

The Vanishing *Frog*



Title	Save My Species
Grade Level	6 th – 8th
Lesson Duration	2-3 class sessions
Curriculum Focus	Science, Social Studies, Language Arts, Visual Arts, Technology

STUDENT OBJECTIVES:

- Research an endangered or threatened amphibian species.
- Identify strategies for saving one amphibian species.
- Persuade others to take action to save the species.

MATERIALS:

Computer with access to the Internet

- Downloaded photographs of Endangered Amphibians (ex. Panamanian golden frog, Wyoming toad, Corroboree frog, Kihansi spray toad, etc.) <http://www.amphibians.org/amazing-amphibians> OR <http://www.iucnredlist.org/initiatives/amphibians>
- *Endangered Amphibian* cards
- *Amphibian Investigation* Student Activity Sheet
- Books, magazines, journals with information about amphibians
- Materials specific to chosen presentation, i.e., technical equipment for video presentation, access to computer for Power Point presentation, art materials for poster, etc.

PROCEDURES:

Note: Before the lesson, download copies of endangered amphibian photographs. Hang them in an area where students can see them.

1. Have students view the photographs of Endangered Amphibians and ask them to guess what the animals in the photographs have in common. Students may identify that all are frogs or amphibians. They may not realize, however, that all of the animals in the photographs are in danger of becoming extinct.
2. Ask students what it means when an animal becomes extinct. Why might this occur? What other extinct species can students name?
3. Give students time to explore the *Amphibian Ark* site (www.amphibianark.org) where they will learn about the current plight of the world's amphibians. Have students share their thoughts and feelings about the current situation.
4. Discuss:
 - a. How does the plight of the amphibians impact students?
 - b. Why should it matter to us that amphibians are becoming extinct?
 - c. Whose responsibility is it to help save the amphibians?
5. Have students generate a list of ideas that could help save amphibians around the world. Their list could include raising or donating money, writing letters, raising awareness, habitat & wetland restoration, bringing a species to a zoo or safe place, researching a cure for chytrid fungus, volunteering at a zoo, etc. Review each idea and have students identify those that they would personally do to help save the amphibians. Which strategies seem most realistic for students to implement?

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6. Divide students into teams of three or four. Tell teams that they will study one endangered amphibian species and design specific strategies to help save it.
7. Fold and place the *Endangered Amphibian* cards into a box or container. Have each team choose a card that will reveal which amphibian they will help save.
8. Once all teams have chosen their cards, explain that each team's first step is to learn as much as they can about the amphibian they've chosen. Distribute and review the *Amphibian Investigation* student activity sheet with the class.
9. Point out that the final stages of their research include a justification for saving their amphibian and specific strategies that can help save it.
10. Distribute research resources and give students computer access to complete their research. A list of helpful Web sites is below. Students likely will need one to two class sessions to complete the student activity sheet.
11. Once students have completed their research, have each team discuss the strategies and solutions that could help save their amphibian. Then challenge them to create a project, based on one of these solutions, to help save their amphibian. (Project ideas include a persuasive letter or presentation to Congress or potential corporate or individual donors; fundraising action plan; public service announcement, commercial; poster; brochure; newspaper editorial, research or Web site. Their project should include compelling reasons why their amphibian should be saved.
12. Have teams present their projects to the rest of the class.

EXTENSIONS:

- Organize a group of faculty, community leaders or parents to serve as a judging panel to determine which student presentation is most compelling. Have the class work together to implement an idea that can actually help save the winning team's amphibian.
- Many endangered amphibians are right in our backyard. Have students go to <http://cgge.hamline.edu/frogs/science/Threatened.pdf> where they will find a list by state of endangered amphibians. Encourage them to brainstorm ideas to help endangered amphibians in your local area. (PDF may not be kept up to date)
- Take a habitat walk to a local stream. Observe the plants and animal life in and around the stream as well as the environmental factors that affect both. Have students draw conclusions about their observations.

ASSESSMENT:

You can evaluate your students using the following three-point rubric:

3 points: Student teams collect sufficient and accurate data about their endangered amphibian; design appropriate strategies to help save their species; transform their data into a well-designed project to save

their species; share compelling and accurate reasons why their species should be saved.

2 points: Student teams collect some data about their endangered amphibian; draw somewhat appropriate conclusions about projects to save their species; create an adequate project to save their species; share some reasons why their species should be saved.

1 point: Student groups collect inadequate or incomplete data about their endangered amphibian; are unable to create strategies to help save their species; are unable to transform their data into a project to save their species; share some reasons why their amphibian should be saved.

VOCABULARY:



Amphibian

Definition: Any of the class of cold-blooded vertebrates such as frogs, toads and salamanders intermediate between fishes and reptiles; they have gilled aquatic larva and air-breathing adults.

Context: Frogs and toads are amphibians because they spend part of their lives in water and part of their lives in the land.

Ecosystem

Definition: A system formed by the interaction of a community of organisms with their environment

Context: Amphibians are a very important part of the ecosystem.

Endangered

Definition: Threatened with danger or extinction.

Context: The bald eagle is classified as an endangered species.

Extinct Definition: No longer in existence; died out. Context: When a species is extinct, that means there are no longer any animals of that kind on the Earth.

Threatened

Definition: Likely to become endangered or extinct if not protected.

Context: Many of the world's amphibians are currently threatened.

Habitat

Definition: The place or environment where a plant or animal naturally lives and grows.

Context: A frog's habitat is usually a swampy wetland area.

Plight

Definition: A dangerous situation

Context: Scientists are working around the clock to uncover clues on the frogs' deadly plight.

Population

Definition: The total of organisms inhabiting a particular locality.

Context: A decline in the world's frog population is a warning sign for the environment.

ACADEMIC STANDARDS:

This lesson plan may be used to address the academic standards listed below. The standards listed are drawn from the National Education Science Standards.

Grade Level: 5-8

Content Standard: Science as Inquiry: Abilities to do Scientific Inquiry

Benchmarks: Think critically and logically to make the relationships between evidence and explanations.

Grade Level: K-4

Content Standard: Life Science: The characteristics of organisms

Benchmark: Organisms have basic needs; the behavior of individual organisms is influenced by internal cues and external cues.

Grade Level: K-4

Content Standard: Life Science: The life cycles of organisms

Benchmarks: Plants and animals have life cycles that include being born, developing into adults, reproducing and eventually dying. Many characteristics of an organism are inherited from the parents of the organism, but other characteristics result from an individual's interaction with the environment.

Grade Level: 5-8

Content Standard: Life Science: Structure and Function in Living Systems

Benchmarks: Disease is a breakdown in structures or functions of an organism.

Grade Level: 5-8

Content Standard: Life Science: Diversity and Adaptation of Organisms

Benchmarks: Extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to allow its survival.



ENDANGERED AMPHIBIAN CARDS

MISSISSIPPI GOPHER FROG	BARTON SPRINGS SALAMANDER	TITICACA WATER FROG
HOUSTON TOAD	PANAMANIAN GOLDEN FROG	MOUNTAIN YELLOW- LEGGED FROG
PUERTO RICAN- CRESTED TOAD	CORROBOREE FROG	WYOMING TOAD
SPINY GIANT FROG	ETHIOPIAN SHORT HEADED FROG	KIHANSI SPRAY TOAD
GOLDEN MANTELLA FROG	WHITE- BELLIED FROG	THE BLEEDING TOAD

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Amphibian Investigation Student Activity Sheet

Common Name of Amphibian:

Scientific Name:

IUCN (International Union for the Conservation of Nature) Status:

Description (color, weight, etc.)

Distinguishing Features:

Location:

Habitat:

Diet:

Major Threats:

Reason(s) why this amphibian should be saved:

Specific solutions/strategies that could help save this amphibian: