

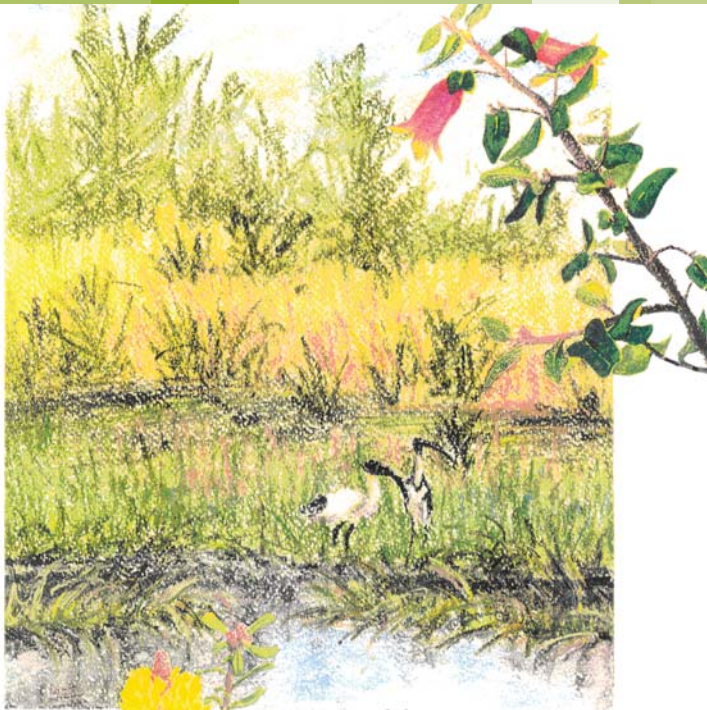


**PORTLAND  
ALUMINIUM**

Partnering Stronger Communities

hop to it

Portland Aluminium Environmental Education



Helping you protect our environment

hop to it



## UNIT SUMMARY:

This unit of work focuses on creating frog friendly habitats and exploring the wonderful world of frogs. The suggested activity sequence incorporates an interactive approach to teaching, whereby students are encouraged to explore, pose questions, conduct investigations and report findings.

## LEARNING OBJECTIVES / FOCUS AREA:

Students will be able to:

- Recognise the importance of conserving frog life in their local area
- Learn how to build frog friendly habitats
- Identify some of their local frog species
- Explore the habitats that may be suitable for frogs
- Understand the life-cycle of a frog

## RESOURCES ATTACHED:

- Suggested Teaching Sequence
- Activity Sheet 1 (How can we help?)
- Activity Sheet 2 (Frog Identification)
- Activity Sheet 3 (Frog Habitat Checklist)
- Lifecycle of a frog (Gould League 1999)
- Build a frog friendly habitat (information Sheet)

## SPECIALIST MATERIALS:

- Alcoa Frog Watch / ARC, BONKING in the Garden, 2002
- Casey, Kevin, Attracting Frogs to Your Garden, Gould League.
- Robinson, Martyn, A field guide to FROGS of Australia, 1998
- [www.frogs.org.au](http://www.frogs.org.au)

## LEARNING OUTCOMES

Relevant outcomes from the Victorian Essential Learning Standards;  
Science – Level 2 & 3

- Describe how body structures assist plants and animals to survive in their environment.
- Describe relationships between living things in a particular habitat.
- Investigate the similarity and diversity of characteristics within and between living things.

## TEACHING SEQUENCE OUTLINES

### Pre-visit (~1 lesson)

- Have you ever found a frog? Where did you find it? (Share experiences)
- Describe or draw a habitat you think might be frog friendly.
- Explore the lifecycle of a frog
- Make a list of questions you wish to discover about frogs.

### The Visit (1/2 Day at Portland Aluminium Education Centre)

- Explore a frog friendly habitat (Check List)
- Questions & Answers (Prepared in class)
- Discuss ways to conserve & create frog friendly habitats
- Hop To It Activity Sheets
- Listen to sounds of different frogs & learn to identify them

### Post Visit (~2 lessons)

- Students report and discuss their visit
- Create a brochure or poster about your favourite frog.
- Create a frog friendly habitat in your schoolyard.

## ACTIVITY INFORMATION

During the visit to Portland Aluminium's education centre, students will be:

- Briefed on safety
- Given a background talk about Portland Aluminium's 'Smelter in the Park'
- Divided into small groups of 8-10
- Spend time at 3-4 stations relevant to Hop To It (eg: Wetland Wonders)
- Explore a frog friendly habitat
- Discuss & discover answers to some of the students froggy questions
- Complete activity sheets
- Listens to frog calls and learn to identify some local species



## BACKGROUND INFORMATION

### Where have all the frogs gone?

Frogs have survived on earth for more than 200 million years, but there is now a decline in frog numbers, especially in the last 20 years. The sensitive skin of frogs, the soft eggs, developing embryos and free swimming tadpoles are most vulnerable to water pollutants, such as insecticides, herbicides and heavy metals being permeable to both air and water. Contact with air and water pollutants can adversely affect and even kill frogs.

Around Australia the number of frogs is declining. In Victoria alone there are 35 species of frogs. Nine of these are endangered and need your help. Many wetlands and swamps have been drained to allow for development of housing, farming, industry etc. This has meant major habit loss for frogs. The use of pesticides and disease has also reduced frog populations.

### How can we help?

Urban frog rehabilitation is most effective where local communities work together to build frog habitats at a diversity of scales – from individual frog-friendly back-yard ponds to larger scale water-course rehabilitation to school yard habitats, all designed to offer suitable frog breeding habitats.

You can create a wetland habitat by designing a pond and planting the area with appropriate vegetation both in and around the water. Do not introduce fish into the pond as these prevent frogs taking up residence by feeding on tadpoles and spawn. Do not introduce frogs or tadpoles into you wetland, but allow local species to take up residence on their own accord. This may take some time depending on the area. You may have to wait for the plants to grow sufficiently to provide suitable cover from predators.

Refer to: **BONKING in the Garden** (A guide to making your garden frog friendly). Copies available from Portland Aluminium Education Centre.

### Who's who in the pond?

Perhaps the most common inhabitants of urban and farm wetlands are the marsh frogs in the genus *Limnodynastes*, which translates as 'Lord or King of the pond or marsh'. The several species of marsh frog have varying distributions in Victoria. The *Limnodynastes* genus includes two groups: the bonking frogs and the marsh frogs.

**Bonking frogs** – The Pobblebonk or Banjo Frog is by far the best known garden frog in Victoria. Its loud resonant "Bonk" can be heard throughout most of the state.

**Marsh frogs** – The sharp "click" or "toc" of the Spotted Marsh frog is a familiar sound to many Victorians. The duller "cluck" of the Striped Marsh frog is often described as similar to the clucking of chooks. Both species are regular first arrivals at new ponds.

**Froglet** – The Common Froglet is recognised by the "creaky door" or "ratchet" sound. It is often mistaken for crickets.

**Southern Tree Frog** – The brown tree frog is the most commonly encountered species. The familiar sound of this frog can be described as a purring trill or whistle.

Activity Sheet 1

### WHAT HAVE WE DONE?

In the space below, list some human activities that have contributed to the decline of frog numbers:

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### HOW CAN WE HELP?

In the space below, list some things we can do to help reverse the decline of frogs.

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## FROG IDENTIFICATION SHEET:

Activity Sheet 2

Using your swap cards, fill in the gaps:

Local common frog

Common frog named after a type of guitar

Threatened toad

Threatened frog that is named after another animal

Local endangered frog that grows

A frog that is not here any more

## FROG HABITAT CHECKLIST

### Activity Sheet 3

To What Extent:	Good	Average	Poor
Is the land around the pond shaded to protect frogs from overheating?			
Does the pond receive filtered sunlight to allow algae and pond plants to grow, thereby providing food and shelter for tadpoles?			
Is the surface clear of floating water plants which block sunlight and take oxygen out of the water?			
Can frogs find small basking sites in direct sunlight?			
Can tadpoles locate shallow areas in direct sunlight so they can warm themselves and speed up their development?			
Can tadpoles access deep, shaded water to cool down in hot weather and stay warm on cold nights?			
Does the pond have plants growing in the water that provide a place for some frogs to call from and deposit their eggs?			
Does the pond have plants growing around the edges which provide hiding and calling sites for frogs?			
Do the surrounds of the pond provide shelter sites? (rocks, logs, leaf litter, tussocks or grass)			
Is soil around the pond loose enough for frogs to burrow into?			
Does the surrounding land provide a soak area? (wet, boggy soil?)			
Is the pond devoid of fish and other frog predators?			
Does the pond avoid filling with run-off from paths and other disturbed areas?			
Is the water odour free?			
Is the water clear?			

**Tally up the number of ticks in each column. Give 3 points for good, 2 for average and 1 for poor. If the pond rates less than 25 then it is unlikely to support more than one or two hardy species. If it rates above 40 then this is a perfect froggie habitat.....**

## **BUILDING A FROG FRIENDLY HABITAT**

As pressure is placed on our urban wildlife, school grounds are becoming a great refuge for birds & animals. Wildlife habitat, such as an attractive pond, is a great stimulus for children and provides fantastic opportunities for environmental education.

The best ponds for both kids and wildlife are shallow ones. They only need to be 30cm in depth, ensuring the banks of the pond are gentle and sloping. To run a satisfactory activity using the pond, it will need to be large enough to fit all the students around it comfortably. A school pond will receive a great deal of attention, and the pond needs to be designed with this in mind. Fencing around the pond is recommended to ensure the safety of students and to reduce the chance of vandalism.

### Light Construction Pond

A simple hole in the ground with a heavy duty pond liner can be adequate. Place a thin layer of sand along the bottom before laying the liner and secure sleepers & rocks around the edges.

### Concrete Pond

Professional advice is advised if considering this type of pond. The concrete needs to be mixed with a waterproofing agent. You may also wish to paint the surface with a special coating that stops the lime leaking into the water.

### What goes in and around the pond?

Unless you plant some water plants, many creatures will not want to make a home in the pond. Obtain some indigenous water plants from your local nursery. Never take them from the local wetland to avoid introducing weeds. It is best to provide heavy vegetation around at least some of the pond. These will provide a refuge for small creatures (tadpoles). Provide shelter for adult frogs by including rocks, leaf litter, shrubs, tussocks, thick ground hugging plants and logs in your pond construction. When filling your pond, pour in some local pond water to seed it with algae, bacteria and tiny creatures.

### What to avoid.

Do not introduce fish, and let the frogs move in themselves. Avoid putting soil or mud in the pond and beware that fountain pumps may vitamise small animals.

## LIFECYCLE OF A FROG



Male and female frogs come together to shed eggs into the water.



Frogs eat small flying pond insects.



The eggs in the jelly grow into small tadpoles.



Tadpoles grow legs and lungs.



Tadpoles eat water plants.