



AN EDUCATIONAL UNIT FOR PRIMARY SCHOOLS



Discovering past methods of food and fibre production

YEAR 5

History and Geography

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Cover photo courtesy of Cotton Australia, photographer, Carly Donnelly

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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.

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.

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). 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 is a unit with five inquiry teaching sequences about food and fibre production in the past.

It includes sections on different meanings of the terms associated with food and fibre production; Aboriginal and Torres Strait Islander Peoples' ways of living with country; food and fibre produced by Aboriginal and Torres Strait Islander Peoples'; Early European people's ways of producing food and fibre; interconnections between peoples and places used to source and access food and fibre; and ways some food and fibre are produced in places today.

The unit endeavours to build on students' understandings about food and fibre; engage them in investigating historical and geographical contexts; and involve them in presenting their understandings about how traditional Indigenous communities and early Australians grew, fished and produced food and fibres.

Year 5 level

Curriculum focus

This is a unit of work for **History** and **Geography** with a variety of student activities selected as vehicles to help students:

- Investigate what food and fibre was accessed in the landscapes of First Australians and post-European settlement.
- Assess places where and the ways in which people have grown, fished and produced food and fibre and how their actions influence the environmental characteristics of places.
- Investigate concepts and ideas relating to how the past has influenced the present.
- Investigate concepts and ideas about land management, sustainable farming, sustainable fishing, climate adaptation and sustainability.
- Select ideas and undertake an inquiry.
- Reflect on and evaluate the success of the action primary producers are taking for improving sustainability, adapting to climate change and producing quality food and fibre products.

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. Sustainability and Aboriginal and Torres Strait Islander histories and culture are the dominant cross curriculum priorities. History and Geography learning areas feature strongly in the unit as the topics deal with the production of food and fibre, factors that shape the human and environmental characteristics of places, place and space, and change. English and the Arts, particularly Visual Arts also 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.

Build on students' understandings about food and fibre; and involve them in presenting their understandings about how traditional Indigenous communities and early Australians grew, fished and produced food and fibres.

Australian Curriculum content descriptions

History

Strand: Historical Knowledge and Understanding: The Australian colonies

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

The impact of a significant development or event on a colony; for example, frontier conflict, the gold rushes, the Eureka Stockade, internal exploration, the advent of rail, the expansion of farming, drought [ACHHK095](#)

Geography

Strand: Geographical Knowledge and Understanding

The influence of people, including Aboriginal and Torres Strait Islander Peoples, on the environmental characteristics of Australian places [ACHGK027](#)

The influence of the environment on the human characteristics of a place [ACHGK028](#)

The influence people have on the human characteristics of places and the management of spaces within them [ACHGK029](#)

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.3: Sustainable patterns of living rely on the interdependence of healthy social, economic and ecological systems.
- 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 on 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 Year 5 in History and Geography 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 Year 5 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 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. 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 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>

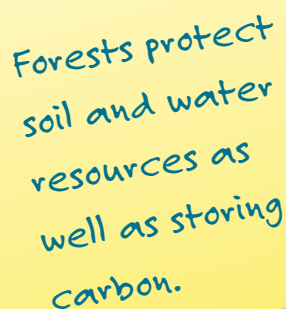
- Whether housed indoors or outdoors, a pig spends more time resting than any other domestic animal.
- Australia's pig herd health is one of the cleanest in the world, free from many detrimental diseases found in most other pig producing countries
- The feed component (mainly grains such as wheat, barley and sorghum) makes up about 60 percent of the total cost of producing pork.
- Pigs have a very wide angle of vision (310°) 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 food and fibre production

Getting started

Purpose

To provide students with opportunities to:

- gather information about their prior knowledge about food and fibre production
- pool ideas and share with others
- organise the ideas they have about food and fibre production
- develop skills in making connections between ideas
- help set directions for an investigation
- provide data for assessment purposes.

Brainstorm

Each day we eat particular foods, use and wear particular fibres grown by primary producers, farmers and fishers who use a variety of resources in their production processes.



Ask the class to undertake a **SEARCH** and **LOCATE** images of primary industries in action in Australia.



Using the National Farmers Federation presentation at:

<https://prezi.com/qvn0y5hn6dfj/nff-farm-facts-2012/> ask students to **CHOOSE** slide 3 and double click on images that have been selected to represent 'farms' or 'primary industries' in Australia.



Use the back button to **VIEW** all images provided and remember to use the 'zoom in' button to find 15 images.



Select a miniature image to view. After viewing click onto the whitespace (only once) to **FIND** other primary industries represented in the presentation.



DISCUSS these images and **RECORD** the different industries that have been represented by the visual icons. For example: apples, cotton, wheat, goats, cattle, bees, potatoes, wool, grapes, pigs, rice, barley, eggs and dairy cows.



SHARE the lists in groups. Note common industries seen.

CIRCLE key industries known to students and place question marks next to those that are unknown or create debate or controversy.

CLASSIFY lists into those that represent food or fibre industries.

DISPLAY brainstormed lists around the room.

OR

Use the 'pass the question' strategy outlined below, to complete a brainstorm.

DIVIDE the class into two working groups.



RECORD one question on each sheet of paper: What do we understand about food and fibre production?; What are primary industries? What have we heard about them in the media or from scientists, friends or family members?

DISTRIBUTE the sheets of paper, one set to each group.



Ask students to **BRAINSTORM** their responses to the questions.

After a designated period of time, each sheet is passed to the next group, where students **ADD** to the ideas already written by the previous group. Continue this activity until students are satisfied that the questions have been answered.



Each group reports to the class, synthesising ideas collated by the class. **DISPLAY** brainstorm lists around the classroom. If questions emerge from this activity, record these and display them for reference throughout the unit.



Develop a concept map describing what the class knows about food and fibre production – what it is, what it comprises, what it needs, what it affects, and why it’s important.

Word association



CONSIDER the words ‘farms’, ‘farming’, ‘agriculture’, ‘primary industries’, ‘fishing industry’, ‘forestry’, ‘agricultural industries’ and ‘food and fibre production’. List other words that student’s associate with them.



INVESTIGATE definitions and any associations the words may have.



Issues surrounding food and fibre production can have many confusing terms and use technical jargon. **ASK** students what they think the difference is between:

- Primary industries and agricultural industries.
- Food production and farming.
- Primary industry and agricultural sector.
- Primary industries and suppliers of food and fibre products.
- Fibre production and cotton farming.
- Farming and natural resource management.



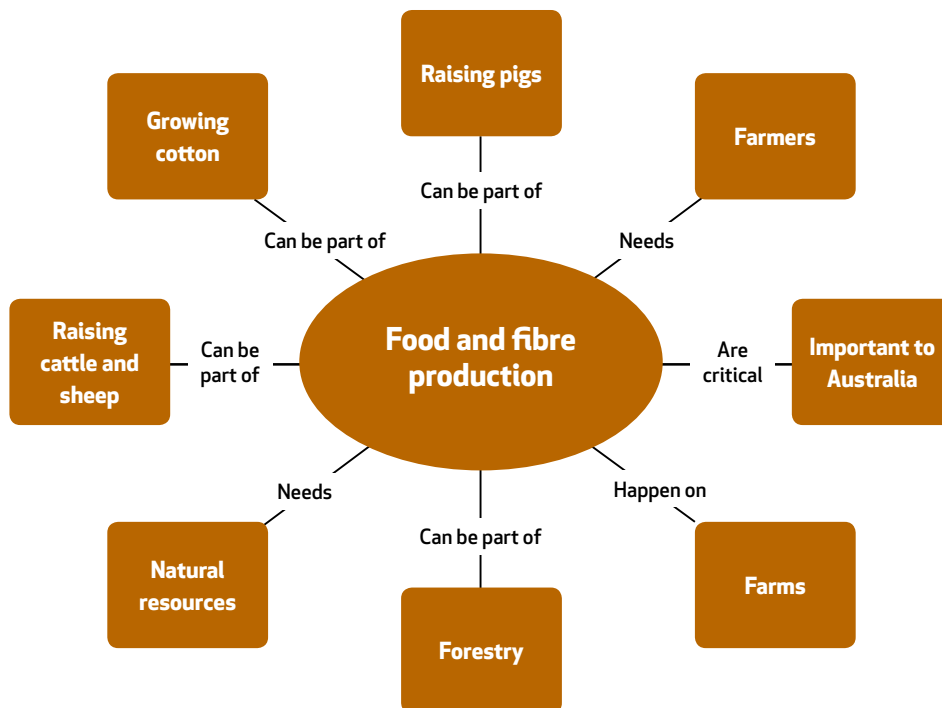
TALK about whether it is important to make distinctions between these terms?

Concept mapping

As a class **DEVELOP** a concept map describing what the class knows about food and fibre production – what it is, what it comprises, what it needs, what it affects, and why it’s important.



DEVELOP concept maps using key words. Students **DRAW** connecting lines between words and indicate how they believe their words relate to each other.





Step 1: Engage with the topic food and fibre production

For example:

OR

- STEP 1:** Give each student 10 small cards.
- STEP 2:** On one card they write the word/phrase that is the subject for the topic.
- STEP 3:** On the remaining cards they write/draw other words that they consider to be important in relation to the topic.
- STEP 4:** The cards are arranged in a way that makes sense to the student.
- STEP 5:** Students then show the way these ideas relate to each other by drawing lines or arrows between the related ideas. Words or connecting phrases are written on the line or arrow to make the connection clearer.
- STEP 6:** Generalisations can then be formed on the basis of the connecting ideas on the concept map.



TALK about how farms supply our food and fibre needs and wants, and where the products that satisfy our needs and wants come from.

Assessment note

Concept maps are useful for assessment purposes. Students could complete one at the beginning of the unit and then reconstruct it during and at the end of the unit to demonstrate their change in understanding.

Using the web

Improve understanding of food and fibre production.



Invite students to use the following web based source material to **FIND** additional information. Please note that YouTube videos may not be accessible to students at school. See:

FRDC YouTube Channel

<http://www.youtube.com/user/FisheriesResearchAU>

The Australian Cotton Story

<http://www.youtube.com/watch?v=cbKh1Xtfmao&list=UUcTsQcz7PRPX1b13J3ORvg&index=3>

Fish Files YouTube Channel

<http://www.youtube.com/user/FRDCFishfiles>

Aussie Pig Farmers

<http://www.aussiepigfarmers.com.au/types-of-farming/indoor-intensive-housing/>

Young Farming Champions

<http://archibullprize.com.au/yfc/ourteam.html>

Target 100 YouTube Channel

<http://www.youtube.com/Target100AUS>

Talk about how farms supply our food and fibre needs and wants, and where the products that satisfy our needs and wants come from.



Step 1: Engage with the topic food and fibre production

Explore the ways in which people have grown, fished, produced food and fibre, and how their actions influence the environmental characteristics of places.

Set the task

Note this is a suggested assessment task.

EXPLAIN to the students that in this unit of work they will be working in collaborative groups to explore places where and the ways in which people have grown, fished and produced food and fibre and how their actions influence the environmental characteristics of places.



Explain that their task is to **RESEARCH** either traditional Indigenous communities or early European settlers, how they grew, fished and produced food and fibres, and how their actions influenced the environmental characteristics of these places.



Invite students to **CONSIDER** questions like:

- What do we know about the past?
- How did Indigenous communities or early European settlers grow, fish and produce food and fibres in the past?
- What were the effects on the land, sea, water, vegetation and animals living in these places?
- How might they find relevant historical information about early Australia and Indigenous Peoples' uses of the land and sea for food and fibre sources from primary and secondary sources?
- How might they collect the ideas and voices about ways the Indigenous People and early European settlers used the land and seas for food and fibre sources?

Student groups

INTRODUCE students to a range of roles they can consider undertaking for their task.

Groups can include:

- **An Investigator** – this role includes asking questions, finding information, solving problems. It involves looking into the past, and learning about people and the environment.
- **A Recorder** – this role requires noting lots of information, recording ideas, recording sources used and keeping lots of records about the investigation.
- **An IT Person** – this role requires good computer skills, respecting yourself and others online, respecting other people's information online, and keeping records about online sources being used.
- **An Artist** – this role requires creative thinkers who can communicate their findings using art, photography, music or role play.
- **A Story Teller** – this role requires the ability to write and tell stories.



EXPLORE the Task Sheet in **Resource 1.1** with the students.

Exploring a view from the past

Purpose

To provide students with opportunities to develop their understanding of:

- the ways which Aboriginal and Torres Strait Islander People interact with places to source foods and fibres
- how food and fibres were produced by Aboriginal and Torres Strait Islander People
- how Aboriginal and Torres Strait Islander communities altered the environment through their methods of land and resource management
- the subject matter to develop a focus for the forthcoming experiences in the 'Explain' stage of the inquiry.

First Australians

Introduce students to Aboriginal and Torres Strait Islander Peoples' ways of living with country.



VIEW artworks to investigate the way Aboriginal and Torres Strait Islander People farmed and fished for food and used resources to create fibres for clothing and tools.



VIEW the bark painting depicting the Yolngu people of the coastal region of north-east Arnhem Land living and interacting with their land and sea country. It was painted by highly respected Djapu clanswoman, artist and printmaker Marrnyula Mununggurr, who speaks about the work in an accompanying audio file. The painting, which can be enlarged and zoomed is displayed with four hot spots showing fishing spears and spear making, mat weaving near a bark shelter, turtle shells and a ground oven, and sea animals. See:

http://livingknowledge.anu.edu.au/learningsites/seacountry/18_livingbysea.htm



VIEW the painting 'Living by the Sea'. This bark painting depicts the Yolngu people of East Arnhem Land living and interacting with the sea. It represents the Yolngu camps and their traditional ways of hunting. People prepare harpoons to catch turtles and dugongs, while others collect crabs for bait. The sea is shown busy and full of marine life.

See: <http://emuseum.anmm.gov.au/code/emuseum.asp?id=14518>



READ an article about Aboriginal and Torres Strait Islander Peoples' use of fish and shellfish for food.

See: <http://qmtalksscience.wordpress.com/2012/10/08/indigenous-science-shell-middens-and-fish-traps/>

Check out more about middens.

See: <http://www.YouTube.com/watch?v=fZB6VgwGifo&feature=plcp>



IMMERSE students in landscapes where Indigenous women collect Merrepen and natural dyes to make dilly bags.

See: <http://aso.gov.au/titles/documentaries/merrepen/clip2/>



USE the Australian Screen website at:

<http://aso.gov.au/titles/documentaries/5-seasons/clip1/> to learn more about land, river, sea and seasons that feed the Indigenous Peoples of Australia.



VIEW the third video at:

<http://aso.gov.au/titles/documentaries/5-seasons/clip3/> to learn more about how the different seasons mark different interactions with the land and different food sources for the Indigenous People.



Discuss the close relationship between Indigenous Peoples and their land/seas and how the relationship to the natural world carries responsibilities for its survival and continuity.

Connections to country 



After viewing, **DISCUSS** the close relationship between Indigenous Peoples and their land/seas and how the relationship to the natural world carries responsibilities for its survival and continuity. Focus on the obligations Indigenous Peoples have to protect and preserve life forms that are part of it. For example, sources of water have to be looked after and cared for as a matter of health and survival; rock holes are covered with rocks or branches to protect them; only the food that is needed is taken from the environment so that on future visits stocks of plants and animals are still plentiful.



Using the videos listed above and other linked resources on the previous page, **EXPLORE** these places and their people. Ask questions like:

- What is this place like?
- What do people do here?
- What is happening in this place?
- Could this place be anywhere else?
- How is food and fibre sourced here?
- How is this place being affected by the methods of sourcing foods and fibres?
- Might the methods of sourcing foods and fibres be sustainable practices?
- How is this place affected by seasons?
- How are people adapting to the seasons and changes being experienced?
- What changes to the place could Indigenous Peoples have influenced after living in the area for 100,000 years?



TALK about where you live and how Aboriginal and Torres Strait Islander People living in the vicinity of what was to become your city or town, utilised several ecological zones for food sources, and raw materials required in making tools, weapons, clothing and shelter.



DISCUSS the subsistence strategy of Aboriginal groups in Australia, both on the mainland and in Tasmania. For some groups it involved a seasonal movement of people between the inland and coastal regions.



IMAGINE large numbers of Aboriginal people gathered along the coast in the summer months, taking advantage of marine and sand dune-belt food resources such as coastal berries, shellfish, crustacean, fish, nesting sea birds and occasional stranded whales.



Step 2: First Australians connections with food, fibre and country



THINK about autumn and the movement of people to make more substantial winter shelters.

PICTURE the region that would have had more firewood available, was close to inland forests or grasslands that were fired to bring grazing animals to feed on the new grasses, and yet was still near to aquatic food sources, such as bulrush roots and freshwater crayfish from the swamps and creeks.



As a class, **TALK** about this coast/summer – inland/winter migration pattern and the food and fibre materials that may have been sourced.



Where possible **RESEARCH** early historic records of your state or territory's' First Australians or European explorers and colonists. Find out what they describe.

For a general introduction but highly readable account of Indigenous First Australians, their environment and food, see: Horton, D. (2000). *The Pure State of Nature*. Allen and Unwin [Chapter 4].

Picture the region that would have had more firewood available, was close to inland forests or grasslands and yet was still near food sources from the swamps and creeks.



Explore landscapes of the 19th century

Purpose

To provide students with opportunities to develop their understanding of:

- the ways which European people interacted with places after white settlement to produce foods and fibres
- how food and fibres were produced by settlers
- how communities altered the environment through their methods of land and resource management
- the subject matter to develop a focus for the forthcoming experiences in the 'Explain' stage of the inquiry.

Introduce students to the concepts about European people's ways of living post settlement in Australia.

View landscapes of the 19th century



VIEW a collection of digital resources and historical artefacts that tell a range of stories about Australia's rural and regional development. See: http://www.sl.nsw.gov.au/discover_collections/history_nation/agriculture/index.html



Scroll through the watercolours and photographs of country life and **DISCUSS** how with the advent of European settlement the landscape changed as needs for food, shelter and clothing were met. Record students' ideas.

Find a story about a place

There are a number of children's picture books that can be used as springboards to explore aspects of places. The following are suggestions:

- *Where the forest meets the sea* by J. Baker
- *Rainforest* by H. Cowcher
- *Kentu's Forest* by J. Morimoto
- *Window* by J. Baker
- *The Story of Rosy Dock* by J. Baker



READ the stories and talk about the possible effects of human habitation and introduced flora and fauna on the environmental systems.

Imagine



Working with a partner, **LIST** the changes in the landscape or seascape you imagine. **TALK** about changes that affected the environment.

CONSIDER how the land or sea was affected and what the results were. For example why was land being cleared? What use was made of the open country? Why was the sea fished? What use was made of the fishes caught?



IMAGINE being early settlers just landing in Australia. You are used to a European lifestyle, which includes the landscape, clothing, houses, roads and transport. Imagine the changes that the early settlers needed to make, for them to have a similar lifestyle to the one they were used to. **CONSIDER** questions like:

- What sorts of things Europeans need to bring to Australia to make their new country similar to the old one?
- What sorts of animals would they bring over and why?
- What sorts of plants would they bring over and why?
- How would they provide their own food?
- What effects on the natural landscape would there be from the introduced animals and plants and the clearing of land for crops and grazing?



Step 2: First Australians connections with food, fibre and country

Explore the NSW Library's resources for information

This collection of digital resources and historical artefacts tell a range of stories about Australia's rural and regional development. It includes sections on agricultural produce, Australia's first farmers, working and managing the land, looking after the land, natural disasters and rural communities, organisations and societies.



READ about life after the First Fleet arrived in 1788 and how settlers farmed the land and produced food. See:

http://www.sl.nsw.gov.au/discover_collections/history_nation/agriculture/life/index.html



Find out more by **VIEWING** the watercolours and manuscripts held in the NSW Library collection.



READ stories about the hardships encountered by the European settlers.

See: http://www.sl.nsw.gov.au/discover_collections/history_nation/agriculture/life/homesteading/index.html

READ poetry too.

See: http://www.sl.nsw.gov.au/discover_collections/history_nation/agriculture/life/station_life/station_stories.html



Using the stories and other linked resources, **EXPLORE** the places farmed by early European settlers. Ask questions like:

- What is this place like?
- What do people do here?
- What is happening in this place?
- Could this place be anywhere else?
- How is food and fibre produced here?
- How is this place being affected by the methods of production?
- How is this place affected by seasons?
- How are people adapting to the seasons and changes being experienced?
- What changes to the place could Indigenous Peoples have influenced after living in the area for 100,000 years?

With the advent of European settlement the landscape changed as needs for food, shelter and clothing were met.



Investigate the relationships

Purpose

To provide students with opportunities to:

- describe the interconnections between Indigenous Peoples, and the places and environments they used to source and access food and fibre materials
- identify the effect of these interconnections on the characteristics of the places and environments used
- describe the interconnections between European settlers, and the places and environments they used to source and produce food and fibre materials.
- identify the effect of these interconnections on the characteristics of the places and environments used
- develop the skills of discussion, negotiation, critical thinking and analysis of verbal and visual material
- create a storyboard.

Approaches to the land and sea



ASK students why it might be important to understand the past and ways Indigenous Peoples and early European settlers accessed and produced food and fibre sources.



LIST the students' responses. **SORT** responses and **ASK** students to give reasons for their suggestions. **EXPLAIN** to the students that in later stages of the unit they will be investigating the interconnections between people and methods of accessing and producing food and fibre, on places and environments.

Indigenous interactions



Aboriginal and Torres Strait Islander Peoples were the first to live in Australia, with archaeological evidence suggesting that they were inhabitants over 60,000 years ago. Aboriginal and Torres Strait Islander Peoples used seas, reefs, rivers, creeks, lagoons and the mainland to fish, hunt and gather.



TALK with the students about the changes fishing, hunting and collecting can make on places and environments.



TALK about Aboriginal and Torres Strait Islander Peoples present day use of country and sea country for food and fibre sources.

See the Great Barrier Reef Marine Park Authority's Reef Beat Posters at: <http://elibrary.gbrmpa.gov.au/jspui/bitstream/11017/2779/1/2010%20Reef%20Beat%20posters%201-8.pdf> for information about cultural, spiritual and traditional uses of a range of food and fibre sources that are fished, hunted, gathered, collected and used. Invite students to record findings.

Other resources include:

ReefED:

http://www.reefed.edu.au/home/explorer/hot_topics/gbr_traditional_owners/



TALK about where you live and how Aboriginal and Torres Strait Islander People living in the vicinity of what was to become your city or town still utilise several ecological zones for food sources, and raw materials required for food and fibres.

Making changes to the land, watercourses and sea



TALK with the students about the changes that accessing and producing food and fibre can make on places and environments. **DISCUSS** how we started with vegetated land, pristine watercourses and seas, lots of trees and grasses and then changed the landscapes and seascapes.



RESEARCH early survey maps of locations in your state/territory and read historical records of changes that may have taken place.

DISCUSS people changing the land by altering the course of a stream or river; removing trees and clearing vegetation; ploughing soils; grazing hard hoofed animals; using fire and introducing feral animals. Talk about people changing the ocean and coastal environments too. Talk about the cause and effect relationships.



Step 3: Explain how people and environments influence one another

Considering consequences

All action or lack of actions, carry a range of consequences.



ASK the class to consider a range of consequences that may have impacted on places and environments when food and fibre was accessed by Indigenous communities, and food was produced by the early European settlers. **USE** a consequence wheel to consider first, second and third order consequences. See **Resource 1.2**.

Share preliminary findings

REVISIT the research task with students. Invite groups to share preliminary findings and describe to the class:

- The people they are researching.
- The places they are researching.
- How the people have grown, gathered, hunted or fished and produced food and fibre.
- One way their actions influenced the environmental characteristics of places.

BUILD on earlier questions and invite students to consider questions like:

- What do we know about the past?
- How has the past influenced the present?
- How might they find additional relevant historical information about early Australia and Indigenous Peoples' use of the land and sea for food and fibre, from primary and secondary sources?
- How might they collect the ideas and voices about ways the Indigenous Peoples' used the land and seas for food and fibre sources?
- Who are the people or stakeholders that they might need to consult to find out more about how Indigenous People used the land and sea for food and fibre sources?
- How can they develop texts, particularly narratives and descriptions, which incorporate source materials?
- How they might share and communicate their research findings?
- Where might they discover how Australian Aboriginal and Torres Strait Islander Peoples remain connected to their culture through hunting, gathering and fishing?



Next step, encourage students to **BRAINSTORM** ways that they might present and communicate their research findings.

Over 60,000 years ago Aboriginal and Torres Strait Islander Peoples used seas, reefs, rivers, creeks, lagoons and the mainland to fish, hunt and gather.



Step 3: Explain how people and environments influence one another

People change the land by altering the course of a stream or river; removing trees and clearing vegetation; ploughing soils; grazing hard hoofed animals; using fire and introducing feral animals.

Decide on what to present and how to do so



Re-state the purposes of the investigation 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 the storyboard genre. Students now use the information they have gathered to construct a storyboard for the research being undertaken.

See: <http://www.slideshare.net/slayas/storyboard-genre-ideas> for ideas.

Bringing it all together

FOCUS student's attention on:

- What we know.
- What we want to find out.
- What the class now knows.
- What other things we would like to find out.

Use 'What we know' as a source for class or small group discussion. Use the other prompts above to plan the way forward.

See: <http://office.microsoft.com/en-au/templates/kwlh-chart-TC101887896.aspx>



Step 4: Elaborate on concepts and ideas

Presentation planning

Purpose

To provide students with opportunities to:

- plan their presentation about the interconnections between Indigenous People or early European settlers, places they sourced and produced food and fibres and the environments that were used.

Going further with the planning of the presentation

INVITE students to confirm the 'big idea' planned for their presentation about interconnections between Indigenous Peoples or early European settlers, the places and environments they used to source and access food and fibre materials, and the effect of these interconnections on the characteristics of the places and environments used.



In small groups, **DISCUSS** possible ways of presenting the big idea in an interesting and engaging format. Check out *Cool Tools for Schools* for models, possible structures and tools for students to choose from. See: <http://cooltoolsforschools.wikispaces.com/>

The past and the present

Purpose

To provide students with opportunities to:

- investigate how the past has influenced the present
- make links between their understandings and their experiences
- investigate practices in food and fibre production today
- describe probable, possible and preferred futures for food and fibre production in Australia
- finalise presentation planning
- write a recount.

The sustainable production of food and fibre by our primary industries is imperative to all. Farms can be explored so that students develop an understanding of places where people live to grow food and fibres, and the processes and technologies they use.

Discussion



TALK with students about places where primary producers live and produce our food and fibre. Brainstorm a range of known places.

Use a learning object to learn more about three farms



VIEW the learning object and explore the different farms that three families live on in Australia using images and information at: <http://virtualfarm.mla.com.au/>

Using the 'Virtual Farm' learning object, in groups ask students to:



INVESTIGATE the farms use of natural resources (water, soils and native vegetation) to produce food.

IDENTIFY the land management practices that are used to preserve the natural resources provided by the environment.



RECORD their understanding in a flow chart showing how the farm works, including the resources the farm takes from the environment and the wastes the farm puts back into the environment.



SUGGEST ways to improve the farming practices so that there might be less impact on the environment.



The sustainable production of food and fibre by our primary industries is imperative to all.

From *Iona* consider:

- About Iona
- Soil management
- Challenges of drought
- Sustainable pasture management
- Crop and pasture management
- Working with the environment
- Climate

From *Kalyeeda* consider:

- About Kalyeeda
- The seasons
- Pasture management
- Climate variability

From *Malabar* consider:

- About Malabar
- Sustainability techniques
- Climate variability
- Pasture management
- Land management
- Soil health
- Renewing pastures

Farms and how they might be used

Initiate a geographical inquiry about the resources provided by the environment in and around the farms, and how they are used and managed.



ASK students to select a farm and ask students a range of geographical questions, such as:

- Where is this farm?
- What is this farm like?
- What are the natural features on it or near it?
- What are the built features on it?
- What natural resources are provided by the environment?
- How are they being used?
- How are they being managed?
- What is happening on this farm at this time to ensure healthy soils, water, pasture cover and healthy animals?



Ask students to **RECORD** their ideas for display and sharing to communicate findings.



Step 4: Elaborate on concepts and ideas

Use their Indigenous understanding to learn more about connections with food, fibre and country today



EXPLORE the significance of Tjukurpa as the foundation of Yankunytjatjara and Pitjantjatjara Peoples' culture.

See: <http://www.parksaustralia.gov.au/uluru/people-place/culture.html>



CONSIDER Tjukurpa and its many deep, complex meanings including how it provides answers to important questions, and rules for behaviour and for living together. **THINK** deeply about how it is the law of caring for one another and for the land that supports peoples. **REFLECT** on how Tjukurpa tells of the relationships between people, plants, animals and the physical features of the land and how Tjukurpa refers to the past, the present and the future at the same time.

Explore futures

Take a 'futures walk' envisioning sustainable agricultural options for the future.

TALK with the students about:

- possible futures
- probable futures, and
- preferable futures (hopes, dreams and visions).



Choose a current agricultural industry, such as fish farming, and use a timeline to **DISCUSS** changes that have occurred in the past and present before considering 'the range of futures' that may be available to them.

See an example at: http://cottonaustralia.com.au/uploads/factsheets/CA_FACT_AUSTRALIAN_HISTORY.pdf



Encourage students to formulate their own questions and then **ILLUSTRATE** and **DESCRIBE** their ideas for possible, probable and preferable future in food and fibre production in Australia.

For example:

- A possible sustainable food future includes...
- A probable sustainable food future might include...
- I hope a preferable sustainable food future can include...

Discussing futures



Ask students to **TALK** about issues important for them in relation to:

- sustainable food sources in the present
- possible sustainable food sources, and
- probable sustainable food sources.



Expand on these thoughts and ask students what might be done about these issues. Synthesise ideas and **WRITE** a recount of ideas collected.

Reflect on how Tjukurpa tells of the relationships between people, plants, animals and the physical features of the land and how Tjukurpa refers to the past, the present and the future at the same time.



Step 4: Elaborate on concepts and ideas

More planning



Ask students to create a final plan for completing the presentation. Students in their roles may 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.

Students work in their groups, to create a video presentation, PowerPoint or blog and map their 'big idea'.



For more detailed video production lessons, have a look at this website below, which includes storyboards, scripting, shooting, editing and assessing. See: <http://kidsvid.4teachers.org/index.shtml>

Review and submit

Note: this is a suggested assessment activity.

Invite students to **REFLECT** on feedback shared in the earlier activity, revise and fine-tune the video, PowerPoint or blog.



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



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.

Reflective writing

Provide students with a set of focus questions for their writing:

- Write about something new you learnt in this unit.
- How did you feel about the activities you undertook?
- What would you do differently if you were to do this again?
- How have my/our feelings and behaviour changed as a result of learning?
- How well did I/we participate in any group/team learning activities?
- What questions do you have about the topic at the moment?

Assessment note

Learning logs are an ideal way to assist students to **REFLECT** on their learning and can provide a source of data for assessment. They can provide teachers with an insight into student's understanding and attitudes, as well as their perception of their own strengths and weaknesses.

References

- Australian Academy of Science. (2005) *Primary Connections*, Canberra, Australia.
- Baker, J. (1987) *Where the forest meets the sea*, MacRae, Sydney.
- Baker, J. (1991) *Window*, Julia MacRae Books, Sydney.
- Baker, J. (1995) *The Story of Rosy Dock*, Random House, Australia.
- Cecil, N. (1995) *The Art of Inquiry: questioning strategies for K-6 classrooms*, Peguis, Canada.
- Cowcher, H. (1988) *Rainforest*, Deutsch, London.
- De Bono, E. (1992) *Six Thinking Hats for Schools, Books 1 & 2*, Hawker Brownlow Educational.
- 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.
- Horton, D. (2000) *The Pure State of Nature*. Allen and Unwin.
- Morimoro, J. (1989) *Kentu's Forest*, Collins, Sydney.
- 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 Curriculum, Assessment and Reporting Authority. Australian Curriculum
<http://australiancurriculum.edu.au>

Australian Forestry Standard
<http://www.forestrystandard.org.au/>

Australian Government Department of Agriculture
<http://www.agriculture.gov.au/forestry>

Australian National Maritime Museum. National Maritime Collection
<http://emuseum.anmm.gov.au/code/emuseum.asp?id=14518>

Australian National University. The Living Knowledge Project
http://livingknowledge.anu.edu.au/learningsites/seacountry/18_livingbysea.htm

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

Australian Pork Limited. Aussie Pig Farmers
<http://www.aussiepigfarmers.com.au/types-of-farming/indoor-intensive-housing/>

Cool Tools for Schools
<http://cooltoolsforschools.wikispaces.com/>

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

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

Fisheries Research Development Corporation
<http://www.frdc.com.au>
http://frdc.com.au/knowledge/publications/Pages/australian_fisheries_stats.aspx

Forest Learning
<http://www.forestlearning.edu.au>

Forest Stewardship Council Australia
<http://au.fsc.org/>

Garnaut Climate Change Review
<http://www.garnautreview.org.au/>

Great Barrier Reef Marine Park Authority
<http://elibrary.gbrmpa.gov.au/jspui/bitstream/11017/2779/1/2010%20Reef%20Beat%20posters%201-8.pdf>
http://www.reefed.edu.au/home/explorer/hot_topics/gbr_traditional_owners

References

Kids' Vid

<http://kidsvid.4teachers.org/index.shtml>

Meat & Livestock Australia

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

<http://virtualfarm.mla.com.au/>

Microsoft Office

<http://office.microsoft.com/en-au/templates/kwlh-chart-TC101887896.aspx>

National Farmers' Federation

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

National Film & Sound Archive

<http://aso.gov.au/titles/documentaries/merrepen/clip2/>

<http://aso.gov.au/titles/documentaries/5-seasons/clip1/>

<http://aso.gov.au/titles/documentaries/5-seasons/clip3/>

Parks Australia

<http://www.parksaustralia.gov.au/uluru/people-place/culture.html>

Prezi. Natinal Farmers' Federation

<https://prezi.com/qvn0y5hn6dfj/nff-farm-facts-2012/>

Primary Connections

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

Queensland Museum Talks Science

<http://qmtalksscience.wordpress.com/2012/10/08/indigenous-science-shell-middens-and-fish-traps/>

Slideshare

<http://www.slideshare.net/slayas/storyboard-genre-ideas>

State Library New South Wales

http://www.sl.nsw.gov.au/discover_collections/history_nation/agriculture/index.html

http://www.sl.nsw.gov.au/discover_collections/history_nation/agriculture/life/homesteading/index.html

http://www.sl.nsw.gov.au/discover_collections/history_nation/agriculture/life/index.html

http://www.sl.nsw.gov.au/discover_collections/history_nation/agriculture/life/station_life/station_stories.html

The Archibull Prize. Young Farming Champions Team

<http://archibullprize.com.au/yfc/ourteam.html>

Wood Naturally Better

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

YouTube videos:

Fish Files YouTube Channel <http://www.youtube.com/user/FRDCFishfiles>

FRDC YouTube Channel <http://www.youtube.com/user/FisheriesResearchAU>

Target 100 YouTube Channel <http://www.youtube.com/Target100AUS>

The Australian Cotton Story <http://www.youtube.com/watch?v=cbKh1Xtfmao&list=UUcTsQcz7PRPX1bl3J3ORv-g&index=3>

Northern Agricultural Catchments Council. Wedge Island Coastal Walk <http://www.YouTube.com/watch?v=fZB6VgwGifo&feature=plcp>

Resource 1.1

Task record sheet

Every project task needs to be recorded as it is keeping important to keep a track of your learning.

Using the table below keep a record of your role in the group (remember you can have lots of different roles), your task, your sources, ideas and information collected.

Name:

Group task: Research how either traditional Indigenous communities or early European settlers, how they grew, fished and produced food and fibres and how their actions influenced the environmental characteristics of these places.

My tasks and role(s):

| | |
|---------------|---------|
| My first task | My role |
| My next task | My role |
| My next task | My role |
| My next task | My role |

Key words:**List of resources:****Resource 1**

| | |
|-------------------------------|--|
| Author's name | |
| The name of the text | |
| The year it was written | |
| The name of the publisher | |
| The pages I found most useful | |

Resource 2

| | |
|-------------------------------|--|
| Author's name | |
| The name of the text | |
| The year it was written | |
| The name of the publisher | |
| The pages I found most useful | |

Resource 3

| | |
|-------------------------------|--|
| Author's name | |
| The name of the text | |
| The year it was written | |
| The name of the publisher | |
| The pages I found most useful | |

Resource 4

| | |
|-------------------------------|--|
| Author's name | |
| The name of the text | |
| The year it was written | |
| The name of the publisher | |
| The pages I found most useful | |

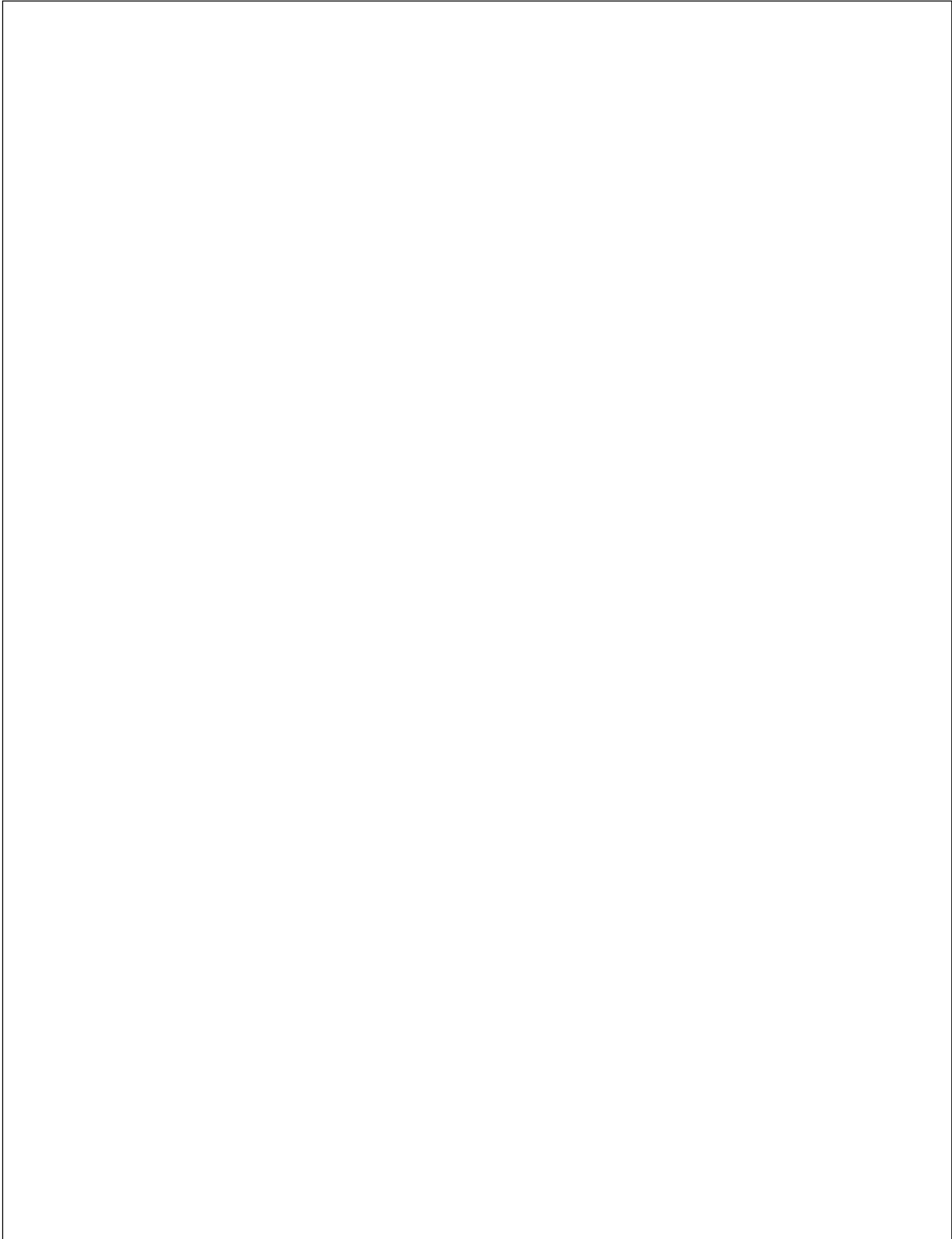
Resource 5

| | |
|-------------------------------|--|
| Author's name | |
| The name of the text | |
| The year it was written | |
| The name of the publisher | |
| The pages I found most useful | |

Resource 6

| | |
|-------------------------------|--|
| Author's name | |
| The name of the text | |
| The year it was written | |
| The name of the publisher | |
| The pages I found most useful | |

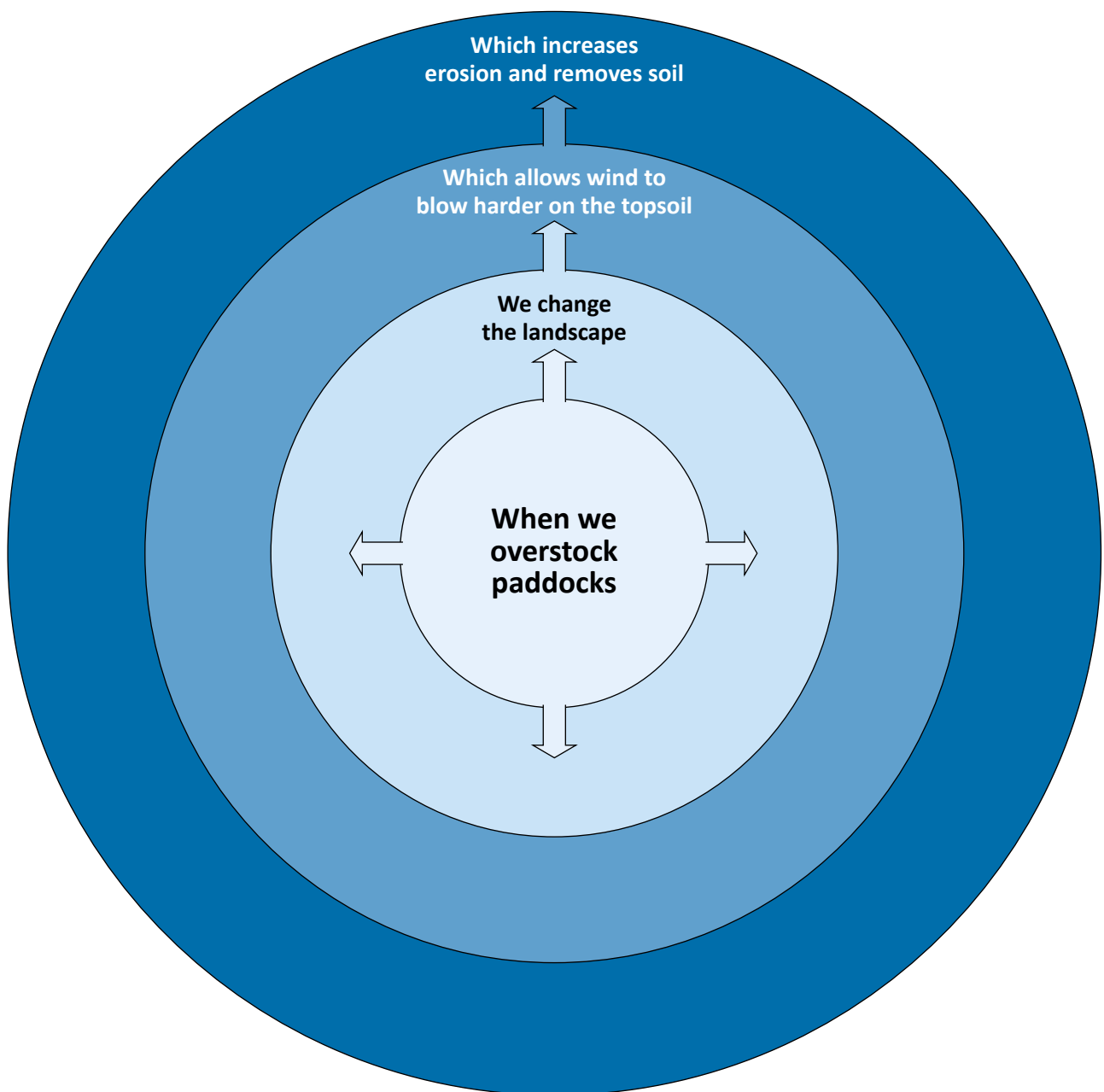
Information I think is important



Resource 1.2

Consequence wheel

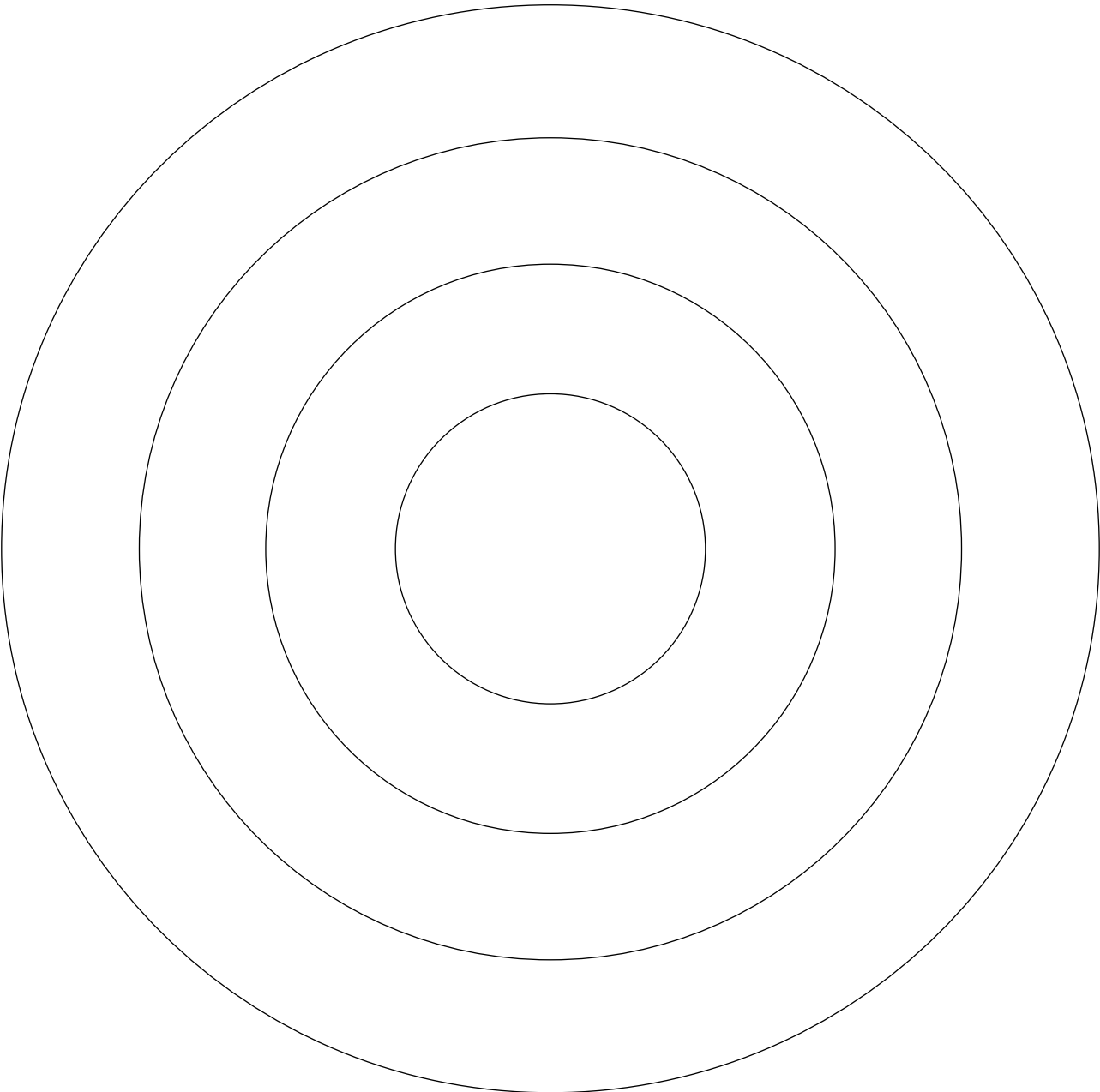
Consequence wheels are used to explore wide ranging consequences that can follow from actions, issues or trends in the present. Look at the example below.



DECIDE on an issue that affects changes to the land by the growing or production of a food or fibre source. **PLACE** the focus in the centre of the consequence wheel. Then, **EXPLORE** the focus by asking the question “What are the immediate consequences?”

WRITE the immediate consequences in the inner ring around the main idea. **LINK** each consequence to the main idea with a single line. This indicates that they are first order consequences. Continue exploring second, third and fourth order consequences using the outer circles.

Use the four concentric circles on the following page to **EXPLORE** the consequences of an action, issue or trend relevant to the changes affecting the land when food or fibre is produced.





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