



# Frisch's Outreach: Reptiles and Amphibians (Gr.4-6) Extensions

## At a glance

This program will allow students to explore Reptiles and Amphibians and their unique adaptations.

### Goal

This class is designed to familiarize students with the many different adaptations Reptiles and Amphibians possess and how they survive in our world.

### Objectives

- 1.) Students will be able to name the characteristics of Reptiles.
- 2.) Students will be able to name the characteristics of Amphibians.
- 3) Students will be able to name three specific adaptations that allow Reptiles and Amphibians to survive.

- 4) Students will be able to name two ways Reptiles and Amphibians are beneficial to our world.

### Theme

Reptiles and Amphibians share common characteristics but also are very different from one another.

### Sub-themes

1. Reptiles and Amphibians possess many adaptations that allow them to survive in very unique habitats.
2. Reptiles and Amphibians have special roles to play in keeping the natural balance of our world.

## Academic standards

Ohio Academic Content Standards-Science	<p><i>Fourth Grade Standards</i></p> <p>Life Sciences</p> <p>Diversity &amp; Interdependence of Life 5</p> <p>Scientific Ways of Knowing 1</p> <p><i>Fifth Grade Standards</i></p> <p>Life Sciences</p> <p>Diversity &amp; Interdependence of Life 4,5,6</p> <p>Doing Scientific Inquiry 3</p> <p>Scientific Ways of Knowing 1</p> <p><i>Sixth Grade Standards</i></p> <p>Life Sciences</p> <p>Characteristics &amp; Structure of Life 2</p> <p>Diversity &amp; Interdependence of Life 8</p> <p>Scientific Inquiry</p> <p>Doing Scientific Inquiry 3,4</p> <p>Scientific Ways of Knowing</p> <p>Nature of Science 1</p> <p>Science &amp; Society 3</p>
Kentucky Core Content-Science	<p>Life Science K-4</p> <p>-The Characteristics of Organisms (SC-E-3.1.1, SC-E-3.1.3)</p> <p>Life Cycles (S-E-3.2.1)</p> <p>Organisms and Their Environment(SC-E-3.3.1, Grades 5-7</p> <p>Regulation &amp; Behavior SC-M-3.2.1</p> <p>Populations &amp; Ecosystems SC-M-3.5.1, SC-M-3.5.2</p> <p>Structures &amp; Function in Living Systems SC-M-3.1.1 SC-E-3.3.2)</p>

## Background

Reptiles are very unique animals. As a group they are ectothermic animals that share the common characteristics of possessing a backbone, scaly skin, lungs, and claws (when appendages are present). Most are egg bearers (either inside or outside the body). Most do not show parental care (alligators and

crocodiles are the exceptions).Some snakes do incubate their eggs. Young reptiles resemble adults (mini-adults) and do not go through a metamorphosis to reach adulthood.

There are four orders of Reptiles- Crocodylians (alligators and crocodiles),

turtles and tortoises, lizards and snakes, and tuataras (a lizard like reptile). Because of their unique adaptations Reptiles can be found in many different habitats from suburbs to deserts and oceans. They are absent only from the Polar Regions and mountain peaks.

Amphibians are also a diverse group of animals but share some common characteristics. All amphibians live a “double –life”. They must spend part of their life in water (as larvae) and part on land (as adults). Some Amphibians spend their whole lives in water. Others return to water as adults for a time.

Amphibians are all ectothermic, possess a backbone, moist, permeable skin, and lungs (at least as an adult). They lay eggs in a jelly-like substance, go through metamorphosis to reach adulthood, and offer no parental care (some frogs brood their young in their mouths or on their backs ). There are about 4,950 species of Amphibians. Frogs and Toads, Salamanders and Newts, and wormlike Caecilians can all be called Amphibians.

Both Reptiles and Amphibians make important contributions to the natural balance in our world. Because of their unique adaptations Reptiles can keep insect and rodent populations in check in many varied habitats on our planet. Amphibians also contribute to the maintaining the correct balance of insects and smaller animals. Their distinctive permeable skin allows them to be indicators of the health of the waterways they inhabit.

### **Vocabulary**

*Amphibian*- an ectothermic vertebrate that spends some time on land but must breed and develop into an adult in water

*Bask*-to hold the body in a position directly exposed to the sun’s rays

*Carapace*- the upper, convex portions of a turtle’s shell

*Ectothermic*- having a body temperature which varies with the surrounding environment

*Herpetology*-(n) a branch of Zoology dealing with reptiles and amphibians

*Herpetologist*-(n) one who studies herpetology

*Indicator Species*-a species that readily reflects the health of their habitat

*Jacobson’s Organ*-a small cavity in roof of the mouth lined with sense detectors that recognizes chemical changes and enable some reptiles to smell with their tongues

*Metamorphosis*-a complete or marked change of physical form, structure, or substance

*Oviparous*- producing eggs that develop and hatch outside the maternal body;

*Ovoviviparous*-producing eggs that develop within the maternal body (as of various fishes or reptiles) and hatch within

*Permeable*- capable of allowing liquid and gas to pass through

*Plastron*- the lower portion of a turtle’s shell

*Reptile*-an air breathing, ectothermic, vertebrate with an outer covering of scales

*Scale*-a thin flattened plate-like structure forming part of the surface covering various animals

*Scute*-a thin, flat, bony, or horny plate of a scale

*Vertebrate*-animal having an internal backbone

*Viviparous*-bearing live young, not egg

## Assessment

*Unsatisfactory*—student seems uninterested, does not participate, and does not answer questions

*Satisfactory*—student seems somewhat interested, participates to some degree, and attempts to answer questions when asked

*Excellent*—student seems very interested; participates willingly in all activities, and answers questions. Student offers his or her own questions.

## Extensions

Be a Herpetologist! Can you design a habitat for a Herpe? What would it need? Can you tell others about your choices?

Spot That Reptile! Spot That Amphibian! Place picture cards of Reptiles and Amphibians face down (2 pictures of each). Lift and Match. If the pictures match keep them face up. If they do not match they are placed face down again. How long does it take to uncover all of the pairs? This may help learners identify particular types species.

Live like a Reptile or an Amphibian! What would it be like to be a snake, a lizard, a tuatara, a frog? Write a story or draw a picture to tell your friends what you could do or what you could not do!

Postcard from a Herpe!

Write a postcard from a snake in Africa, a Poison Arrow Frog in S. America, or a Komodo Dragon on the Island of Komodo! Tell what you have been doing in your habitat!

## Resources

### Organizations

American Society of Ichthyologists and Herpetologists (ASIH) crocodilians, turtles, tuatara -publishes the journal *Copeia* [www.asih.org](http://www.asih.org)

Partners in Amphibian and Reptile Conservation (PARC)-conservation network and resource [www.parcplace.org](http://www.parcplace.org)

Society for the Study of Amphibians and Reptiles (SSAR)-publishes *Journal of Herpetology*, *Herpetological Review*, *Catalogue of American Amphibians and Reptiles* [www.ssarherps.org](http://www.ssarherps.org)

### Books

Gunzi, Christiane. *Amphibians & Reptiles*. Thunder Bay Press. 1995.

Louv, Richard. *Last Child in the Woods: Saving Our Children From Nature Deficit Disorder*. Algonquin Books, 2005.

Morris, John. *A Look Inside Reptiles*. Readers Digest Young Families. 1995.

### Websites:

ALA's Great Websites for Kids: Animals <http://www.ala.org/gwstemplate.cfm?section=greatwebsites&template=/cfapps/gws/displaysection.cfm&sec=1>

Awesome Library – Kids <http://www.awesomelibrary.org/Classroom/Science/Animals/Animals.html>

Awesome Library – Teachers  
<http://www.awesomelibrary.org/Classroom/Science/Animals/Animals.html>

Center for North American Herpetology  
Lawrence, Kansas  
<http://www.cnah.org>

Cincinnati Zoo & Botanical Garden  
[www.cincinnati-zoo.org](http://www.cincinnati-zoo.org)

ENature  
[www.enature.com](http://www.enature.com)

Internet Public Library/Kidspage/  
Animals (comprehensive listing)  
<http://www.ipl.org/kidspage/browse/mas4500>

National Geographic: Animals  
<http://www3.nationalgeographic.com/animals/>

