



# WILD Kids



## Herpetology or "Who's A Herp?"

Herpeton is Greek for "crawling things." **Herpetology** is the study of amphibians *and* reptiles. Mammalogy is the study of mammals. Ornithology is the study of birds. Ichthyology is the study of fish. Why do scientists study amphibians and reptiles together?

Before answering this question, other questions need to be answered: What are amphibians? What are reptiles? How are they the same? How are they different?

### What are reptiles?

Reptiles include turtles, lizards, alligators, crocodiles, and snakes. There are 6 species of turtles/tortoises, 42 species of lizards and 33 species of snakes native to Arizona. What do all these species have in common?

First, reptiles reproduce on land. They lay eggs or give live birth on land. Their eggs are leathery and have a tough shell that slows water loss. All reptiles also have dry, scaly skin that is waterproof. This characteristic may explain why reptiles do so well in deserts.



Horned Lizard

through their moist skin into their bodies. Moist skin "breathes" better than dry skin.

Amphibians undergo a process called metamorphosis, meaning 'a marked change in appearance.' Amphibians lay jelly-coated eggs in water (or right by it). These eggs develop into larvae and hatch. Amphibian larvae *look different than adults* and are often described as a head with a tail. As they develop, their limbs grow, the tail and/or tail fin shortens, the mouth changes shape, and the larvae begin to look more like adults. Once larvae become terrestrial (live on land), metamorphosis is complete.

### How are they the same?

Reptiles and amphibians are both animals. They must eat other organisms to survive. They are ectothermic. *Ecto-* meaning outside and *-thermic* meaning heat. Ectothermic animals obtain their body heat from the environment. The term "cold-blooded" is inaccurate in describing amphibians and reptiles. Their blood is not always cold. When reptiles or amphibians are too cold they bask in the sun to warm up. If they are too hot, they seek shelter to cool off. The environment plays an important part in their daily activities.

### How are they different?

There are many differences between reptiles and amphibians. Reptiles have claws (those with limbs that is!). Amphibians do not. Reptiles lay shelled eggs on land. Amphibians lay jelly-coated eggs in water. Reptiles have dry, scaly skin. Amphibian skin is moist and without scales. Amphibians breath with lungs, gills and through their skin. Reptiles use only their lungs. Finally, amphibian larvae do not look like adults when they are born. They undergo metamorphosis. Reptile young look like miniature adults when they are born. They do not undergo metamorphosis.



Leopard Frog

### What are amphibians?

Amphibians include salamanders, frogs, toads and caecilians (an amphibian without arms or legs). There are 19 species of frogs and toads and 1 species of salamander native to Arizona. What do these species have in common?

First, all amphibians breath by using three different organs during their life: gills, lungs and skin. Gills are used by all larval (young) amphibians and some adults. Larval amphibians are aquatic, meaning they live in water. Gills are used to take oxygen from water. Lungs are used by most adult amphibians (there are a few species of lungless salamanders which are not found in Arizona.). Amphibian skin is moist. Oxygen passes

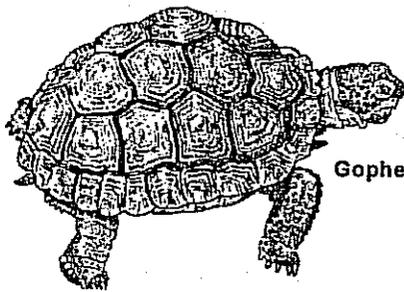


Sidewinder

## Why study reptiles and amphibians together?

There are more differences between reptiles and amphibians than there are similarities. So why are they lumped together? In the mid 1700's Carolus Linnaeus began writing and publishing books. Linnaeus' ambition was to classify every living thing on Earth. At this time, Linnaeus lived in Sweden where there were not many amphibians or reptiles. When he began grouping and classifying animals, he decided that amphibians and reptiles were 'similar', 'few' and 'unimportant' and should be lumped together!

We now know many things that Linnaeus did not know. Amphibians and reptiles are not very similar. Each has its own set of characteristics. There are many more species of amphibians and reptiles than Linnaeus first calculated. There are over 6,000 species of reptiles and about 4,300 species of amphibians worldwide! Finally, they are both important classifications of animals. But because of tradition, scientific tradition, they are studied together under the heading **HERPETOLOGY**.



Gopher Tortoise

### Activity I: Salamander, Frog, Toad and Caecilian.

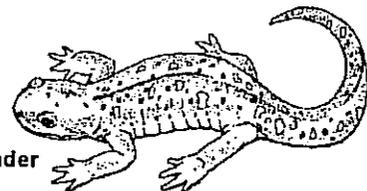
Why are salamanders, frogs, toads and caecilians grouped together? Using the knowledge you have now, draw a picture of each. Make a list of characteristics of each under the pictures you drew. How are they the same? How are they different? Are there more similarities or differences? After you have exhausted your personal knowledge of these creatures, go to the library and see if more information exists (it does!). The first question most of you may ask is, 'What is a caecilian?' (Many of us here at Arizona Game & Fish would ask that same question!) After you have finished this activity, share your results with others in your class. Did your classmates come up with the same characteristics for each species?

### Activity II: Arizona Herps

Below is a list of 30 amphibians and reptiles. Only 20 are *native* to Arizona. First, circle the ones you think are NOT Arizona natives. Then look for the others in the puzzle below (only the part of each name in **bold** may be found in the puzzle). The words can be found forward, backward and diagonally. Finally, where are the amphibians and reptiles you circled found?

- |                             |                                |
|-----------------------------|--------------------------------|
| Alligator                   | Green Toad                     |
| Banded <b>Gecko</b>         | <b>Horned</b> Lizard           |
| <b>Barking</b> Frog         | <b>Leopard</b> Frog            |
| <b>Bullfrog</b>             | Milk Snake                     |
| Canyon Tree Frog            | Northern Alligator Lizard      |
| <b>Chuckwalla</b>           | <b>Painted</b> Turtle          |
| <b>Coachwhip</b>            | <b>Red Diamond</b> Rattlesnake |
| <b>Collard</b> Lizard       | Red-bellied Newt               |
| <b>Coral</b> Snake          | <b>Rosy</b> Boa                |
| <b>Corn</b> Snake           | <b>Spadefoot</b> Toad          |
| Dwarf <b>Python</b>         | <b>Striped</b> Racer           |
| <b>Del Norte</b> Salamander | <b>Tiger</b> Salamander        |
| <b>Gila</b> Monster         | Tree Lizard                    |
| <b>Gopher</b> Snake         | <b>Western</b> Toad            |
| <b>Gopher</b> Tortoise      | <b>Yellow</b> Mud Turtle       |

C O R A L B A O M W P S D S  
 B H E S I O T R O T P U E D  
 U T U G K A M T Y A I M N C  
 L O K C E G F I D I H E R Y  
 L V H R K L I E L L W R O G  
 F R O P H W F L P K H C H O  
 R A T S M O A D A P C L C P  
 O A I B O C E L B S A D O H  
 G I G T L G F D L J O R L E  
 O E E R T N O Y N A C A L R  
 A W R X E R I B A L Q P A X  
 T H I S S E A O B Y S O R U  
 S B A R K I N G Z K T E D I  
 T R E E S D U M W O L L E Y



Tiger Salamander