

The Frog File

Meet some amazing amphibians!

This teachers' supplement should be used in conjunction with Project Pull-out #27: The Frog File, which is found in DMAG's issue 80, November 2008. The Project Pull-out will inspire students to learn about frogs.

These activities encourage students to:

- Learn about an amphibian's life cycle
- Understand why amphibians are unique
- Realise that changes to the environment affect the food web
- Learn about wet and dry environments
- See that humans shape the environment

Science and Technology: Cycles in Our World

Read the story on page 46-47 of DMAG and discuss the life cycle of a frog. Talk about the life cycles of other animals e.g. birds, mammals, fish, insects and reptiles.

What animals lay eggs? Do other creatures other than amphibians start off life in the water and then change into land dwellers? For instance, mosquitoes and dragonflies start off in the water too. Ask the students to complete the "Draw the life cycle" exercise on the activity sheet.



Major project extension:

Explain that everyone in the class is to do a major project on frogs. Each child is to choose a native frog. There are over 200 species of frog in Australia so each child should choose a different one.

Task 1 for the major project is to draw the life cycle for their particular frog. This should include the time taken for each stage, and descriptions such as where eggs are laid.

Note: Not all frogs have the same life cycle. There are quite a few unusual ones – for instance, some froglets hatch straight from eggs and one, the gastric brooding frog (which has just become extinct) incubates the eggs in her stomach.

Science and Technology: Mini-worlds

Discuss the food web and the sorts of things that would be in a frog's environment to provide the food. For

example – where would tadpoles live? What would tadpoles eat? What would frogs eat? Would there be creatures that eat frogs, tadpoles or spawn? As a class, mind-map the different things you might expect to find in a frog's environment.

Class excursion

If possible, visit a local creek or wetland. When the students approach the wetland, ask them to be very quiet to listen if they can hear frogs croaking. Perhaps they can hear a lot of other insects. Note these down for further investigation.

When there, ask each child to draw some examples of the insects, plants, and creatures living in the water. Be on the lookout for spawn, tadpoles and of course, frogs.

Ask the students to describe the surroundings – e.g., is the water clear, fast moving, smelly, filled with rubbish, oil-covered etc. What are the banks

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like – muddy, sandy, reed-covered, rock-lined, tree-lined etc. Back in the classroom, draw a table on the board with all the plants and animals found. If possible, transfer this into a spreadsheet database.

Discuss and compare

As a class compare the results of the excursion with the mind-mapping exercise carried out earlier. Was the creek or wetland what they expected? Do they think frogs might live there? Do they think the creek or wetland could be healthier?

Brainstorm some changes that might affect the frog's environment. Draw up a table (matrix) showing the effects of those changes. For instance – drought (the change) would affect tadpole growth as the water might disappear. Polluted water (the change) might cause tadpoles to die. The introduction of exotic fish might lead to a decrease in frog spawn, as it's being eaten by fish. Disappearance of insects might lead to fewer frogs. Feral cats might lead to fewer frogs as they're being eaten.

Major project extension:

For each child's individual major project, as task 2, ask each student to describe in detail the environment their particular frog is found in, including what the frog eats – and if possible, what eats the frog!

HSIE: Australian Environments and Wet and Dry Environments

Discuss and brainstorm as a class, different wet environments such as



lakes, creeks, swamps and rivers. Are some of these linked – for instance, does one flow to the other? What happens to watercourses when an area is developed?

Note that watercourses generally remain, they just become hidden. For instance, they are covered up and become part of the stormwater system, or get diverted into channels and culverts.

Extension: Find the watercourses in the school's local area. If possible, obtain aerial photos taken before the area was developed and after. Ask students to ask their family members if they remember anything being different. For instance, a grandparent might remember that a shopping centre was built in an area that was once a swamp.

Look at topographic maps showing land contours. From the contours, try to work out where water might flow.

Investigate how the original waterways in an area match up with the current stormwater channels. Discuss where litter goes if it's dropped in the street. Discuss if there are fewer wet environments

around your area now than in the past. Talk about ways to have more wet environments in the area – e.g. making frog ponds, regenerating areas around drains so that they look more like creeks and wetlands etc.

Build a frog pond!

Tell the class they are going to build a frog pond. They will need to design it taking into account all the things they have read in *DMAG* and have learnt from observing the local watercourses and the things frogs need to do well. As a class work out the steps needed to actually build the pond.

If you are able to build it, do so. Once frogs come to the pond, ask the class to see if they can identify them.

Major project extension:

As the third task in each student's individual project, ask students to design a "have you heard this frog?" poster. They will need to do a big picture of the frog, plus briefly describe where the frog is found, if it's endangered, and of course what it sounds like!

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