

Pond Study – Years 5 - 6

Learners will **use nets to collect pond life**. They will **use charts and magnifying glasses to identify** life forms in the water of the farm dam. This provides a real-world situation in which to **explore** life cycles and the ecosystems that exist in this environment. Water sources, water use, water quality and the need to care for waterways is discussed in this context.

ACHIEVEMENT STANDARDS

Design and Technologies

Food and Fibre Production (Year 5 & 6)

Students explain how social, ethical, technical and sustainability considerations influence the design of solutions to meet a range of present and future needs.

Science

Students analyse how the form of living things enables them to function in their environments. (Year 5)

Students describe and predict the effect of environmental changes on individual living things. (Year 6)

CONTENT DESCRIPTORS

Design and Technologies

Food and Fibre Production (Year 5 & 6)

Investigate how and why food and fibre are produced in managed environments and prepared to enable people to grow and be healthy. (ACTDEK021)

Science

Living things have structural features and adaptations that help them to survive in their environment. (ACSSU043) (Year 5)

The growth and survival of living things are affected by physical conditions of their environment. (ACSSU094) (Year 6)

[Food and Fibre connections to the Australian Curriculum are available here](#)

GENERAL CAPABILITIES

Ethical Understanding

Explore ethical concepts in context

Level 4 - pose questions to clarify and interpret information and probe for causes and consequences.

CROSS CURRICULUM PRIORITY

Sustainability

Organising idea 1

The biosphere is a dynamic system providing conditions that sustain life on Earth.

Organising idea 7

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

Learning Goals

Learners will:

- Know that living things depend on each other
- Understand that environmental changes affect living things
- Build a model of an ecosystem



Learning Sequence

Activating and Engaging

Suggested pre-Hagley experience activity

Learners can express their knowledge of ecosystems and ways in which living things are reliant on each other. This can be recorded on a class chart.

Suggested tuning in questions:

- What kinds of creatures would be found in farm dams?
- How do these creatures depend on each other and their environment?
- What could happen if one of these creatures was taken out of the ecosystem?
- What farm activities could impact on the dam ecosystem?



Exploring and Discovering

The Experience at Hagley Farm

(Led by Visitor Centre teachers and staff)

Learners are asked to share what they know about water in the dam. Where it comes from what it is used for and what might be in the water.

Learners walk to the dam with equipment to collect specimens.

The Hagley Dam

Safety considerations are discussed with learners.

Learners discuss the concept of dam construction, where the water comes from and how it is used on the farm.

Discussion of what may live on and in the dam.

VC teacher demonstrates how specimens are collected and deposited into collection container.

Discussion of the stages of a life cycle that may be in the dam.

Learners collect specimens from the water and deposit them in a collection container.

An identification chart is used for learners to identify the specimens they have collected.

Supporting Experiences

Dung Beetle Study

Learners investigate the life cycle of dung beetles and discover why they are beneficial on farms. Learners walk across the farm to look for evidence of working beetles.

Poultry Study

Learners observe and handle the Hagley laying hens. They will learn about their life cycle and the importance of caring for their needs in a managed environment. There will be an opportunity to collect freshly laid eggs.

Synthesising and Applying

Learners describe the natural, constructed and managed features of the dam. They illustrate a water ecosystem and explain how the lives of plants and animals are interrelated.

Further Learning and Assessment Tasks

Ask Learners to:

- Draw and label an ecosystem of their choice
- Build a model of an ecosystem
- Identify how humans are part of ecosystems and the influence they can have within these systems



Success Criteria

Learners will be able to

- Explain how living things rely on each other
- Describe some of threats which may impact on an ecosystem
- Design and build a model of an ecosystem



References

<https://education.abc.net.au/web/splash#!/media/2519447/all-about-frogs>

<https://www.youtube.com/watch?v=sX5XvYIkDM8>

<https://www.geelongaustralia.com.au/mosquitoes/article/item/8cf5ed9a18cda6a.aspx>

<https://www.youtube.com/watch?v=dICpWPDjVvU>

Glossary (Pond Study)

Backswimmer – a bug with a curved back, large eyes and long hairy hind legs. Swims on its back

Dam – Man made depression in the ground, usually with a wall, to hold water. Can be filled with water naturally or by pumping water from another source. Used on farms for stock water or irrigation

Ecosystem - all the living things in an area and the way they affect each other and the environment

Exoskeleton - a hard outer layer that covers, supports, and protects the body of an invertebrate animal such as an insect or crustacean

Gastropod - a mollusc of the large class *Gastropoda*, such as a snail, slug, or whelk

Habitat - the natural environment in which an animal or plant usually lives

Insect - a small arthropod animal that has six legs and generally one or two pairs of wings

Invertebrate - an animal lacking a backbone

Irrigation - the supply of water to land or crops to help growth

Larvae - the active immature form of an insect, especially one that differs greatly from the adult and forms the stage between egg and pupa, e.g. a caterpillar or grub

Life Cycle - the series of changes that a living thing goes through from the beginning of its life until death

Metamorphosis - the process by which the young form of insects and some animals, such as frogs, develops into the adult form

Nymph - an immature form of an insect that does not change greatly as it grows, e.g. a dragonfly, mayfly, or locust

Pupa - an insect in its inactive immature form between larva and adult,

Water boatman – boat shaped bug that moves by using its legs like oars

Yabby – fan tailed crayfish with well-developed claws. Burrows into sediment and dam walls

