

Pond Study – Years 3 - 4

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 3 & 4)

Students describe how social, technical and sustainability factors influence the design of solutions to meet present and future needs.

Science

Students group living things based on observable features and distinguish them from non-living things. **(Year 3)**

Students describe relationships that assist the survival of living things and sequence key stages in the life cycle of a plant or animal. **(Year 4)**

CONTENT DESCRIPTORS

Design and Technologies

Food and Fibre Production (Year 3 & 4)

Investigate food and fibre production and food technologies used in modern and traditional societies. (ACTDEK012)

Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs. (ACTDEK010)

Science

Living things can be grouped on the basis of observable features and can be distinguished from non-living things. (ACSSU044) **(Year 3)**

Living things have life cycles. (ACSSU072) **(Year 4)**

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

GENERAL CAPABILITIES

Ethical Understanding

Explore ethical concepts in context

Level 3 – discuss actions taken in a range of contexts that include an ethical dimension.

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 water contains a variety of life.
- Understand that ecosystems are reliant on the sustainability of all elements (living and nonliving).
- Design a habitat suitable for an identified species.



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:

- Where does water come from?
- How do you think the water on a farm is stored and what is it used for?
- What do you think lives in the water?

Learners watch the short video explaining butterfly lifecycle

<http://education.abc.net.au/home#!/media/1568154/mon-arch-marathon-winging-it-to-warmer-weather>



Exploring and Discovering

The Experience at Hagley Farm

(Led by Visitor Centre teachers with Bronze Medallion qualification)

Learners are asked to share what they know about the 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.

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

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 the life cycle of an animal and explain how the living things grow and mature.

Further Learning and Assessment Tasks

Ask Learners to:

- Draw and label the life cycle for a chosen animal or insect.
- Build a model of the dam and its surroundings.
- Draw and label an ecosystem in which plants and animals rely on each other for survival.



Success Criteria

Learners will be able to

- Explain how living things depend on each other for survival.
- Design a poster to show the life cycle of a chosen animal.
- Describe the progression of a life cycle of a chosen animal.



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

