

Activity – Tadpole Diary

Standard IV

Students will gain an understanding of Life Science through the study of changes in organisms over time and the nature of living things.

Objective 2

Living things change and depend upon their environment to satisfy their basic needs.

Intended Learning Outcomes

Generating Evidence: Using the processes of scientific investigations (i.e. framing questions, designing investigations, conducting investigations, collecting data, drawing conclusions).

Communicating Science: Communicating effectively using science language and reasoning.

Knowing in Science: Understanding the nature of science.

Content Connections: Language Arts

Background Information

Frogs are amphibians. After hatching, they go through metamorphosis. They start as tadpoles that have gills and a tail and they swim like fish. As they develop, they begin to grow hind legs first. These legs are visible on the outside. Then the front legs begin to grow inside; you can see the bulge and watch them eventually 'pop' out. Over time, tadpoles start to absorb their tail and take on the appearance of an adult frog. Female frogs lay from 600 to 1,200 eggs in a jelly-type mass. If a tadpole survives, it takes approximately 12 to 16 weeks for it to fully develop into an adult frog.

If you order live tadpoles, you must use pond water or water that has been treated. Tadpoles' are very fragile and chlorine will kill them. Keep extra treated water on hand at all times. When cleaning water, you can use a baster to suck up some of the dirty water. Replace dirty water with treated water that has been sitting for at least a day and is the same temperature as the aquarium water. Change and replace water every two to three days. Some food can become toxic if left for three or more days. It is best not to change ALL of the water. Change 50 to 75 percent of the water.

Invitation to Learn

Give a riddle similar to this example: "What animal has a double life, can swim like a fish when it is young, and has front legs that grow inside its body and then come out?"

Instructional Procedures

1. Cover the journal entries in the book, *Tadpole Diary*. Go through the book and have a class discussion about what is happening each week of the life cycle that the book shows. This book has a Table of Contents and Index. Point out these features.
 2. As your class discussion progresses, ask students to narrow the information to one or two sentences per page to summarize what they think is happening.
 3. After completing the book, have students draw the tadpole stages and write a sentence or two about each stage.
 4. Students can record these sentences, pretending they actually have the frog (give it a name, make up things that could happen to it, etc.).
 5. Read the book again, this time reading the journal entries included. Have students compare what they said with what the authors said.
- * If you have the live tadpoles, read this book as the authors intended. Students should make journal entries about the real tadpoles once a week. They should record descriptions, pictures, and observations.

Possible Extensions/Adaptations

Tadpoles usually develop faster in warmer water. Have two aquariums and place them in different places in the classroom. Use a temperature gauge to check the temperature. Keep one aquarium in a warmer spot (do not heat the tadpoles, only place them in a warmer spot in the classroom). Students should predict what they think will happen. They should add that information to their journals. They should also record whether they are correct or wrong, how they know, and how their predictions are changing.

Assessment Suggestion

Are students making predictions of what comes next? Are their journal sentences and pictures matching what is actually happening? Are students spending time observing the tadpoles?

Additional Resources

www.allaboutfrogs.org
Carolina Biological Supply (800) 334-5551

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Materials

- Tadpole Diary* by David Drew (a Rigby Literacy Tree book7)
 - journaling booklet
- For live animal lesson, add the following materials:*
- tadpoles (acquired from Carolina Biological Supply or other source)
 - aquarium with lid
 - tadpole food (order from CBS or boil lettuce)
 - pond water or tap water with dechlorination drops.

Name _____

Tadpoles

What other animals...

Go through metamorphosis?

Are amphibians?

Live in the water?

Are born from eggs?

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Family Connections

Have students describe the tadpoles to a family member once a week. They can write the description at school and take it home. Have students ask family members what other animals...

Go through metamorphosis?

Are amphibians?

Live in the water?

Are born from eggs?

The class can make a chart to answer the homework question and include every student's answers.