

Frog Embryo Development Study Guide

Most vertebrate animal groups resemble the adults in appearance at the time they are either hatched or born. This is not true for amphibian vertebrates like frogs. A frog's appearance and body structures change between the time that the embryo hatches until it begins to look like an adult. The series of events that bring about these changes is called incomplete or gradual metamorphosis.

In this lab you will get an opportunity to examine the metamorphosis of a frog from egg to adult. You will examine 10 viewing cavities to investigate the structural characteristics for adult and embryo frogs. As you examine the specimens, answer the questions on this study guide. The questions will help guide you to the important phases the metamorphosis is undergoing.

1. Compare the adult male and female leopard frog. Do they look the same? _____

What are their differences? _____

2. Take a look at specimen # 1 (eggs), notice the dark and light parts of the egg:

How do the dark and light colored parts of the eggs compare in size? _____

Why does the dark part need to be on top? _____

Why is the yolk important to the newly developing frog? _____

3. In viewing specimen #2:

Examine the head region of the tadpole and look for the presence of gills. Are gills present? How many? _____

4. Specimen #3:

Are any gills visible? _____

Are gills necessary for respiration in this stage of development? _____

Why can't the gills been seen? _____

Note the "sucker" shaped mouth on the tadpole's head. Do you think this mouth structure would be suited for an herbivore or a carnivore type diet? _____

Name _____

5. Specimen #4:

Do you see any evidence of digestive organs in the animal at this stage? _____

What organs do you see? _____

6. Specimen #5:

Observe the hind leg development. What evidence can you see that suggests skeletal development? _____

What part of the hind leg has had the greatest increase in muscle development? _____

7. Specimen #6:

Note the change in the tadpole body shape between specimens #5 and #6. In specimen #6 observe how the body narrows at the location of the forelegs. As you observe the animal in cavity #6, identify 3 distinct regions now visible in the animal's body.

8. All Specimens

In what viewing cavity does the body appearance of the tadpole begin to look more like a young frog? _____

What has happened to the tail? _____

How do you think the respiratory system would function at this stage? _____

In what cavity does the skin surface appear to look similar to the adult frogs? _____

Frog Embryo Development Chart

