



The Return of Gray Wolves to Yellowstone National Park: Right or Wrong?

National Science Content Standards:

Science as Inquiry

- Abilities necessary to do scientific inquiry
- Understandings about scientific inquiry

Life Science

- Populations and ecosystems
- Diversity and adaptations of organisms

Vocabulary:

Predator
Prey
Ecosystem
Competitors
Natural forces
Human forces
Environmental interests
Commercial interests

Materials:

- Computers for internet research
- One worksheet per student
- Students will need a notebook and pencil for note taking

Introduction: Students will use the internet to explore relationships between habitats and species (specifically, the gray wolf and other species at Yellowstone National Park). Additionally, students will explore the effect of physical and human actions on living things and their environment. This lesson is a modification of a lesson from Science NetLinks. This activity would work best if completed before playing *WolfQuest*.

Objectives:

After this activity, the student will:

1. Explain the relationships between species that live in Yellowstone National Park.
2. Identify conflicts that arise between humans and wolves living in the same environment.
3. Use inquiry skills to draw their own conclusions regarding the controversy of the reintroduction of wolves into Yellowstone National Park.

Procedure:

Teacher Prep:

- ✓ Preview websites used in this lesson.
- ✓ Make copies of the student worksheet if you intend to use it.
- ✓ Read the article "Are Wolves Endangered" for background information.

Introduction:

1. Students begin by learning about the twelve species of animals on the Yellowstone's species page.
2. Divide the class into groups and assign each group one of the animals. Students should make a poster listing the needs of the animal (food, space, water, air, shelter).
3. Have each group share their poster. Use the posters to compare the animals' needs. What do they have in common? How might they compete with each other for the necessary resources?

Links:

Yellowstone Wolves
lesson from Science
NetLinks:

<http://www.sciencenetlinks.com/lessons.cfm?BenchmarkID=5&DocID=78>

Yellowstone's species:
<http://www.yellowstone.net/wildlife/>

All About Wolves:
<http://www.nationalgeographic.com/resources/ngo/education/geoguide/wolves/>

Conflict Yellowstone
Wolves:

1.
<http://www.powayschools.com/projects/mt&r/Krause.htm>

2.
<http://www.pbs.org/wgbh/nova/wolves/bangs.html>

3.
<http://www.timeforkids.com/TFK/teachers/wr/article/0,27972,93424,00.html>

4.
<http://www.actionbioscience.org/biodiversity/johnson.html>

5.
http://www.wolf.org/wolves/learn/wow/regions/United_States_Subpages/AttitudesandIssues1.asp

Procedure (continued):

Learning about wolves:

1. Students will use the "All About Wolves" by National Geographic for this investigation.
2. Read the introduction on the website: "A wolf's community—its pack, its prey, and its competitors—is dynamic and delicate. The survival of these controversial predators hinges on both natural and human forces."
3. Ask the students to keep these words in mind as they read about wolves. They should take notes when they find evidence of natural forces and human forces affecting a wolf's survival.
4. After students have conducted their investigation on wolves use the following discussion questions:
 - a. Describe the relationship between coyotes, elk, and cattle to wolves.
 - b. For the animals listed above, compare how each relies on human protection.

Conflicts and Solutions:

1. Using their notes from the previous investigation, ask students to make a T-chart listing possible conflicts if humans and wolves were to share the same environment. Have students list possible solutions as well.

Possible Conflicts

Possible Solutions

Possible Conflicts	Possible Solutions

2. After each student has completed their T-chart, divide the class into groups. Each group should then explore the websites listed under Conflict Yellowstone Wolves. The question students are trying to answer is this: Should the wolves in Yellowstone National Park be removed?

Assessment Options:

Following the Conflicts and Solutions activity ask students to take a stand on the issue.

- A. Students write a one page essay, make a poster or make a PowerPoint presentation stating their position (Environmental interests vs. commercial interests). Their position must be supported using facts from their research. Students will be evaluated on how well they support their position – NOT on which position they choose.
- B. Students could be placed in groups based on their chosen position. Each group could then prepare for a debate to take place in class.

YELLOWSTONE WOLVES

Name _____

ANIMAL	FOOD	SPACE	WATER	AIR	SHELTER
GRIZZLY BEAR					
BLACK BEAR					
ELK					
MOOSE					
BISON					
WOLF					
COYOTE					
PRONGHORN					
DEER					
EAGLE					
TRUMPETER SWAN					
BIGHORN SHEEP					