

Lesson Plan

Title: Amphibians

Abstract of lesson: An amphibian is a vertebrate that lives in water as a larva and on land as an adult, with some exceptions. It breathes with lungs as an adult, has moist skin that contains mucous glands, and lacks scales and claws. Early amphibians evolved several adaptations that helped them live at least part of their lives out of water. Bones in their limbs and limb girdles became stronger permitting more efficient movement. The lungs and breathing tubes enabled them to breathe air. Their sternum formed a bony shield that supports and protects the internal organs, especially the lungs. Their hearts have two atriums and one ventricle. The three groups of amphibians alive today are salamanders, frogs and toads, and caecilians.

Objectives:

- Students will learn to describe what an amphibian is and summarize the events on their evolution by observation and instruction.
- Students will learn how amphibians are adapted for life on land and the name of the three main groups of living amphibians by visualization and explanation.
- Students will learn to locate and identify the different parts of the digestive system, the lungs, and the heart of a frog by demonstration of a dissection performed by the teacher.

Teacher Materials/Technology Connections:

- Florida Prentice Hall Biology Teacher's Edition
- Digital Frog International DVD (Dissection)
- Discovery video
- iCORE

Student Materials/Technology Connections:

- Florida Prentice Hall Biology Student Edition
- Workbook Prentice Hall Biology Laboratory Manual
- Online activities (iCORE)

Key Vocabulary: cloaca, nictitating membrane, and tympanic membrane

Essential questions:

- Amphibians developed several important adaptations that allowed them to live partly on land. Which adaptation allowed them to breathe air?
- How many chambers have an adult amphibian's heart? Compare with a human heart.

Lesson lead in opening:

Have students complete prior knowledge for HW before the topic begins, a pre-assessment, to help students retrieve, use, and organize what they already know about amphibians and the correspondent benchmark with differentiated instruction.

Bell ringer: Video clip about a variety of live amphibians for students to observe.

I do: List the standard and benchmark, Bell ringer, PP presentation, and analytic or critical thinking questions (two) that encourage higher level thinking skills. Wait about five to seven seconds to think the answer.

We do: Lab activity demonstration Digital Frog Dissection with students and create teams of four students per table to perform their own laboratory activity under instructor supervision.

They do: Post instructional Assessment: Understanding of the section content by having them answer the essential questions and write a laboratory report analyzing results.

Lesson closure: Interactive games using the vocabulary words and FCAT Explorer games.

Florida Sunshine State Standards: Florida State FI Science Curriculum Framework & nets: Grades 9-12.

Strand F: Processes of Life

Standard 1: The student describes patterns of structure and function in living things (SC.F.1.4)

Benchmarks:

- SC.F.1.4.2: Body structures and function
- SC.F.1.4.6: Communication within the body
- S.C.F.1.4.7: Response to stimuli

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