

## Big Arky, A Real Arkansas Monster

**Abstract:** This lighthearted lesson plan acquaints students with some of the state's lesser known fauna through a discovery of the relationship between geography, climate, technology, environment, and animal life.

**Grade:** 7-8

**Objective:** Students will understand the relationship between geography, climate, environment, and animal life and the "cause and effect" connection of technology on these elements.

**Arkansas History Curriculum Correlation:** 1.1.12, 3.1.13, 4.1.11, 4.1.13, 5.1.14, and 5.1.15

**Introduction:** Students will examine the world of the Arkansas alligator as well as various topics related to wetland environments. Students will then summarize and compare findings that will be tied together by a guest speaker or teacher-led discussion.

**Key Terms:** reptile; habitat; swamp; marsh; oxbow lake; wetlands; ecosystem; Endangered Species Act of 1973

**Key Facts:** The American alligator, *Alligator mississippiensis*, is the largest reptile in the United States. It belongs to the crocodile family, whose members have changed very little in 200,000 years. It's one of the few surviving members of the group to which dinosaurs also belonged. The alligator is a large reptile with a broad rounded snout. Adults are mostly black, but young alligators also have bold yellowish markings. Most adults are six to thirteen feet long. It is found throughout the southeastern United States with large populations in Florida, Louisiana, and southern Georgia. Its favorite habitat is large shallow lakes, marshes, ponds, swamps, rivers, creeks, and canals. It eats fish, crabs, birds, turtles, snakes, and mammals.

Wetland environments have been receiving greater attention in recent years, and there have been increasing demands for their protection. There are many obvious indications of lost wetland functions -- increased flooding of lowlands, species that die out, muddy rivers -- while there are other more subtle effects. The atmospheric balance of oxygen, carbon, nitrogen, and sulfur as well as the recharging of ground water are critical issues related to wetland destruction.

**Background:** Students don't often appreciate the delicate relationships that exist between the forces of nature and the activities of humans. While the alligator holds a certain dangerous intrigue for most people, it is this attraction that interests students in exploring its world and to understand the "cause and effect" relationship that humans and their technology exert on nature.

**Activity:**

1. Students will brainstorm all the "things" that they need to live and to be comfortable. Make a list on the board. Analyzing the students' list, ask them to identify the items over which they have no control, i.e., the things that their parents or guardians either provide or pay for.
2. From this initial discussion, introduce the concept of habitat and environment. Introduce the concept that most animals, like the students, have little control over most elements in their habitat and environment.
3. Tell the story of "Big Arky," a quite famous alligator captured near Hope, Arkansas in 1952.
4. Divide the students into four or five groups. Assign each group a research topic. Several suggested topics are alligators (especially their part of the ecosystem -- "gator holes"), wetlands vegetation, locations of wetlands areas in Arkansas and perhaps the Southeast, other wetlands fauna, laws related to wetlands, the part played by the Arkansas Game and Fish Commission in wetlands preservation, problems with human encroachment in wetlands areas, and attempts to restore wetlands areas.
5. Each group will prepare a poster that lists the facts they have gathered concerning their topic. Display the posters in the classroom.
6. Each group will select one spokesperson who will explain the highlights of his or her group's research findings.
7. If possible invite a guest speaker to provide additional information about wetlands and/or alligators. A biology teacher from the high school or someone from the Game and Fish Commission are suggestions for sources. If these are unavailable then a lecture/discussion on additional material may be necessary to integrate the facts gathered by student research.
8. Have a mock public hearing to discuss a proposed industrial plant's construction in a wetlands area.
  - a. Review the procedures for a public hearing.
  - b. Assign student various roles to play.
    - 1) Hearings officer
    - 2) Resource and regulatory agency representatives (5 to 6 students)
    - 3) Citizens and other interested parties (9 to 10 students with a variety of concerns)
  - c. Students will use their lecture notes and research findings to develop a "script" or scenario to follow using teacher guidelines for a public hearing process.

- d. Those students who do not have active presentation roles will represent the hearing audience and take a lead in the final decision making process as a "hearing committee."
- e. Encourage the presenting students to develop project site maps, impact charts, and other visuals for their presentations.
- f. The "hearing committee" should be encouraged to find compromise solutions if possible.

Note: Obviously this activity can become quite involved as time permits.

**Extension:**

1. Plan a field trip to a wetlands area.
2. Develop cross-curricular activities with a science teacher to further explore wetlands problems and solutions.
3. Place your class on a public notice mailing list by writing your local U.S. Army Corps of Engineers district office.
4. Plan a field trip to a public hearing.

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