

May



Fócas ar Amfaibiaigh – Mí na Bealtaine

Paddy Madden continues his series of SESE tips

zoom in on amphibians

Background information

An amphibian is a cold-blooded, soft-skinned vertebrate that can live on land and in water. (The word amphibian comes from the Greek words, amphi (both) and bios (life)-double-life. They lay eggs in water which hatch into larvae. The larvae undergo metamorphosis in order to change into adults. They include frogs, toads, salamanders, newts and caecilians. In Ireland we only find the common frog, the smooth newt and the natterjack toad. Amphibians are in decline all over the world because of habitat loss, pesticides and pollution of water.

Key areas to study

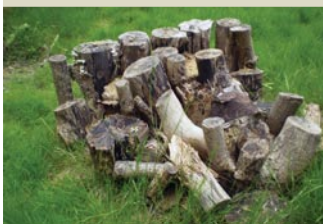
- ✘ Classification
- ✘ Habitat
- ✘ Life cycle
- ✘ Food
- ✘ Place in food chain/web
- ✘ Adaptation
- ✘ Threats

Classification

Vertebrates can be classed into 5 groups: Fish, reptiles, amphibians, birds and mammals.

Ancestry

The climate in the DEVONIAN PERIOD (415-355 million years ago) became hot and dry with a resultant drop in water levels. A group of fish adapted to breathing both in and out of water. These became the first amphibians. During the Permian Period (290-250mya) amphibians evolved into the first reptiles.



Logs near pond for shelter and hibernation.



Frog life-cycle sequence

- Eggs** (tadpole digests jelly after 10 days)
- 2 days old** (eyes, mouth, tail, external gills, eats algae and water plants)
- 5 weeks** (lungs developing, growth of hind legs, becomes a carnivore)
- 10 weeks** (growth of front legs, tail gets smaller, hind legs fully grown)
- 12 weeks** (tail nearly gone, froglet can breathe out of water)
- 3 years** (fully grown, able to breed).

Active learning

Make food chains and webs using a ball of string and laminated cards with pictures of the following on them: sun, frog (2 cards), green leaf, rotting leaf, caterpillar, earth-



Natterjack toad

worm, snail, slug, woodlouse, owl, seagull, stoat, rat, fox, hedgehog, rook, heron, otter, badger, pine marten. Hand out the cards to the children.

One child holds the ball of string and is labelled 'sun'. This child says, "Who makes food using my energy?" The child with the picture of the leaf answers, "I do". A piece of string is extended to the 'leaf'. "Who else makes food using my energy?" The child with the picture of the rotting leaf says, "I did." The string is extended to the 'rotting leaf'. The 'sun' continues: "Who eats the green leaf?" the 'caterpillar' answers, "I do" and the string is extended to it. The game continues until every child is connected to the 'sun'. The teacher then explains that if anything happens to any part of the web every creature is affected. If someone puts a pesticide on the leaf every creature gets a small dose of poison. This teacher demonstrates this by pulling on the string. Every creature feels the pull.



Alex and Nadia Condon dipping in author's pond.

- **Make an ecology tank:** www.blackrockec.ie February Project
- **Caring for tadpoles:** www.blackrockec.ie April Project

Are the school grounds frog-friendly?

See www.blackrockec.ie click on Projects/Resources and then on Environmental Activities and then on How to make a wetland habitat.



Male and female frogs with spawn.

Tadpole care

- ✦ Use an ecology tank. See www.blackrockec.ie. Click on Resources. Don't worry if you don't have water snails etc. The tank should have gravel/sand to filter the dirt from the water and also submerged water weed to act as an oxygenator.
- ✦ Tadpoles without legs are herbivores. They will eat algae, pondweed and tiny pieces of lettuce which have been boiled for about 10 minutes and then put into the fridge to keep them fresh.
- ✦ Clean tank water once a week. Remove most of water with a small container or tube leaving about 2.5 cm in bottom. Refill with water which is the same room temperature as that which was removed. If you are using tap water leave it in an open dish for at least 24 hours so that chlorines, fluorides etc. can evaporate.
- ✦ When tadpoles get legs they become carnivores. Feed with small amounts of goldfish food such as daphnia (dried water fleas) and ants' eggs.
- ✦ When they start turning into frogs provide them with a small stone to sit on. Cover the tank with muslin or J cloth tied with elastic band to prevent escape.
- ✦ They should then be returned to the pond from which they came!

Literacy

Young children love listening to *Aesop's Fables*. Many of these have stories relating to frogs such as *The Frog and the Crow*. They are available on <http://www.aesopfables.com> They can also be



Common frog

down-
loaded
from YouTube.

The Frog Prince is on www.ipcc.ie

Interactive whiteboard

www.naturegrid.org.uk/pondexplorer/pondexplorer.html

Useful websites

- ✦ www.ipcc.ie Hop to it frog survey; poetry, stories, jokes, facts, froggy links.
- ✦ www.naturedetectives.org.uk Amphibian ID sheet; Pond spotter sheet; frog life-cycle dial; frog mask.
- ✦ www.sip.ie/sip022/frogs.htm useful worksheet on frogs
- ✦ www.iwt.ie National newt survey 2011.
- ✦ www.seomraranga.com/2011/2012 Irish frog survey.
- ✦ www.askaboutireland.ie Information on newts and frogs in Ireland.
- ✦ www.overthegardengate.net Practical information on frogs, toads, newts.
- ✦ www.nationalgeographic.com Information on the cane toad which is a serious invasive species in Australia.



Golden Poison Frog – most poisonous animal on Earth.

Useful books

- ✦ *Go Wild at School* (3rd Ed. 2011) by Paddy Madden. Shows how to make a pond and marsh.
- ✦ *Talking Wild* (2002), *Wild and Wonderful* (2004) and *Straight Talking Wild* (2006) by Eanna Ní Lamhna (Townhouse).
- ✦ *Complete Irish Wildlife* (Collins, 2004).



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Go Wild at School is available now for €15 plus €2.50 p&p. To purchase contact paddy.madden@mie.ie. He is also the author of *The School Garden* – What to do and when to do it. This is available from the same email address for €10 plus €2 p&p.



Wildlife pond.

Strand Units covered this month
Environmental awareness, caring for the environment, plant and animal life, the local natural environment.



Smooth newt