Reading Essentials in Science

ALL ABOUT ANIMALS

Amphibians and Reptiles

JOANNE MATTERN

PERFECTION LEARNING®

ALL ABOUT ANIMALS

Amphibians and Reptiles

Genre

Expository

Text Features

Contents	Chapter Headings	Index	Sidebars	Captions
Chapter Titles	Glossary	Experiments	Bulleted Lists	Photographs

Organizational Patterns

Concept/Definition	Description	Cause and Effect

Vocabulary

amphibian	burrow	camouflage	carnivore	cold-blooded
deciduous	deformity	gill	habitat	herbivore
hibernate	nocturnal	omnivore	predator	prey
reptile	skink	vertebrate	warm-blooded	

Overview

Amphibians and reptiles share several characteristics, but they also differ in a variety of ways. Both animal groups are cold-blooded vertebrates with similar ways of moving. They can both live almost anywhere on Earth, but only amphibians spend their youth in the water. Both species are divided into several major groups. Amphibians include frogs, toads, salamanders, newts, and caecilians. Snakes, turtles, tortoises, lizards, alligators, crocodiles, and tuataras are members of the reptile family.

Amphibians and reptiles come in all shapes and sizes. Amphibians grow and change in the water until they reach adulthood and move onto land. This process is called *metamorphosis*. All amphibians have a thin skin that keeps them moist. Reptiles hatch on land and have several different body types. Reptiles have a dry skin made of scales. Both amphibians and reptiles have strong senses that help them survive in their environment.

The life cycles of amphibians and reptiles are similar. Most members of both species begin as eggs. The offspring are then left to fend for themselves. Many have body structures or behaviors that help them escape from predators. Adults spend much of their time regulating their temperatures. Some even hibernate to survive cold weather.

Amphibians and reptiles have varied diets. These animals can be found almost anywhere in the world, especially near water. Unfortunately, as humans destroy and pollute habitats, the number of amphibians and reptiles in the world continues to decrease. Protecting these unique creatures is important to maintaining nature's balance.

Table of Contents

1 Introducing Amphibians and Reptiles

Amphibians and **reptiles** are some of the most unusual animals in the world. These two animal groups share several characteristics. They also differ from each other in a variety of ways. Let's meet this interesting bunch of creatures!

Alike and Different

Amphibians and reptiles are both **vertebrates**. That means they have a backbone.

Both amphibians and reptiles are **cold-blooded**. Their body temperatures change with the air temperature. When it's hot, they warm up. When it's cold, they cool down.

Most adult amphibians and reptiles have similar ways of moving. They crawl on their bellies or walk on very short legs. Frogs and toads, however, hop on legs that can actually be quite long when stretched out.

Amphibians are creatures of both water and land. These animals are born in water. They stay in the water while they're young. Over time, their bodies change. After these changes, adult amphibians live on land.

Some reptiles live near or in water, but many do not. Reptiles can even live in the desert where it's very dry.

Some amphibians and reptiles are large and frightening. The open jaws of an angry alligator could scare anyone! Other amphibians and reptiles are quiet and shy. Many lizards, for example, are so good at hiding that you can walk past without noticing them.

All in the Family

More than 4500 species of amphibians live on Earth today. These species are divided into several major groups. They include salamanders, newts, frogs, toads, and caecilians.

A Note About Newts

Newts are actually members of the salamander family.

There are many types of reptiles too. Snakes, turtles, tortoises, lizards, alligators, crocodiles, and tuataras are members of the reptile family. More than 6500 different species of reptiles roam the planet today.

Prehistoric Reptiles

The dinosaurs that lived millions of years ago were reptiles.

Alligator

2 Body Basics

Amphibians and reptiles come in all shapes and sizes. Here are the facts about these creatures and their bodies.

Presto, Chango! I'm an Amphibian!

Most animals have the same bodies all of their lives. Their bodies get bigger or longer, but they keep the same shape and form. Amphibians do things differently! These creatures have two bodies—one for their life in the water and another for their life on land. The change in their bodies is called *metamorphosis*.

More Than One Life

The word *amphibian* comes from the Greek word *amphibious*. *Amphi* means "both." *Bios* means "life." So amphibians lead "both" lives—one in the water and one on land.

Most amphibians lay their eggs in the water. When the eggs hatch, the young swim away. At this stage, the tiny young animals are called *larvae*. Larvae have **gills** for breathing underwater. They also have bodies made for swimming.

Frogs and toads are a great example of how amphibians go through metamorphosis. When most frogs and toads hatch, they're called *tadpoles*. Tadpoles have gills and round, fat bodies. They don't have legs, but they have a tail that propels them through the water.

As tadpoles grow, their bodies change. Their tails are replaced by four legs. Their eyes become bigger and rounder. Their mouths get bigger too. Lungs grow inside their bodies, and the gills disappear. Now the tadpole is called a *froglet* or *toadlet*. Soon it is able to leave the water and live on land. When it has completed its metamorphosis, the adult animal is called a *frog* or a *toad*.

Red-eyed leaf frog tadpole

Toad

Inside Changes

Some types of salamanders go through metamorphosis before they hatch. Their eggs have large yolks that feed the babies as they grow and change. When the salamanders are born, they have adult bodies.

Scientists divide amphibians into three groups. One group has tails. This group includes salamanders and newts. The second group does not have tails. This group includes frogs and toads. Caecilians make up the third group. Caecilians have no arms or legs. They look like worms.

Caecilian

Except for the caecilians, all amphibians have four legs. The front legs have four toes on each foot. The back feet have five toes each.

Amphibians have to stay wet or their bodies will dry out. They have a special thin skin to help them stay moist. Special glands in the skin produce slime that keeps the amphibians wet.

Reptile Style

Reptiles are divided into four groups. The first group includes snakes and lizards. The second group is made up of crocodiles and alligators. The third group is turtles and tortoises. The fourth group has just one member—the tuatara.

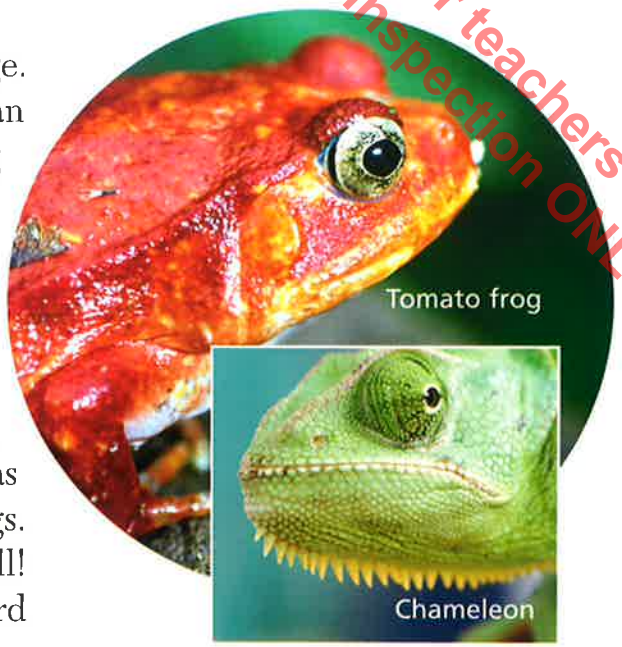
One of a Kind

The tuatara lives in just one place—New Zealand. This reptile is the only surviving member of a family of reptiles that lived at the same time as the dinosaurs. Tuataras have soft, scaly skin and spikes running along their backs. They live in burrows and hunt at night.

Some reptiles are very large. Crocodiles and alligators can be more than 16 feet long and weigh several hundred pounds. Other reptiles are small. Some lizards are just a few inches long and weigh only a few ounces.

Reptile bodies vary. Lizards, crocodiles, alligators, and tuataras have long tails and four legs. Snakes have no legs at all! Turtles and tortoises have hard shells on their backs.

All reptiles have cool, dry skin. Their outer skin is made of scales. These scales provide a tough, protective covering for the animals.



More in Common Than You Thought

If you thought you had nothing in common with reptiles, think again. The scales on a reptile are made of keratin. This is the same material found in your fingernails, hair, and the top layer of your skin.

That Makes Sense!

Most amphibians and reptiles have good eyesight. A frog's bulgy eyes can see forward, backward, above, and to both sides. This helps frogs sense even the smallest movement. Chameleons can move each eye on its own. This means the lizard can look in two different directions at the same time.

Most amphibians and reptiles don't have ears that can be seen on the outside of their bodies. These animals do, however, have inner organs that help them hear. Iguanas and frogs have thin eardrums in the skin behind their eyes. Snakes and salamanders "hear" animals by sensing vibrations in the air and on the ground.