



Tree Ring Investigations

LESSON PLAN

What Can Be Learned?

Dendochronology is the study of the growth rings of trees. Growth rings are an amazing record through time - they can tell scientists about the history of individual trees, but also about the climate conditions in an area from year to year and whether a tree lived through drought, forest fires, insect attack, or floods.

Trees such as king billy, Huon and pencil pine - with their long life-spans - provide us with an information record that stretches back thousands of years.

Materials Required

- Tasmanian animal identification books
- Colour-chips (cut-up painting colour sample cards work well)
- Magnifying glasses
- Digital camera

The Activity

Background information

Rainforest animal adaptations

Adaptations are characteristics that help plants and animals to survive in their habitat. All animals depend on their physical features to help them survive. The physical features of a bird help it to obtain food, keep safe, and build homes. These physical features are called the bird's adaptations. For example, the shape of a bird's beak is a physical adaptation which helps it find food.

Adaptations help animals to...

- obtain oxygen, water, food and nutrients
- cope with physical conditions such as temperature, light and heat
- defend themselves from their natural enemies
- reproduce
- find shelter and build nests
- respond to changes around them

Specific rainforest adaptations

Colour: Animals which display darker colours are more likely to be able to hide from predators.

Glow: Glow worms use bioluminescence to attract prey to their snares in the darkness of the rainforest.

Wings: Unlike birds which hunt for prey in open or coastal environments, larger birds of prey (owls, grey goshawks) who hunt amongst forest trees have wing shapes that enable them to manoeuvre between trees and also remain silent as they fly.

Body shape: To cope with cool rainforest temperatures Tasmanian pademelons have developed a more rounded body shape which is better at conserving heat.

Which animals can be found in the rainforest?

- Mammals
- Birds
- Reptiles
- Amphibians
- Invertebrates

Invertebrates

The rainforest is a particularly attractive place for invertebrates to call home. There are approximately 30 000 species of invertebrates in Tasmania - including



Rainforests E-Set suited to lower secondary students.

insects, spiders, snails, leeches, earthworms and crayfish.

Tasmanian rainforest provides dark, moist and sheltered conditions which enable invertebrates to thrive. Forest floor litter and rotting logs are micro-habitats that play host to an amazing variety of tiny animals.

In the classroom

Write down what characterises the rainforest environment. For example: not much light or dappled light, wet, cool temperatures, dark brown and green colours are prevalent.

There are 22 species of mammals found in Tasmania's rainforests and 21 species of birds. Students can research a specific species and make a list of the adaptations the animals have that enabled them to survive.

Compare Tasmanian rainforest animals with those found in another kind of rainforest or environment (eg the rainforest from the 'Rainforest Email Links' activity).

On the site visit

Animal survey - Choose a section of forest floor litter or a rotting log and count the number of species you can see. Magnifying glasses should be used to find small invertebrates. Record what you observe, and take pictures with a digital camera.

A lesson in camouflage - This game is a quick and effective way to demonstrate how effective camouflage can be at helping animals to survive.

You will need a few handfuls of coloured card pieces (eg 2cm square) or tiddlywinks chips - make sure there is a variety of colours, from very bright



to greens and browns commonly found in the rainforest floor. Count these first so you can collect them all at the conclusion of the activity.

Initially inform the students that that they are birds of prey whose job is to eat as many animals as they can as quickly as they can. If required, a smaller group can participate, while the other students watch.

Ask the students who are 'hunting' to turn their backs while the other students help to distribute the coloured chips within the rainforest.

Ask the 'hunters' to:

- 1) Find the first colour chip they see.
- 2) Find as many coloured chips as they can within 10 seconds.

When they are done, examine the chips they collected and the chips still left on the ground.

They should find that the most brightly coloured chips were taken first - while the browns and greens remain safely on the ground.

This demonstrates how effective an adaptation such as camouflage can be, and how animals with the best camouflage are the ones more likely to survive.

Ensure you have all the colour chips before leaving the area.

Valuing Rainforests E-Set - Lesson Plan

FURTHER INFORMATION

Head Office; 134 Macquarie Street Hobart Tasmania 7000