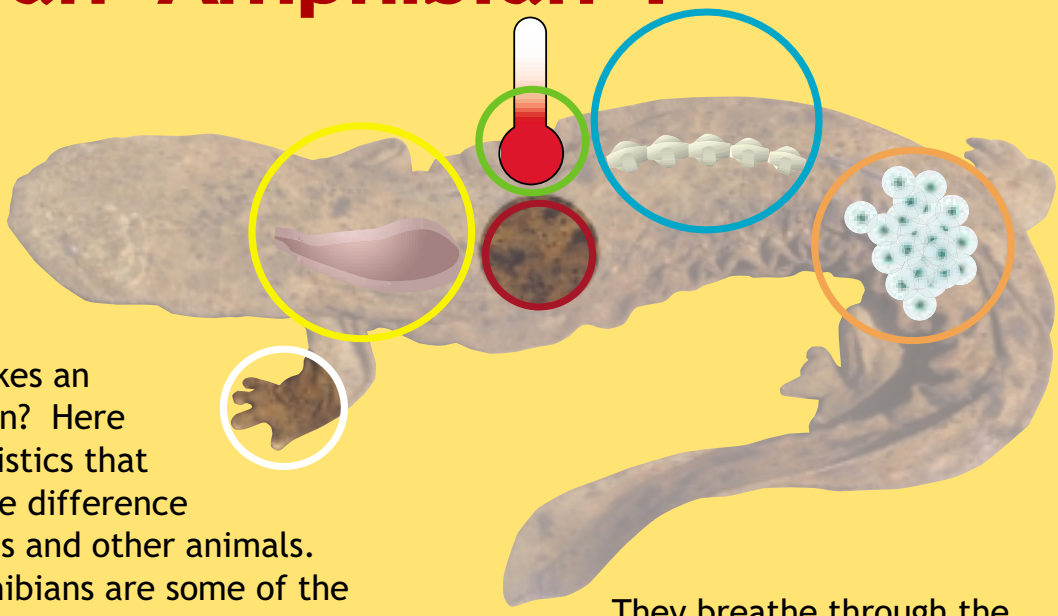
What is an "Amphibian"?



Have you ever wondered what makes an animal an amphibian? Here are some characteristics that can help you tell the difference between amphibians and other animals.

Skeleton: Amphibians are some of the oldest living vertebrates. They have an internal skeleton, or *endoskeleton*.

Skin: Most amphibians have moist, smooth and slippery skin. Some secrete mucous through the skin, which makes them slimy. Others have dry, bumpy skin, like toads. One thing that all amphibians have in common is that their skin is scaleless and permeable (fluids pass through) to water.

Feet: Amphibians' feet are covered with skin and have no claws.

Breathing: Amphibians begin their lives with gills. Some lose their gills before leaving the egg. Most lose them when they reach the adult stage. There are exceptions, like the mudpuppies (Proteidae). They keep gills through their entire life. Sometimes a mole salamander (Ambystomatidae) will also keep gills into adulthood. These mole salamanders are called *axolotls* and never leave the water for their land stage. They are like adults with the features of the larval stage.

Most amphibians breathe through lungs after they lose their gills. There are exceptions, like the lungless salamanders. They breathe through the skin once they lose their gills. We call this *cutaneous respiration* ("skin-breathing").

Body temperature Amphibians are *ectotherms*. Some amphibians can adjust their body temperature, but it mostly varies with the temperature of the environment. This condition is completely different from what is found in mammals or birds, which we call *endotherms*. They are able to generate heat directly and maintain a fairly constant body temperature.

Eggs and young: The eggs of amphibians require moisture to survive, unlike the hard-shelled eggs of reptiles and birds. All Pennsylvania frogs and toads deposit their eggs in water. Many Pennsylvania salamanders also deposit their eggs in water. Others may deposit their eggs somewhere on land—under rocks, rotting trees, tree bark or leaves. All of these areas must retain some moisture for the salamander eggs to survive.