

The Jeff Corwin Experience

The Amazon: Aquatic Ecosystem

Teacher's Guide

Grade Level: K–8

Curriculum Focus: Life Science

Lesson Duration: Two class periods

Program Description

Follow Jeff Corwin to the Amazon, the most impressive river system in the world. In Brazil, he encounters exotic and beautiful creatures that help determine the health of the Amazon Basin ecosystem.

Video Index

Segment 1: Animals of the Amazon: Part I (16 min.)

Description

Enter the Amazon Basin and meet some of its unique animals. Observe the pirarucu and check out the uakari, a monkey with a red face.

Pre-viewing question

What do you know about the Amazon River?

Answer: Answers will vary, but some students may know that it is located in Brazil and it is the second longest river in the world with many tributaries.

Post-viewing question

What is unique about the pirarucu?

Answer: This fish breathes using its gills, but it also can take in air through its mouth and store it in its swim bladder.

Segment 2: Animals of the Amazon: Part II (19 min.)

Description

Join Jeff as he continues to discover amazing creatures – the giant matamata that blends into its surroundings, sloths clinging to a tree, electric fish, and a gigantic cockroach.

Pre-viewing question

Why do you think Jeff mistakes the matamata for a pile of leaves?

Answer: Answers will vary, but some students may determine that the turtle is good at blending into its environment.

Post-viewing question

Why is the electric knife fish considered an indicator species?

Answer: Electric waves can reveal much about the animal's environment. If the waves are stable, then the environment is doing well. Fluctuating waves could indicate pollution problems.

Segment 3: Animals of the Amazon: Part III (7 min.)

Description

Meet two more fascinating animals – the jaguar and the Amazonian manatee. Learn why people and jaguars clashed; then meet a baby Amazonian manatee.

Pre-viewing question

Why do you think ranchers and jaguars clashed?

Answer: Answers will vary, but some students may figure out that the jaguars preyed on cattle.

Post-viewing question

Why are biologists breeding manatees?

Answer: The animals are highly endangered; only about 500 Amazonian manatees exist in the world.

Lesson Plan

Student Objectives

- Learn about scientific studies taking place in the Amazon rain forest.
- Develop a record sheet explaining the purpose of these studies.
- Discuss the environmental issues of the Amazon rain forest.

Materials

- *The Jeff Corwin Experience: The Amazon: Aquatic Ecosystem* video and VCR, DVD and DVD player
- Computer(s) with Internet access
- Newsprint and markers
- Paper and pencils

Procedures

1. Begin the lesson by showing students *The Jeff Corwin Experience: The Amazon: Aquatic Ecosystem*. Ask students to focus on the scientific studies in the Amazon ecosystem.
2. After viewing, ask students what they remember about the studies in the video. Write their ideas on a sheet of newsprint. Students should identify studies about the following:



- three-toed sloths
 - electric fish
 - jaguar conservation
 - manatee conservation
3. Tell students that it's important to understand why these studies are underway. To help clarify, have students work in pairs to develop a record sheet about a study or conservation activity, including its purpose. The record sheet should include the following information:
- Name of animal studied
 - Goal of the study or conservation activity
 - Success of work (if available)

4. Give students time in class to work on their record sheets. The following Web sites have related information:

General Information

- <http://www.vanaqua.org/education/aquafacts/amazon.html>
- <http://www.blueplanetbiomes.org/amazon.htm>
- <http://www.free-living.com/CountryProfiles/brazilprofile.htm>
- http://www.worldwildlife.org/wildworld/profiles/terrestrial/nt/nt0132_full.html

Electric Fish

- <http://www.bio.umass.edu/biology/cox-fernandes/CCF.htm>

Sloths

- <http://www.earlham.edu/~debutka/supersloth.htm>

Jaguars

- <http://www.edu.pe.ca/southernkings/jaguar.htm>
- <http://www.pbs.org/edens/manu/mammals.htm>

Manatees

- <http://staff.esuhd.org/~balochie/studentprojects/amazon/animals.html>

5. During the next class period, review the students' record sheets. Point out that most of the environmental problems in the Amazon rain forest are due largely to development by humans, which results in habitat loss for the animals. Another issue is hunting; the manatees are food for some Indian groups.

6. Conclude the lesson by asking students for ideas to protect the animals of the Amazon rain forest. Discuss writing a class letter to an environmental group working on this problem; the World Wildlife Fund, based in Washington, D.C., may be a good place to start.

Assessment

Use the following three-point rubric to evaluate students' work during this lesson.

- **3 points:** Students were highly engaged in class and small group discussions; produced accurate and complete record sheets.
- **2 points:** Students participated in class and small group discussions; produced satisfactory record sheets.
- **1 point:** Students participated minimally in class discussions; did not complete the record sheets.

Vocabulary

Amazon rain forest

Definition: A large, tropical area in the northern part of the Amazon Basin with many rivers and a large variety of plant and animal species

Context: Much of the Amazon rain forest has been left untouched, but human activities have resulted in habitat loss for many animals.

Amazon River

Definition: The world's second largest river and South America's main river, measuring 6,437 kilometers (4,000 miles)

Context: The Amazon River is home to many species of fish, including the piranha and the pirarucu.

electric fish

Definition: A fish that gives off an electric signal that can be used to measure the health of the river

Context: Jeff Corwin discovered that the more stable the signal of the electric fish, the less pollution the river contains.

habitat loss

Definition: The shrinking of an area where plants and animals live, usually due to human activity

Context: Habitat loss puts many plant and animal species at risk because it becomes harder for plants to grow and for animals to find food.

manatee

Definition: A large water mammal; also referred to as a sea cow

Context: Manatees have been overhunted, so only about 500 manatees remain in the Amazon Basin.



three-toed sloth

Definition: A mammal that spends its entire life hanging upside down in a tree

Context: The female three-toed sloth gives birth while holding onto a tree.

Academic Standards

National Academy of Sciences

The National Academy of Sciences provides guidelines for teaching science in grades K-12 to promote scientific literacy. To view the standards, visit this Web site:

<http://books.nap.edu/html/nses/html/overview.html#content>.

Grades K-4

- Life Science: Organisms and environments

Grades 5-8

- Life Science: Populations and ecosystems, Diversity and adaptations of organisms

Mid-continent Research for Education and Learning (McREL)

McREL's Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education addresses 14 content areas. To view the standards and benchmarks, visit

<http://www.mcrel.org/compendium/browse.asp>.

- Language Arts – Viewing: Uses viewing skills and strategies to understand and interpret visual media; Writing: Gathers and uses information for research purposes

Support Materials

Develop custom worksheets, educational puzzles, online quizzes, and more with the free teaching tools offered on the Discoveryschool.com Web site. Create and print support materials, or save them to a Custom Classroom account for future use. To learn more, visit

- <http://school.discovery.com/teachingtools/teachingtools.html>

