



Department of
Primary Industries

Food and fibre production

An Aboriginal perspective

Stage 5 and 6 Agriculture



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Supporting document - Answer guide

NSW DPI Schools Program

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Reviewed by the Aboriginal Education Council.

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Food and fibre production- an Aboriginal perspective – Answer Guide

Sample answers have been provided for learning activities where applicable for this document. The following suggested answers should be used as a guide. It should be noted that these sample answers are suggested answers and not necessarily the very best answer, nor are they the only possible answers.

1. Complete the blanks in the Summary

Although Aboriginal practices varied between different communities around the continent, there were many similar features including:

- Aboriginal people lived in **harmony** with the environment
- They understood the **limitations** of the land and its **resources**
- **The Dreaming** meant the peoples have a deep religious connection and respect for the land and all the things in it.
- Population size was based on **food supply**
- They never **depleted** an area for example- they **replanted** crops and plants from roots and shoots and they never **overhunted** animals
- They **burned** to promote new growth (firestick farming)
- They **sustainably** carried out **agriculture** using irrigation, animal management, cultivation and aquaculture
- Aboriginal people used their great **knowledge of the land** and seasonal calendars to determine what food fibre and medicines they harvested at a point in time.

2. List resources the land provided the Indigenous peoples

Food, fibre, shelter, medicines, health care, tools and education.

3. Why is Aboriginal management considered to be holistic?

According to The Dreaming and their cultural beliefs the Aboriginal peoples are interconnected with the land. Caring for country is integral to this system. They believe everything and part of their lives and world are interconnected. No one thing is sole from the system. Therefore all their interactions are managed as a whole (holistic management).

4. Identify two consequences of no longer using firestick Farming?

Excessive build-up of dry plants can become fire hazards- this can lead to massive fires which potentially can become catastrophic. Also the open grasslands created from firestick farming encouraged increase in biodiversity of all species of flora and fauna in the ecosystem-populations of herbivores, marsupials etc. As well many Australian plants require fire to stimulate flowering or seed set and germination. For example scientists believe bilby and many other small animals herbivores became threatened by extinction when Aboriginals stopped firestick farming due to the loss of their habitat and abundant food sources.

Grazing rotation is a farming practice where the farm is divided into multiple paddocks of pasture for livestock to graze (eat). Grazing rotations occur when livestock (sheep, cattle etc.) are moved from paddock to paddock in a sequence, after they graze a paddock.

5. Complete the table to contrast five similarities and differences between grazing rotation and firestick farming.

Similarities	Differences
Reduces weeds	Firestick farming can stimulate flowering or seed set and germination of many native plants
Reduce amounts and build-up of 'trash' or dead plants which are not nutritious to herbivores and become a fire hazard	Firestick farming resulted with increased biodiversity of natural habitats
Creates open grazing lands (plains)	Firestick farming resulted with opportunities to hunt and gather food and fibre

Produces areas of grassland/pasture with plants growing at different stages	Grazing rotation can result with compaction of soil by cloven hooved livestock. This means soil is too compacted for plant roots to establish and develop. If grazing is not managed properly
Both encourage plant growth (shoots and roots)	If not managed properly, Grazing rotation can result with death of plants if they are overgrazed to the point that the pastures die and cannot re-establish.

6. What evidence has changed our understanding that Indigenous Australians were not solely nomadic (travelling) hunters and gatherers?

Permanent settlements with established agriculture

7. Describe two sustainable agriculture cropping practices used by Aboriginal people.

- Replacing the yam that was being harvested by replanting the crown of the yam to regrow a replacement plant
- Only growing species native to the environment that did not require extra resources such as water and nutrients/fertiliser

8. Describe two sustainable aquaculture practices used by Aboriginal people.

- Only harvested what they needed. Eggs, plants, birds, insects, fish, frogs, eels, shell fish, molluscs etc. were only harvested when numbers were plentiful. Anything too small was thrown back to breed. The fish traps and eel traps were designed so that only the larger animals were caught and the smaller ones swam through the channels.
- In times of drought the Aboriginal people's dammed waterways to maintain water for aquatic flora and fauna that otherwise would perish to drought. In doing so they sustained natural ecosystems allowing various marsupials, birds, aquatic plants, insects, and aquatic animals to survive.

Follow this link '[Evolution of Australian agriculture](#)'; to learn more about the history of sustainable Australian agriculture to complete the following activities.

9. Contrast a range of sustainable and unsustainable agricultural practices

Answers will vary- suggestions follow

Sustainable	Unsustainable
Minimum tillage e/g direct drill	Use of cultivation implements e.g. deep ripping, mouldboard and disc plough which caused 'clodding' and pulverisation of soil structure (soil structure decline)
Minimum tillage, no- till, precision ag	Cultivation practices for seed bed preparation which required multiple cultivation passes e.g. frequent harrowing and ploughing
Precision agricultural sowing using seed drills	Broadcast seeding- wasteful of resources seed and time
Pasture/ crop rotations with fallow phases for nutrient mineralisation, or nutrient addition (fertiliser) and organic matter build up	Eighteenth century farming system- clearing and burning trees, cropping soil, repeating process until yield declines, then repeating process on new virgin land
Management systems based on land capabilities and holistic production	Cropping on marginal soils not appropriate for cropping systems. E.g. South Australia, Queensland, Victorian Mallee and New South Wales
Utilisation of IPM, GMO's and less reliance on chemicals	Chemical farming e.g. herbicides, pesticides and over use of fertilisers

10. Discuss the effect of European and Aboriginal agricultural practices on agricultural production and sustainability

Answers will vary.

Approach:

- Students should identify agricultural production and sustainability as two separate issues to be addressed.
- Each issue should be addressed using examples to support points for and against from both European and Australian aboriginal agriculture.

Answers could include:

Agricultural production

- Aboriginal peoples only harvested and produced what was needed.
- Aboriginal peoples carried out irrigation, plants and animal management, cultivation and aquaculture.
- Aboriginal peoples burned to promote regrowth. Firestick farming created results similar to modern day pasture/ grazing rotations.
- Aboriginal peoples seasonal calendars are similar to calendar of operations.
- Post European settlement production initially was not efficient, using farming techniques, plant cultivars and animal breeds unsuited for production in Australia. This has changed over time.
- Modern day agriculture is continually evolving to increase production efficiency.

Agriculture sustainability

- Aboriginal peoples understood the climate, and limitations of the land and resources.
- Aboriginal peoples never overhunted or depleted an area of resources. Carrying out management such as not harvesting young or female animals, replacing harvested plants through asexual plant propagation.
- Aboriginal peoples only farmed native species which did not need additional inputs of fertilisers, herbicides and pesticides which have associated resource degradation issues.
- Post European settlement -sustainability was not a focus. Farming was focused on maximising production to support survival and establishment of the colonies. Farming techniques, plant cultivars and animal breeds were unsuited for production in Australia. This has changed over time.
- Agricultural sustainability is an ever evolving current focus. It continually develops with increased understanding of our valuable resources, research and technological development. As well as utilisation of techniques, management and plant and animal varieties developed for specific production systems.