

Preserving Critical Species: Inquiry to Action

Using the C3 Framework to guide action on species conservation

Overview

This activity guides students through a process that uses the *College, Career, and Civic Life (C3) Framework* inquiry arc. Students identify and research compelling and supporting questions, leading them to develop explanations and arguments and, ultimately, to take action on issues related to preservation of species.

For the complete activity with media resources, visit:

<http://education.nationalgeographic.org/activity/mission-animal-rescue-inquiry-action/>

Directions

1. For the purpose of this activity, you will be guided through implementing the College, Career, and Civic Life (C3) Framework. “The C3 Framework is centered on an inquiry arc—a set of interlocking and mutually supportive ideas that frame the ways students learn social studies content.^[1]” The framework is organized around four dimensions—or process steps—students follow to conduct their inquiry. These steps are abbreviated in this activity, but the full framework can be found at <http://www.socialstudies.org/c3>.

- Developing questions and planning inquiries
- Applying disciplinary tools and concepts
- Evaluating sources and using evidence
- Communicating conclusions and taking informed action

2. To begin, activate students' prior knowledge by engaging them in a discussion about endangered species. Ask:

- *What does it mean that a species or animal is endangered?*
- *What are some animals you think are threatened or endangered?* (You may wish to talk about the difference between a species being endangered and a species being threatened. An endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.)
- *What factors cause an animal to become endangered?* (Student responses should include factors such as overhunting or overfishing, loss of habitat due to natural or manmade causes, poaching, etc.)

- *How are issues around endangered animals related to the history of the areas the animals live in? To the cultures of the people who live in those areas?* (Talk about the interconnections that are involved in any enduring issue.)
- *What conflicts do you know about between animals and humans where you live?* (Examples might include increased numbers of deer or other wild animals entering the community, poachers killing animals out of season, or arguments among people about how animals should or should not be protected.)

3. Provide students with the list of National Geographic online resources listed below—or combine resources on this list with other resources you have available, either online or in books or other sources. Ask students to work individually or in pairs to read some or all of the resources and, as they read, to take notes on key points they find in the information and any questions that come to mind.

- Endangered Species Encyclopedic Entry (<http://education.nationalgeographic.com/encyclopedia/endangered-species/>)
- 12 Extraordinary Pictures Show Animals Headed for Extinction (<http://news.nationalgeographic.com/2015/05/150517-endangered-species-pictures-wildlife-animals-science/#/>)
- Endangered Animals Quiz (<http://animals.nationalgeographic.com/animals/endangered-animals-quiz/>)
- Search on nationalgeographic.com or natgeoed.org. (Use term “endangered species” or search on a specific species)
- Turtles and Tortoises Collection (<http://education.nationalgeographic.com/topics/turtles/>)
- Wolves Special Collection (<http://education.nationalgeographic.com/media/hidden-life-of-wolves/>)
- Lions Collection (<http://education.nationalgeographic.com/topics/lions/>)

4. When students have had enough time to read through some of all of the sources, bring them back together and discuss their findings. Ask students to state questions they had as they went through the material. Write the questions on the board or flipchart paper. Have the class identify common types of questions—common issues that came up. Don’t discuss possible answers to questions at this time.

5. Ask students to reflect back on their own notes and on the list of questions the class identified. Then ask each student to identify a key question or concern they have related to endangered species. These questions should be questions that cover important concepts rather than trivial facts. They should lead to thinking about causes, rationale, problems, or multiple perspectives on the issue at hand. An example of a key or enduring issue might be understanding why it is so difficult to stop poaching of elephants in Africa or the ongoing conflict between ranchers and wolves in the American West. You might wish to have students focus on local or regional issues related to animal conservation and/or animal/human interactions, rather than on endangered or threatened species in other parts of the world. Have students write their enduring issue or concern on sticky notes and

then put their notes on a poster or flip chart. When all students have written and posted an issue or concern, read them aloud to the class.

6. Introduce the concept of compelling questions to the class. Tell students that compelling questions are questions that focus on enduring issues. They deal with curiosities about how things work, interpretations of concepts, and unresolved issues that require students to construct arguments in response. A compelling question that students might generate is, “Why do we need rules?”—a question that reflects a social concern students have and an enduring issue in social studies. Have students go back to the enduring issues they developed and consider how these might be turned into compelling questions. Ask students to frame one compelling question that interests them about endangered species.

7. Then guide students in the remainder of the process as briefly outlined below:

- From the compelling question, write two to three supporting questions—smaller questions that contribute to understanding the compelling question. Supporting questions focus on descriptions, definitions, and processes, and they require students to construct an explanation. A supporting question for the compelling question above might be, “What are some school rules?”
- With a compelling question and some supporting questions in mind, students should think about resources that will help them find answers, “taking into consideration the multiple points of view represented in an argument, the structure of an explanation, the types of sources available, and the potential use of the sources^[2].”
- Have students go back to the resources you introduced earlier to look for information that will help them understand the concepts related to endangered species as they pertain to their compelling and supporting questions. Provide any other resources available in the classroom, including textbooks, online resources, as well as the school library. If any students have similar compelling questions, allow them time to meet to discuss what information will be important to gather and also what arguments they might make related to their enduring issue.
- Guide students in the process of evaluating sources and developing claims, using evidence to support the claims.
- Ask students to formalize their arguments or explanations related to their enduring issue—compelling question—by communicating their results in the form of an oral presentation using posters or PowerPoint or another form of multimedia presentation. Because the issues surrounding endangered species are so closely tied to geography, have students include maps in their presentations—making sure to make significant ties between the explanation or argument and the related map resources and tools.

8. The final step in the C3 Framework process involves not only communicating results but also taking informed action. Ask students to brainstorm actions that might result from their research. For

example, students might suggest writing letters to their state or national congressional representatives, or letters to the editor. They might also look into species preservation issues in their communities.

[1] (National Council for the Social Studies (NCSS), *The College, Career, and Civic Life (C3) Framework for Social Studies State Standards: Guidance for Enhancing the Rigor of K-12. Civics, Economics, Geography, and History* (Silver Spring, MD: NCSS, 2013).

Informal Assessment

Utilize a rubric, provided to students in advance of the activity, for assessing students' inquiry process and/or their final presentation. Also, have students write a short self-assessment describing their reactions to the inquiry process and what they discovered in the process.

Objectives

Subjects & Disciplines

Geography

- General

Science

- Ecology
- Environmental

Social Studies

- Current events/issues

Learning Objectives

Students will:

- Identify key issues related to the protection of endangered or threatened species.
- Construct compelling and supporting questions that frame and guide inquiry related to the protection of endangered or threatened species.
- Identify and evaluate sources that will help answer compelling and supporting questions, taking into consideration multiple points of view, the structure of an argument or explanation, the types of sources available and the potential uses of the sources.
- Conduct research that results in the formulation of an explanation or argument related to the key/enduring issues of the topic.
- Communicate an explanation or argument based on research using appropriate media (text, video, graphics, maps, etc.).
- Take informed action as a result of the implementation of the inquiry arc.

Teaching Approach

- Inquiry-based learning
- Learning-for-use

Teaching Methods

- Discussions
- Inquiry
- Research

Skills Summary

This activity targets the following skills:

- 21st Century Student Outcomes
 - Information, Media, and Technology Skills
 - Information Literacy
 - Learning and Innovation Skills
 - Communication and Collaboration
 - Critical Thinking and Problem Solving
- 21st Century Themes
 - Global Awareness
- Critical Thinking Skills
 - Analyzing
 - Applying
 - Creating
 - Evaluating
 - Understanding
- Geographic Skills
 - Analyzing Geographic Information
 - Answering Geographic Questions
 - Asking Geographic Questions
 - Organizing Geographic Information
- Science and Engineering Practices
 - Asking questions (for science) and defining problems (for engineering)
 - Constructing explanations (for science) and designing solutions (for engineering)
 - Obtaining, evaluating, and communicating information

National Standards, Principles, and Practices

National Council for Social Studies Curriculum Standards

- **Theme 3:**

People, Places, and Environments

- **Theme 8:**

Science, Technology, and Society

- **Theme 9:**

Global Connections

National Geography Standards

- **Standard 1:**

How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information

- **Standard 17:**

How to apply geography to interpret the past

- **Standard 18:**

How to apply geography to interpret the present and plan for the future

- **Standard 3:**

How to analyze the spatial organization of people, places, and environments on Earth's surface

National Science Education Standards

- **(5-8) Standard C-1:**

Structure and function in living systems

- **(5-8) Standard F-2:**

Populations, resources, and environments

- **(9-12) Standard F-3:**

Natural resources

- **(9-12) Standard F-4:**

Environmental quality

- **(9-12) Standard F-5:**

Natural and human-induced hazards

Preparation

What You'll Need

Materials You Provide

- Sticky notes (6 per student)
- Sticky notes per pair of students

Required Technology

- Internet Access: Required
- Tech Setup: 1 computer per learner, 1 computer per pair, Interactive whiteboard

Physical Space

- Classroom
- Computer lab
- Media Center/Library

Background & Vocabulary

Background Information

Critical species around the globe—and in our own backyards—face challenges that threaten their continued existence. These challenges come from a variety of situations in their unique habitats,

including poaching and habitat loss. Many times animals and humans come into conflict, with animal conservation often losing the battle.

Students need to understand the interconnected issues that impact animal conservation. Understanding how geography, history, cultures, science, and civics (citizen action) impact the enduring issues around animal survival will help us identify problems and develop sustainable solutions.

The National Geographic Mission: Animal Rescue initiative aims to inspire kids to learn as much as possible about endangered animals and to take action to rescue them.

This understanding can be facilitated through an inquiry process that leads to action. The C3 Framework lays out a robust set of steps to guide students through the process. “The C3 Framework is centered on an inquiry arc—a set of interlocking and mutually supportive ideas that frame the ways students learn social studies content.[1]” The framework is organized around four dimensions—or process steps—students follow to conduct their inquiry. These steps are abbreviated in this activity, but the full framework can be found at <http://www.socialstudies.org/c3>.

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Prior Knowledge

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Recommended Prior Activities

- None

Vocabulary

Term	Part of Speech	Definition
endangered species	<i>noun</i>	organism threatened with extinction.
inquiry	<i>noun</i>	series of questions or an investigation into an event.
threatened species	<i>noun</i>	organism that may soon become endangered.

Term	Part of Speech	Definition
vulnerable species	<i>noun</i>	level of conservation between "near threatened" and "endangered." Vulnerable is the lowest of the "threatened" categories.



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