<http://forestlearning.edu.au>

Forest Stewardship Council Australia

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

Garnaut Climate Change Review

<http://www.garnautreview.org.au/index.htm>

George the Farmer

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

References

Haga Library - Houses around the world

<http://www.hgpho.to/wfest/house/house-e.html>

iTunes app. George the Farmer's Australian Adventures

<https://itunes.apple.com/au/app/george-farmers-australian/id892654793?mt=8>

Meat & Livestock Australia

<http://mla.com.au>

National Farmers' Federation. Farm Facts 2012

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

Primary Connections

<http://www.primaryconnections.org.au/about/teaching>

Vimeo.

We're bush kids, and we love it <http://vimeo.com/75170201>

Wood Naturally Better

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

YouTube video

Great Barrier Reef Marine Park - Phil Wallis, Traditional Owner <https://www.youtube.com/watch?v=rmttpaH5IR4&list=UUnoxDA5iji0limevCrFQVSA&index=19>

Resources

Resource 1.1

Explore a piggery

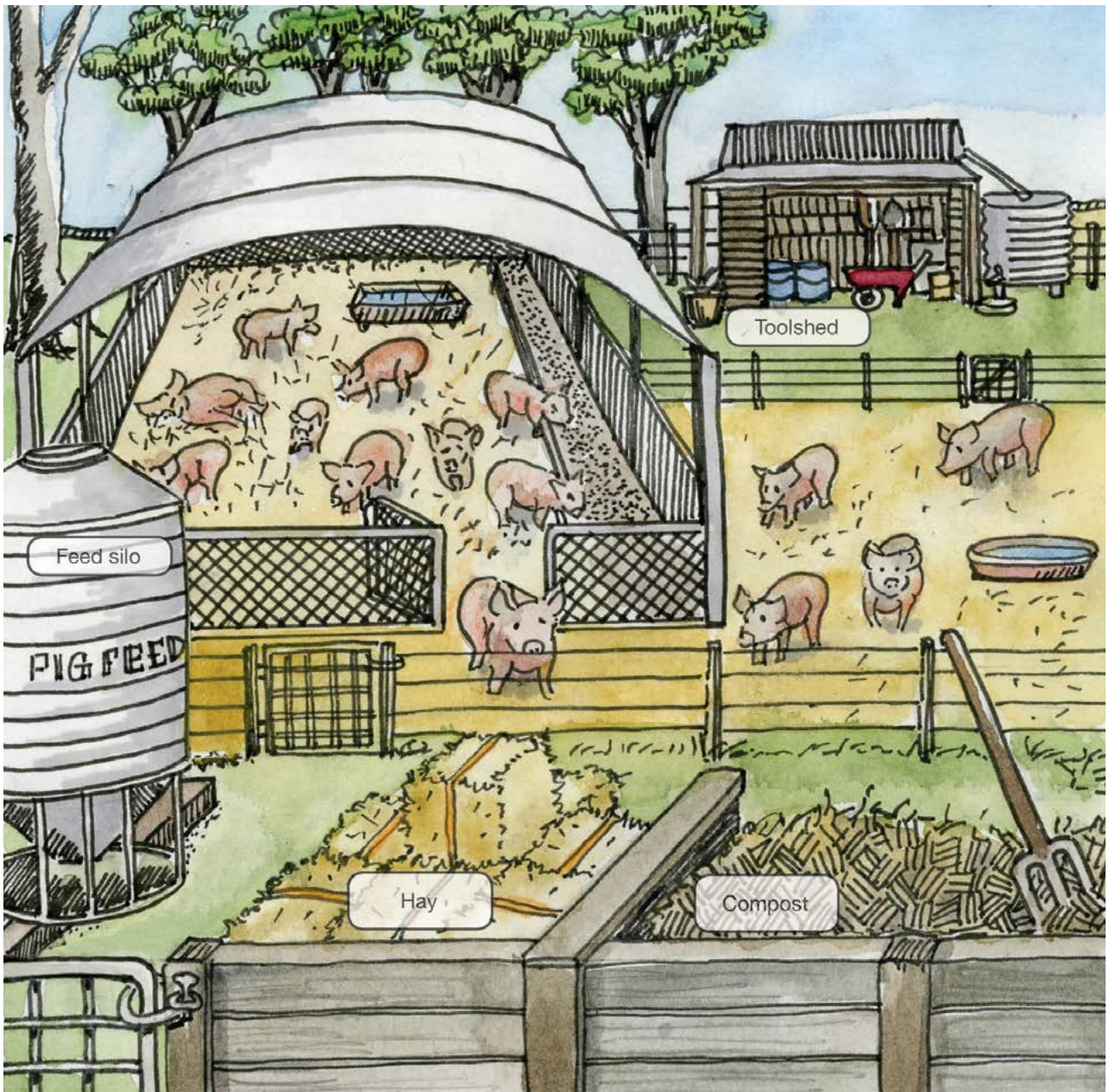


Illustration: Liz Grant, Designgrant

Explore plantation and native forest

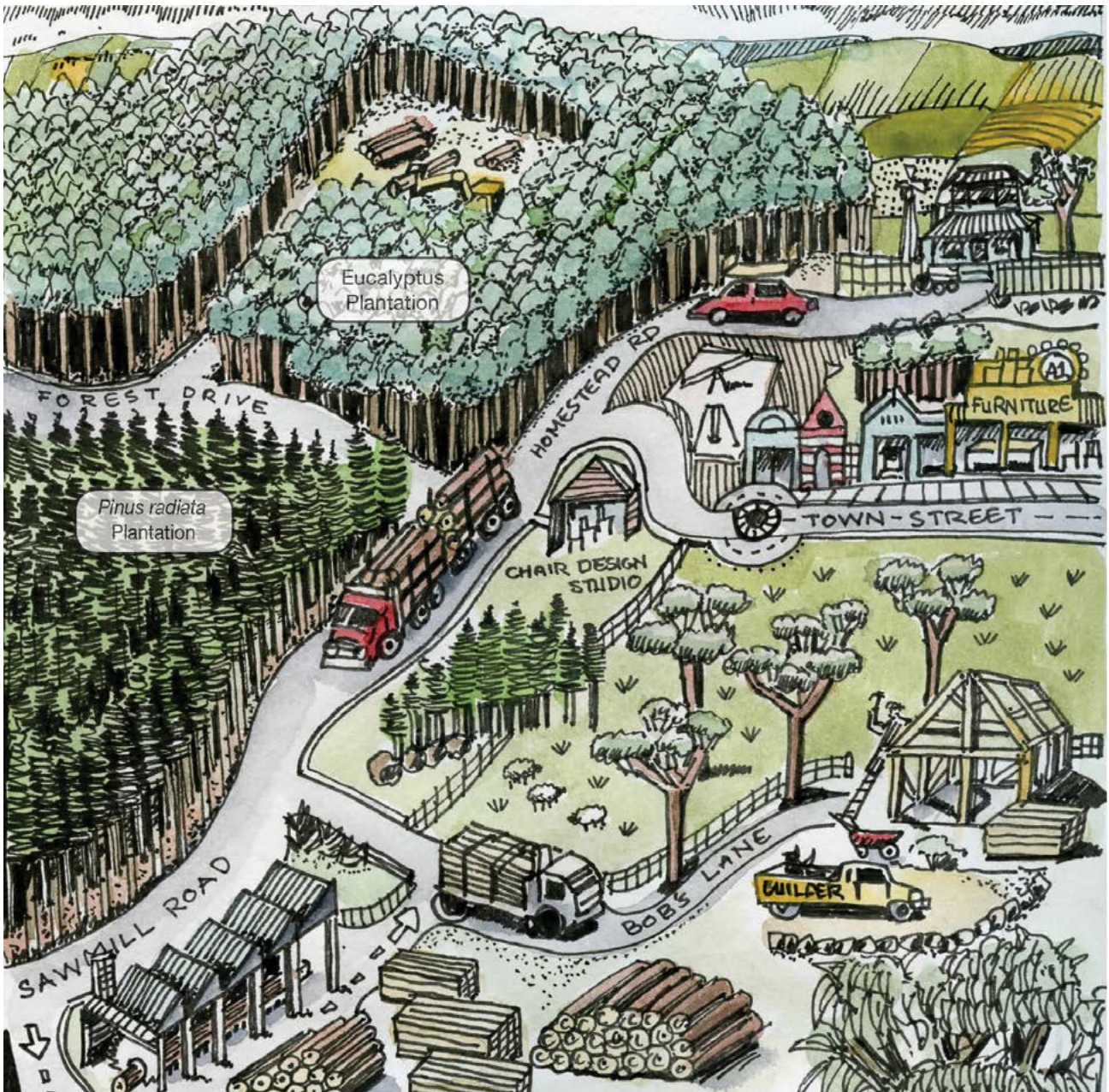


Illustration: Liz Grant, Designgrant

Explore a cattle and sheep farm

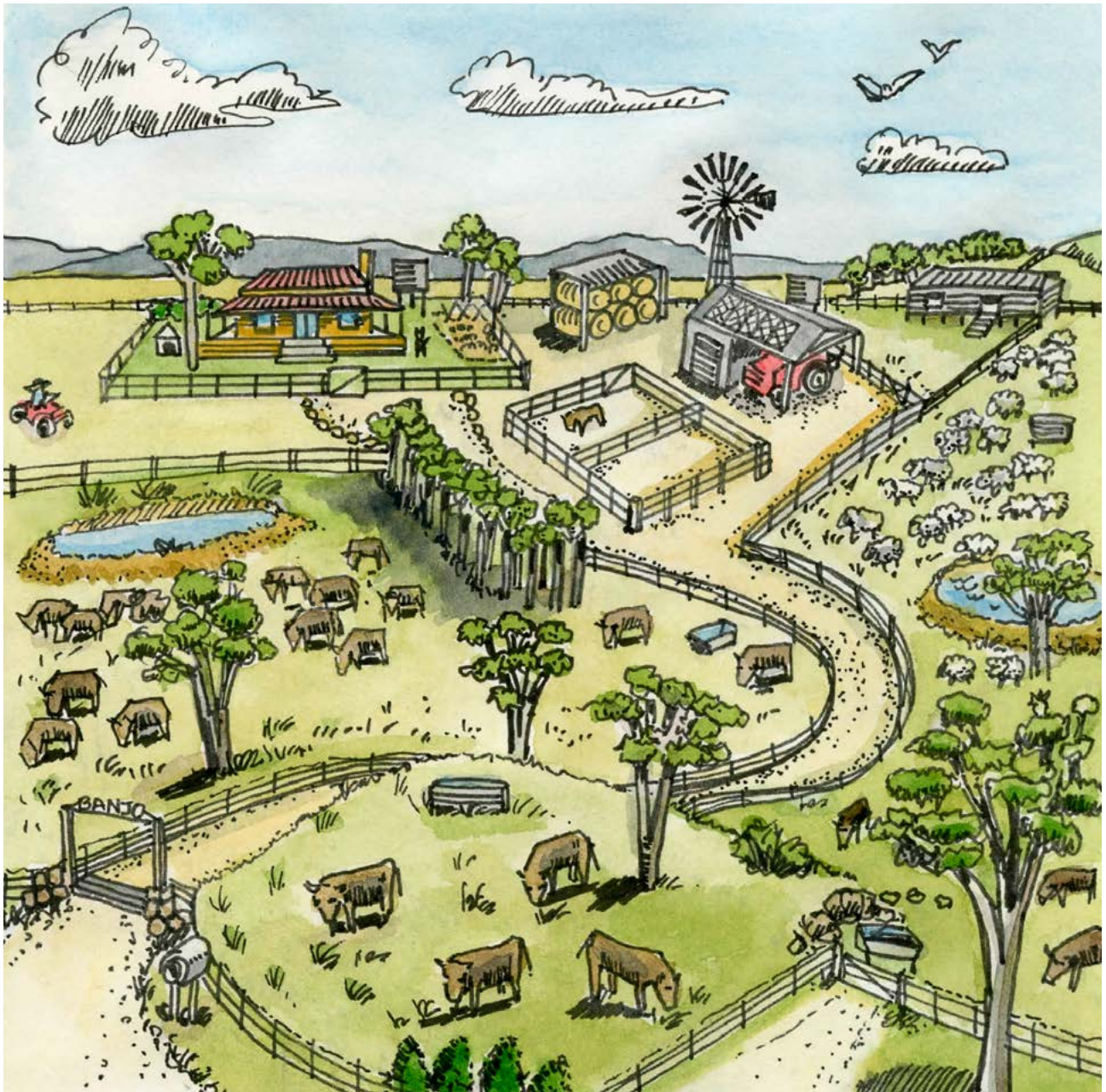


Illustration: Liz Grant, Designgrant

Explore a salmon farm

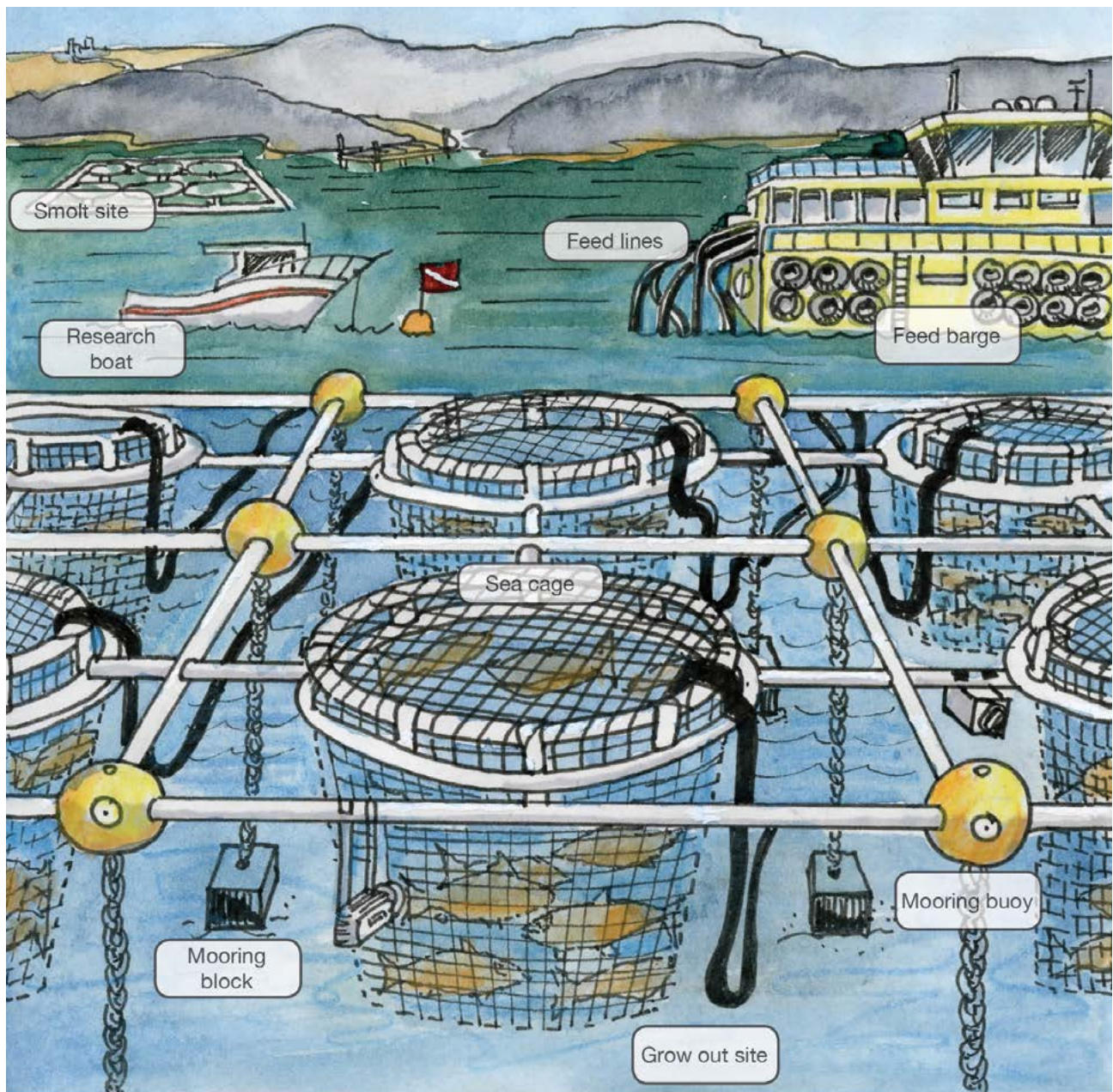


Illustration: Liz Grant, Designgrant

Explore a cotton farm

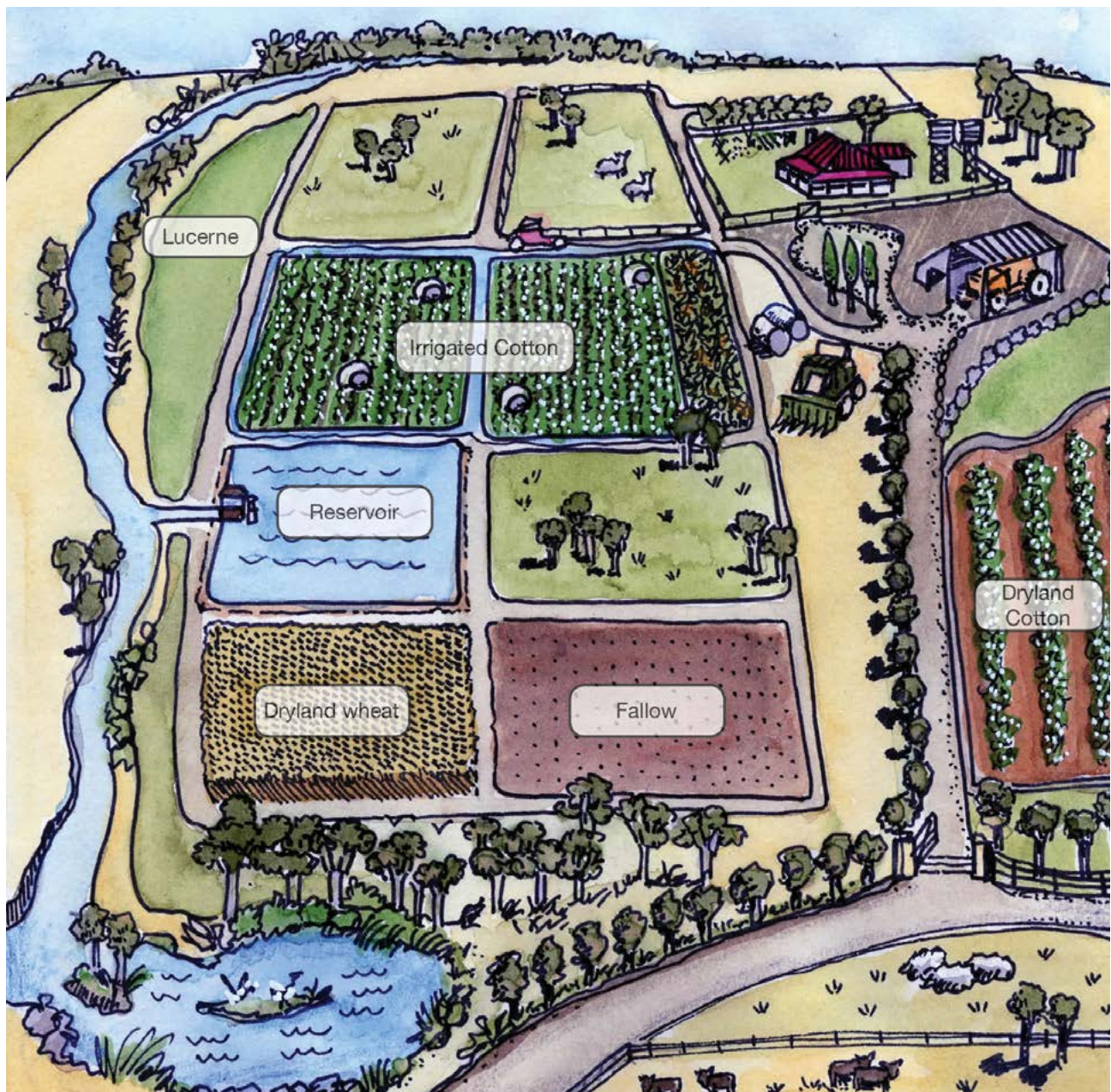


Illustration: Liz Grant, Designgrant

