

### Summary Description

This is the seventh in a series of 11 lessons that introduces the student to Biology.

### Learning Objectives

To have the student learn a few key facts about amphibians.

### Approximate Time for Lesson

30 minutes

### Suggested Maturity Level for Instruction

Student should be able to read simple words and perform simple addition and subtraction. Also, student should be able to sit still and engage in one-on-one conversation.

### References:

Amphibians on Yahoo Kids - <http://kids.yahoo.com/animals/amphibians>

Animal Bytes: Amphibians - <http://www.sandiegozoo.org/animalbytes/a-amphibians.html>

### Materials Needed

1. Internet Access – Pull up the following:
  - a. Picture of mother caecilian and her babies (go to <http://lh4.ggpht.com/fisherwy/R635RmqosDI/AAAAAAAAANYc/jwcNDv1suD4/files/h+eating+amphibian+caecilians%5B2%5D>)
  - b. Picture of a tadpole (go to <http://users.manchester.edu/Student/AMCosaboom/Tadpoles/tadpole.jpg>)
  - c. Picture of Canyon Treefrogs (go to [http://wc.pima.edu/~bfiero/tucsonecology/animals/Images/amw\\_catr\\_07.jpg](http://wc.pima.edu/~bfiero/tucsonecology/animals/Images/amw_catr_07.jpg))
  - d. Picture of a Poison Dart Frog (go to [http://images.suite101.com/368414\\_com\\_frog51.jpg](http://images.suite101.com/368414_com_frog51.jpg))

### Preparation

Make sure you have materials open, printed and/or available prior to beginning the lesson.

### Script

#### Introduction (5 minutes)

1. Teacher: So last lesson we learned about insects. Can you tell me some facts about insects?  
[Engage the Student in conversation]
2. Teacher: Great. Now today, we're going to learn about animals that live in both water and land – we're going to learn about amphibians. So, are you ready to learn about amphibians? [Get positive response from Student and begin lesson]

#### Lesson (20 minutes)

1. Teacher: Great. Now, this may be the first time you've heard the word "amphibian", but you probably already know about or have seen some amphibians in real life. Amphibians are animals that are cold-blooded, meaning that they cannot control how hot or cold it is inside their bodies other than going into or coming out of the sun. Amphibians are vertebrates - that is, they have back bones, and spend part of their lives in water and on land. Also, most amphibians have slippery moist skin to help them swim faster in the water. If their skin dries out, they will die.
2. Teacher: So, to summarize, amphibians have back bones, they are slippery and spend part of their lives in the water and on land. Can you tell me if you know of any animals that have back bones, are slippery and spend part of their lives in water and on land? [\[Engage the Student in conversation but come to the point that frogs, toads, and salamanders are the most common answers\]](#)
3. Teacher: That's right. There are actually more than 4,700 kinds of amphibians grouped into 3 main groups: 1) salamanders, newts, and mudpuppies, 2) caecilians and 3) frogs and toads. Of course, frogs and toads are the most common kinds of amphibian while the salamanders, newts, and mudpuppies are next (they all look very similar and so are grouped in this category), and finally come the caecilians. We all know what frogs and salamanders look like. But not many people know what caecilians look like. caecilians are actually worm-looking creatures that live near water. Here's a picture of a mother caecilian and her babies (don't get grossed out!) [\[Show the Student the picture of a mother caecilian and her babies\]](#)
4. Teacher: Hope you didn't get grossed out by that. Now, remember I said that amphibians spend part of their lives in water and the other part on land? Well, how do you think amphibians can actually breathe in water and on the land? [\[Engage the Student in conversation but come to the point that animals that breathe underwater use gills while animals that breathe on land use lungs\]](#)
5. Teacher: Remember that word "metamorphosis" that we learned in our insect lesson? Metamorphosis means to change in shape as a living thing grows from a baby to an adult. And we're not talking about a little change, we're talking about a big change, just like a caterpillar changes into a butterfly; the baby looks completely different from the adult.
6. Teacher: Well, amphibians also go through metamorphosis. For example, a frog starts out as an egg, then hatches into a baby frog, called a tadpole. Here's a picture of a tadpole - tell me if this looks like a frog to you. [\[Show the Student the picture of a tadpole\]](#)
7. Teacher: Now doesn't this tadpole look more like a fish than a frog? Well, in many ways, it IS more like a fish. For example, tadpoles breathe underwater using gills, just like we use our lungs to breathe air on land. As the tadpole undergoes metamorphosis, that is, as a tadpole changes into a grown up adult frog, tadpoles lose their gills and actually grow lungs to breathe on land. They also grow legs and lose their long tails.

8. Teacher: If you think about it, this whole metamorphosis is all about a fish-like creature turning into a land creature, which is an amazing process because only amphibians can change their bodies like this as they grow into adults.
9. Teacher: And how do amphibians make more amphibians? Well, once they start out as eggs, then turn into tadpoles, and finally, into adults, the adults eventually return to the water to make eggs. And so, this whole metamorphosis and laying of eggs repeats itself and will continue to repeat itself into the future.
10. Teacher: But it isn't easy being an amphibian. There are so many animals (including us humans) that think of amphibians as part of the food chain – simply put, many animals like to eat amphibians because they are kind of easy to catch. I mean, most amphibians don't bite. Amphibians also don't have claws and they also don't sting. So how does a small amphibian defend itself?
11. Teacher: Well, first of all, amphibians have slippery skin so once an animal thinks it has one, the amphibian can easily slip out of an animal's mouth or claws. Some amphibians confuse their attacker by actually changing the color of their skin right in front of the attacker's eyes! Would you be kind of confused and scared if you were about to catch a frog and all of a sudden, it changed its skin color from say, green to red? While you are confused, the frog can safely hop away.
12. Teacher: Other amphibians just blend in with their surroundings and stay real still so it's hard to find them. Check out this these Canyon Treefrogs. [[Show the Student a picture of the Canyon Treefrogs](#)]
13. Teacher: There's a special word for when an animal uses its skin color to blend into the surroundings, it's called "camouflage". The Canyon Treefrogs, like the ones you see in the picture, are masters of camouflage.
14. Teacher: Other ways that amphibians defend themselves is by creating a thin layer of poison on their skin so if you touch them, you will get poisoned. Usually, these amphibians have bright color skin that send out a "Stay Back!" message to anyone who dares to get near them. Check out this Poison Dart Frog and don't touch one if you see it in real life. [[Show the Student a picture of the Poison Dart Frog](#)]
15. Teacher: Other tricks some amphibians use is to play dead, scream loudly, or even, like the Poisonous Red Eft, have the ability to live for up to 30 minutes in the stomach of their enemies until their enemies throw them back up (yuck!).
16. Teacher: And speaking of stomachs, as tadpoles, some amphibians eat small algae, which are tiny plants that live in water, while other tadpoles eat meat. Remember in our lesson on insects the words "herbivore" and "carnivore"? Animals that only eat plants are called "herbivores" while animals that only eat meat are called "carnivores". Well, as tadpoles, depending on the kind of amphibian, they are herbivores and carnivores. However, as adults, amphibians are almost always carnivores, that is, they almost

always eat meat. As long as their food is alive and can fit into their mouths, an amphibian will eat it. Examples of adult amphibian food are spiders, insects, worms, and snails.

17. Teacher: And why do you think amphibians are so important to our ecosystems, our planet? [Engage the Student in conversation but come to the point that amphibians are important because they are part of the food chain and without them, other animals may not survive and also, some other living things, such as insects might overpopulate the ecosystem]
18. Teacher: That's right. So many animals depend on amphibians for food that without them, these other animals might starve and disappear. Also, since amphibians eat smaller creatures, they help us to make sure that these smaller creatures such as insects and spiders don't take over the entire ecosystem.
19. Teacher: Ok - time for review. Stand up and get in front of the class (consider inviting other members of the family also to set the stage). [Ask Student the following:
  - a. How do you know if an animal is an amphibian? Any one of the following: 1) amphibians are cold-blooded 2) they are vertebrates 3) they spend part of their lives in water and on land, and 4) most amphibians have slippery moist skin.
  - b. Do amphibians lay eggs or have live babies? They lay eggs
  - c. What is an amphibian called when it hatches out of its egg but is not yet an adult? A tadpole
  - d. What are some things that change when a tadpole undergoes metamorphosis? Any one of the following: 1) tadpoles lose their gills and grow lungs, 2) tadpoles grow legs, and 3) in the case of frogs, tadpoles lose their tails.
  - e. Why are amphibians so important to our planet? Because they are part of the food chain and provide food for other animals while keeping smaller creatures from overpopulating our environment

Teacher reviews any questions that the Student missed].

Wrap Up (5 minutes)

Teacher: [Clapping] You did GREAT! Wonderful job! Are there any questions that you have regarding amphibians? [Engage in conversation with the Student and follow up with questions you cannot answer by researching the Internet]