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Elephant Conservation

Lesson Objective & Summary

Objective: Students will examine some of the current threats to elephant populations worldwide and explore some of the present efforts being made towards elephant conservation and protection. Students will evaluate the effectiveness of these efforts and create a mock symposium to discuss and brainstorm other effective means for elephant conservation.

Summary: Students will consider some of the present elephant conservation efforts worldwide, and briefly discuss their effectiveness. Students will watch the episode "Protecting the Africa Elephant" and read the corresponding blog. Students will then work in groups to examine one particular aspect of elephant conservation and examine its effectiveness in protecting elephants. Student groups will present their findings in a whole-class symposium and discuss/evaluate present approaches to elephant conservation, while also possibly discussing alternative means for conservation. Finally, individual students will write a reflection about what they learned about elephant conservation.

Grade Level: Middle School

Duration: 2 - 4 Lessons

Subjects: Science

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Standards & Benchmarks

From the Common Core Speaking & Listening Standards for Literacy in Science and Technical Subjects, Grades 6-8

- Engage effectively in a range of collaborative discussions with diverse partners, building on one another's ideas and expressing their own clearly *(Comprehension and Collaboration)*
- Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation (Presentation of Knowledge and Ideas)

From the National Science Education Standards, Grades 5-8:

- The number of organisms an ecosystem can support depends on the resources available and abiotic factors, such as quantity of light and water, range of temperatures, and soil composition. Given adequate biotic and abiotic resources and no disease or predators, populations (including humans) increase at rapid rates. Lack of resources and other factors, such as predation and climate, limit the growth of populations in specific niches in the ecosystem. *(Populations and Ecosystems)*
- A population consists of all individuals of a species that occur together at a given place and time. All populations living together and the physical factors with which they interact compose an ecosystem. *(Populations and Ecosystems)*
- Extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to allow its survival. *(Diversity and Adaptions of Organisms)*

Background Information for Educators

For centuries, elephants have fascinated people around the world. These giant land mammals can weigh up to 8 tons (16,000 pounds, or 7,257 kilograms), and are considered to be among the most intelligent creatures in the world.

There are three distinct species of elephants: the African Elephant, the largest land mammals in the world; the Asian Elephant, which is noticeably smaller than its African counterpart; and the African Forest Elephant, which was only recently discovered in the forests of Central Africa. Both male and female African elephants have ivory tusks, whereas only male Asian elephants have small ivory tusks. Similar to right- and left-handed human beings, elephants are either right- or left-tusked, which is usually determined by which tusk visibly shows the most wear and tear.

Elephants have a unique social structure in which matriarchs (female elephants) lead a group of other females and their baby elephants. Male elephants tend to live in isolation. The gestation period of an elephant is 22-24 months, which is the longest for any mammal on the planet. However, once an elephant is born, it can be 5-10 years before that elephant is weaned from its mother. Therefore, as elephant females are poached for ivory, the survival of infant elephants is also greatly threatened.

Elephants also play a unique (and very necessary) role in the survival of other plant and animal species' in their natural habitat. Many indigenous savannah and forest plants are only able to germinate once seeds are digested and passed through an elephant's digestive tract. Elephants also play a crucial role in clearing dense forest areas to enable the survival of other grazing and browsing animals that share the same ecosystem.
Despite their paramount role in maintaining the equilibrium of their natural habitat, less than half a million elephants are estimated to live in the wild today, and that number is rapidly dwindling due to illegal poaching for ivory and environmental destruction of elephants' natural habitats. Conservationalists agree that if drastic measures are not taken to protect and preserve the elephant species, they will be extinct in less than 50 years.

Guiding Questions	Key Vocabulary
What are the current threats to elephant species' survival? What is presently being done to protect elephants? How can you be a proponent of elephant (and other endangered animal) conservation?	Conservation Poaching Predator Habitat Ecosystem Species Subspecies Endangered Extinction

Present conservation efforts include government crackdowns on illegal poaching, habitat preservation, elephant nurseries for orphaned elephants (such as Lilayi Elephant Nursery in Zambia), and research on elephant-human interactions. As scientists gain a greater understanding of elephant behavior, they hope to be able to educate local human populations who can directly influence the protection and preservation of the elephant species.

This WorldWildlife.org Video graphically shows the present elephant crisis in Africa: http://www.youtube.com/watch?v=lBzCk21bEyk

Lesson Plan

1. Ask students to explain what "conservation" means. Ask students to then consider what they know about conservation efforts around the world, specifically with regards to endangered animals.

2. Ask students to specifically consider the present plight of elephants in the wild. What are some of the major dangers affecting elephants today? Then ask students to consider what efforts they are familiar with that are presently trying to protect elephants.

3. Have students watch the Zambian Elephant Conservation video and read the corresponding blog. Have students take notes on what present efforts are being made in Zambia to preserve and protect elephants.

4. Have students consider and evaluate the present effectiveness of elephant conservation. What are some of the hindrances that elephant conservation groups are facing? Why might elephant conservation efforts not be as effective? If necessary, have students look at the following websites to gain a better understanding of present efforts that are being made to protect elephants in the wild:
   a. World Wildlife Foundation: worldwildlife.org/species/elephant
   b. International Elephant Foundation: www.elephantconservation.org/programs/africa-programs/

5. Divide students into groups (the number of groups will depend on what topics students decide to pursue). Have each group choose one aspect of elephant conservation (i.e.: anti-poaching laws and implementation, orphaned elephant nurseries, elephant habitat protection, elephant-human interaction research, etc.) to focus on. Each group should research the effectiveness of their particular aspect of elephant conservation, examining both the pros and cons of that particular aspect of conservation. As a challenge, have student groups consider possible alternative approaches to elephant conservation, and have them explain why these methods may (or may not) be effective.

6. Have student groups prepare a short 3-5 minute explanation of their chosen aspect of elephant conservation, focusing specifically on what that aspect of conservation is, how it is being implemented, what some of the hindrances to that aspect of conservation is, and what possible alternative efforts might be made. Students may choose to use posters, visuals, or media to share their explanation with other groups.

7. Through a whole-class symposium, have student groups present their area of focus. Then, have the class work together to examine, consider, and discuss present and potential alternative means of elephant conservation. Teachers may choose to facilitate or select students to facilitate the discussion. The symposium format should

enable student groups to share their ideas and research, while also giving students a platform to discuss alternative conservation possibilities.

8. Following the symposium, have individual students write a reflection about what they have learned about elephant conservation. Have students share their thoughts, observations, frustrations, and lingering questions.

Assessment Rubric	Below Expectations	Meets Expectations	Exceeds Expectations
Group Research and Symposium Participation	Student research reflects a general understanding of their particular aspect of elephant conservation, but specific details may be missing. Student research may not include specific evidence that reflects the effectiveness (or ineffectiveness) of their chosen aspect of conservation. Student participation in the symposium may be limited and/or discussions may lack supporting evidence or facts.	Student research indicates a clear understanding of their particular aspect of elephant conservation. Research shows clear evidence that demonstrates the effectiveness of their chosen aspect of conservation. Student participation in the symposium reflects the ability to evaluate and problem solve by using supporting evidence and facts.	Student research indicates a higher-level understanding of their particular aspect of elephant conservation. Research shows specific evidence that demonstrates the effectiveness (and possible ineffectiveness) of their chosen aspect of conservation. Student participation in the symposium reflects the ability to evaluate and problem solve by using supporting evidence and facts, but student may also propose other alternative methods for elephant conservation, giving evidence that supports and/or even refutes those methods as effective.
Student Individual Reflection	Student's reflection generally discusses some of the key aspects of elephant conservation. However, explanations of why some of these efforts are or are not effective may be vague and lacking supporting details.	Student's reflection includes clear evidence of learning about some of the key aspects of elephant conservation. Student reflection also includes evidence of understanding why some of these efforts may not be as effective.	Student's reflection includes specific evidence of the key aspects of elephant conservation, explains the effectiveness/ineffectiveness of some of these efforts, and also suggests alternative approaches to elephant conservation.

Assessment

Evidence of Understanding

- Students can identify some of the major aspects of elephant conservation in action today.
- Students are able to evaluate the effectiveness of these aspects of elephant conservation using specific evidence.
- Students are able to examine, collaborate, and discuss different perspectives and approaches to elephant conservation, using appropriate research and evidence to support their claims.

Challenge Questions

- What other animals and living organisms are being indirectly affected by elephant endangerment?
- How can you raise awareness of the severity of the “elephant problem” worldwide