

Knowing Nature Facilitated Program

Overview : Explore the connections between living things in a local ecosystem and discover how you can encourage native species to live in your school and / or backyard.

Duration : One hour facilitated experience with a Museum Education Officer.

Please allow approximately 45 minutes additional time for self-guided gallery exploration using the Adult Helper Guide.

What your class will experience:

- Explore how living and non-living things are connected in a healthy ecosystem.
- Discover ways to enhance your own backyard / school yard to attract native species.

Excursion Booking and Enquiries:

For enquiries and bookings please contact:

Western Australian Museum – Perth
Education

Phone: 9427 2792

Fax: 9427 2883

Email: education@museum.wa.gov.au



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Adult Helper Guide

 Photocopy	
<i>Knowing Nature</i> Adult Helper Guide (for every adult)	



Links

Curriculum

Science

Life and Living

Students understand their own biology and that of other living things and recognise the interdependence of life.

Key Messages

1. Living things depend on their environment and other living things for survival.
2. The habitats of native species have been affected by human activity.
3. We can create mini-ecosystems within our backyard to encourage endemic native species.

Galleries



Discovery Centre
Hackett Hall, Ground Floor



Mammal Gallery
Jubilee Wing, Level 1



Woodward Diarama
Beaufort Street Wing, Level 1



At the Museum

Facilitated Program

One hour

The facilitated component of *Knowing Nature* takes place in one of the Museum's learning spaces. It is a hands-on investigation, facilitated by an Education Officer.

This experience guides students through the discovery of how a healthy ecosystem supports the survival of native species, and how the students can have a positive influence on the survival of native species and habitats.

Please have your students split into four or five groups for this experience (depending on the number of students and adults). Each group will require one adult supervisor to assist them with the activities.

Self-guided Experience

Approximately 45 minutes

The self-guided component of *Knowing Nature* takes place in the Museum's galleries. Using the questions contained within the Adult Helper Guide, group leaders will be able to assist students to explore our collection of biodiversity-related displays.

Please allow for time to explore the galleries before or after your facilitated experience. Maps are available at the Front Desk to assist you in locating these galleries, or please ask a staff member for directions.



Photocopy

Please bring with you on the day of your excursion:

- *Knowing Nature* Adult Helper Guide (for every adult)

Related Museum Resources

Planning Your Excursion

- Excursion Management Plan
- Excursion Essentials



Available online at www.museum.wa.gov.au/education

Publications

- Spotlight on Species – a self-guided trail
- Fun stuff for students:
 - fauna colouring-in sheets
 - make your own fauna badges and magnets

Available for purchase, please enquire at time of booking.

Classroom Activities

From this list, please select some activities that are suitable for the age and ability of your students.

- **Classification:** Search for photos / pictures of living things and have students come up with criteria to classify them eg. insects; birds; mammals; plants; land animals; water animals; carnivores; herbivores. Students can then research the habitats, diets and threats to these species.
- **Make a diorama:** As a class, explore the features of a healthy local ecosystem (eg. Jarrah forest, coastal or wetlands). Have the students discover which animal and plant species exist in these ecosystems, and how the species are interconnected. The students could then represent their findings by creating a model of that ecosystem in a shoe box.
- **West Australian wonders:** Have students choose an animal that is native to Western Australia. Research the animal's diet, behaviour, habitat and other special or unique features.
- **Conservation:** Create a class brainstorm on ways that students can contribute to the protection of native plants and animals.
- **Minibeasts:** Have students discover which insects or other 'minibeasts' can be found in a local ecosystem and the important roles that they play (eg. termites consume fallen logs, which in turn helps to fertilise the soil and also creates spaces for new trees to grow). The 'minbeast' could also be a pollinator, or be a source of food for another animal.
- **Biowords:** Create a class word bank on words related to biodiversity and include them as a part of student activities. Challenge students to discover new words to add to the word bank and to use these words in their writing.
- **Ecofacts:** Compile facts about biodiversity that students discover from books, DVD's etc.
- **Tree exploration:** Research which tree and plant species naturally exist in your local area. Take photos (with students) of plants and trees around your area / school. Sort the photos into native and introduced species on charts as a whole class activity or in small groups.
- **Build a frog-friendly habitat at school:** Have students find out what frogs require for survival in their environment. Research the features of a healthy frog habitat. Consider what plants should be used, what other animals could be introduced eg. native fish. What other animals might be attracted to the habitat. Discuss what other benefits there would be to the local environment by creating a frog-friendly habitat. Have students come up with designs for the habitat and decide what materials are required. Once the habitat is built, the students could monitor the animal species that use it.

- **Preparing for the Museum excursion:** Before visiting the Museum, create a 'mind map' of the facts the class knows about the type of animals and plants that can be found in and around a wetlands environment.
- **Forest dwellers:** Brainstorm Australian animal species that the children are familiar with. Find out which species are unique to Western Australia (eg. Numbat, Carnaby's Cockatoo, Western Swamp Tortoise). Investigate which iconic Australian species do not live here (eg. koala, platypus) and which species have been introduced to WA (eg kookaburra, Rainbow Lorikeet).

Helpful Websites

- <http://www.frogwatch.museum.wa.gov.au/>
- <http://www.museum.wa.gov.au/explore/online-exhibitions/cockatoo-care>
- <http://www.perthzoo.wa.gov.au>
- <http://www.numbat.org.au>
- <http://www.westernswamptortoise.com>

Related Classroom Resources

Publications

Aplin, K. et al. (2000). *Building frog friendly gardens*, Western Australian Museum Publications, Perth.

Casey, K. (1996). *Attracting frogs to your garden ; Creating an ideal habitat from native frogs in your own backyard*, Kimberley Publications, Upper Mt Gravatt, QLD.

The above are available for purchase from the Western Australian Museum Bookshop, please enquire at time of booking.

Jakab, C. (2007) *Global issues ; Biodiversity*, Macmillan Library, South Yarra, Vic.

Ramage, J. (2008) *Tuart dwellers*, Department of Environment and Conservation, Bentley, WA.

Strauss, R. (2004). *Tree of life ; The incredible biodiversity of life on earth*, Kids Can Press Ltd, Toronto, Canada.

Knowing Nature Adult Helper Guide

Photocopy

Knowing Nature Adult Helper Guide (for every adult).

How To Use This Guide

Use the questions contained within the Adult Helper Guide to encourage discussion of key concepts while you explore our collection of biodiversity-related displays with your group of students.

Please allow approximately 45 minutes to explore the galleries listed below.

Galleries

You will visit three galleries. The following icons are used within this document to identify which gallery you should be in.



Discovery Centre
Hackett Hall, Ground Floor



Mammal Gallery
Jubilee Wing, Level 1



Woodward Diarama
Beaufort Street Wing, Level 1



Lots of different things live in an ecosystem.

All animals in an ecosystem have important jobs no matter how big or small they are.

- Find the drawers that hold insects in them.
- Can you find the following insects and discuss their special features help that them to survive?
 - A colourful beetle?
 - An insect that looks like a stick?
 - An insect that looks like a leaf?
 - An insect that bites or stings?
 - The worlds biggest moth (Hercules Moth)?
 - The hairiest spider?
 - A drawer of moths?
 - Can you see a moth with 'eye spots'?
 - A very big insect?
 - A very small insect?
 - The most unusual looking insect?



- Find these animals. These animals all *eat* insects. Find some other animals that also eat insects.
 - **Rock Frog:**
Why do frogs have long sticky tongues?
It makes it easier to catch insects.
 - **Green Tree Frog:**
How is the Green Tree frog camouflaged?
They eat cockroaches, spiders, flies and crickets.
 - **Echidna:**
What would the echidna's claws be usefully for?
The echidna has sharp claws that are good for digging and a long, sticky tongue to catch ants and termites.
 - **Tarantula:**
They eat insects (like grasshoppers and beetles), small birds, lizards, snakes and frogs.
 - **Carnaby's Cockatoo:**
They eat insect larvae. What else do they eat?
 - **Glider:**
They eat nectar and pollen from eucalyptus blossoms. They also like the sap from the eucalyptus tree. In addition, they feed on assorted insects and their larvae, small birds, mice, seeds and nuts.
 - **Water Rat:**
They eat spiders, aquatic insects and frogs.
 - **Chuditch:**
It's diet consists of insects and small vertebrates, including frogs, lizards, birds and hopping mice.
- What would happen to these animals if the insects in their local area disappeared?



Mammal Gallery

Jubilee Wing, Ground Level

■ Find the Darling Range Cabinet near the Bird Gallery.

- The Darling Ranges are just east of Perth (near Mundaring).
- When answering the following questions, remember the animals and plants found in this region will be similar to wetlands in Perth which the children are familiar with.

■ What parts of the landscape can you see?

- There are three main parts:
 - Water
 - Scrub (small trees, bushes)
 - Large trees

■ What animals and plants can you see in the landscape?

- Use the signs / labels to help you name these.

■ What living things could live in the water?

- Make sure students think of WA local animals / plants they could find in the bush.
- Ducks, freshwater fish (like Pygmy Perch), frogs, dragonflies, Black Swans, water rats, water reeds, duck weed, algae, tortoises.

■ What other animals / plants do you think could live in the small shrubs / grassland?

- Snakes, insects, kangaroos, wallabies, Bobtails, bandicoots, wildflowers (Kangaroo Paws, banksia, wattle, hakeas), echidnas, spiders.

■ What other animals do you think could live in the large trees?

- Cockatoos, insects, predator birds (Osprey), owls, kookaburras, magpies, bandicoots, bats, possums, kingfishers.
- The large trees in this area include different types of Eucalypt trees.



Mammal Gallery

Jubilee Wing, Ground Level

■ What doesn't belong?

• Feral Cat

Every animal in this cabinet belongs except the feral cat. The feral cat is an 'introduced species', which means it was brought to Australia by European settlers. This animal causes many problems for our native animals.

■ Why would a feral cat be harmful to this ecosystem?

- Feral cats hunt native animals, eat the food of native animals and they live in homes of native animals.

■ What other threats are there to ecosystems like this?

- Humans littering.
- Humans clearing trees and bush for farming and development.
- Other introduced species eg. rabbit, fox and rainbow lorikeet.



Woodward's Diorama of Swamp Life

Jubilee Wing, Level 2

This diorama is an example of what a wetland looked like 100 years ago. It is based on Herdsman Lake.

■ What does a wetland look like now?

Discuss the similarities and differences between the swamp from 100 years ago and a wetland now.

- How many birds can you find?
- How many eggs can you count?

■ What are the three main parts to this wetland landscape?

- Water
- Scrub (small trees, bushes)
- Large trees

■ Which birds live in the water or among the reeds?

- Use the signs / labels to help you name these.

■ What do they use reeds for?

- Shelter, building nests, hide from predators.

■ What other animals do you think could live in the water?

- Fish, frogs, dragon flies, tortoise, water rat.

■ What birds live in the bush / small trees?

- Use the signs / labels to help you name these.

■ What other animals do you think could live in the scrub (small trees / bushes)?

- Insects, spiders, snakes, lizards, numbats.

■ Find all the birds that live in the large trees.

- Use the signs / labels to help you name these.

■ What other animals do you think could live in the large trees?

- Possums, insects eg. bees, flies.