

Expedition Ethics

What risks and ethical issues should members of an expedition consider?

Overview

Students discuss the meaning of ethics and evaluate the ethical considerations with the Blue Holes expedition. They apply their learning to planning for the micro-expedition.

For the complete activity with media resources, visit:

<http://education.nationalgeographic.org/activity/expedition-ethics/>

Directions

1. Define ethics.

Help students understand the importance of ethics. Put the caver's motto on the board: "Take nothing but pictures. Leave nothing but footprints. Kill nothing but time." Ask: *Why would explorers such as cavers have this motto?* (The motto is a reminder to protect unique and fragile environments such as caves from damage.) Brainstorm as a class about:

1. what could be taken from a cave (examples may include pieces of rock, stalagmites, stalactites, bones, animals, plants),
2. what could be left behind (damaged walls or other formations, garbage, lost equipment), and
3. what could be killed (plants and animals in and around the cave).

Talk about how the caver's motto is an example of environmental ethics, or guidelines for having respect for places and also the people who care about those places. Ask: *What other places need, or benefit from, environmental ethics approaches such as the caver's motto?* (state/national/local parks and forests, beaches, waterways, other public places)

Talk about times when "Take nothing but pictures. Leave nothing but footprints. Kill nothing but time." might be difficult. Students may say that there can be accidental damage in a place, or that doing scientific research in a place may require taking samples of species, bones, rock, water, and more. Even having a campfire can impact the fire site and destroy the firewood. So sometimes there is a "fine line" researchers and others have to walk in making ethical decisions. Where research takes place, scientists have to ask permission to do research and to take samples.

2. Discuss the ethics of Hiram Bingham and Machu Picchu.

Next, discuss how ethics play out in a real life example. Have students view the video **Who Owns Machu Picchu?** about Hiram Bingham’s re-discovery of the site in Peru. Ask students to write any ideas or questions about the material while they watch. Afterward, ask: *Which ethical issues came up in this expedition? How does this example relate to the caver’s motto?*

Discuss their ideas and explain that Hiram Bingham’s “discovery” of Machu Picchu was actually something that local people had known about for a while, and instead he brought awareness of Machu Picchu to the rest of the world. This awareness created a lot of interest in staking claims on Machu Picchu and researching its artifacts. And so, while the Peruvian people were the true keepers of Machu Picchu and its artifacts, ownership of the discovery ended up in contention because of the excitement surrounding Bingham’s re-discovery. Further, the increased attention to Machu Picchu brought unprecedented levels of tourism to the area, which has had continual impacts on the physical integrity of the Machu Picchu ruins and the trails around them. Ask students how their initial ideas from Step 1 and discussing the caver’s motto might have changed after considering this example.

3. Analyze ethical considerations.

Ask students to bring their thinking about ethics to the specifics of the Blue Holes Expedition. Brainstorm as a class or in small groups the concerns that the team members for the Blue Holes Expedition would have needed to think about ahead of time. Ask students to create a list of their ideas.

Examples may include:

- The need to be well trained for safe and low-impact cave diving.
- The need to take samples from the caves
- The need to make sure they could get to the blue holes in different areas—on both private and public property

Have students watch the **Regulations and Ethics** and **Caver's Motto** videos in which Dr. Kenny Broad discusses the regulatory and ethical considerations for the Blue Holes Expedition. Have them add any new ideas to their lists.

4. Discuss ethical considerations for the micro-expedition.

Using the initial conversation about ethics and their list of considerations for the Blue Holes Expedition as their guide, discuss as a whole class what ethical considerations their group micro-expeditions might have. Ask:

- *Will you be taking, leaving, or harming anything as you explore and collect data?*
- *How can you minimize the impacts on the place?*
- *What impacts might there be, on people and on the environment, and how can you address them?*
- *With whom should you discuss the micro-expedition, including getting permission for exploration, before you go?*

Students can contact park rangers, or others responsible for the site they will explore, to discuss ethics and safety needs.

5. Wrap-up

Ask students to use their ideas and ethical considerations to create a written ethics statement for their micro-expedition. This statement should be a 3-4 sentence long summary of how they will address foreseen and unforeseen ethical issues in their micro-expeditions. Have students work in their small groups to accomplish this, using their lists from the Blue Hole Expedition and the class discussion to help them.

Informal Assessment

Ensure that students' planning for their micro-expedition includes consideration of the impact on the natural environment as well as any impacts on people living nearby. Help to facilitate their reaching out to park leadership or others responsible for the place where they will conduct their micro-expedition. Assess their final ethics statements for cohesiveness and consideration of human and non-human factors.

Extending the Learning

Another set of ethics that suggests how people should treat the outdoors is Leave No Trace. Have students work in groups to determine whether these seven guidelines apply to their micro-expedition and how they should prepare to "leave no trace."

Objectives

Subjects & Disciplines

Science

- Biological and life sciences
- Earth science

Social Studies

- Human behavior
- Human relations

Learning Objectives

Students will:

- Define ethics as it relates to exploration and research
- Determine the ethical considerations when conducting an expedition
- Apply their insights about ethical considerations to their own micro-expedition

Teaching Approach

- Learning-for-use

Teaching Methods

- Brainstorming
- Discussions

Skills Summary

This activity targets the following skills:

- 21st Century Student Outcomes
 - Information, Media, and Technology Skills
 - Media Literacy
 - Learning and Innovation Skills
 - Communication and Collaboration
 - Critical Thinking and Problem Solving
- Science and Engineering Practices
 - Planning and carrying out investigations

National Standards, Principles, and Practices

IRA/NCTE Standards for the English Language Arts

- **Standard 12:**

Students use spoken, written, and visual language to accomplish their own purposes (e.g., for learning, enjoyment, persuasion, and the exchange of information).

- **Standard 8:**

Students use a variety of technological and informational resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.

National Council for Social Studies Curriculum Standards

- **Theme 3:**

People, Places, and Environments

National Geography Standards

- **Standard 4:**

The physical and human characteristics of places

National Science Education Standards

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

Science as a human endeavor

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

Nature of science

- **(5-8) Standard G-3:**

History of science

- **(9-12) Standard G-1:**

Science as a human endeavor

- **(9-12) Standard G-2:**

Nature of scientific knowledge

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

Historical perspectives

Preparation

What You'll Need

Materials You Provide

- Paper
- Pencils, pens

Required Technology

- Internet Access: Required
- Tech Setup: 1 computer per classroom, Monitor/screen, Projector, Speakers

Physical Space

- Classroom

Grouping

- Large-group instruction
- Small-group work

Resources Provided: undefined

- Regulations and Ethics
- Caver's Motto

Background & Vocabulary

Background Information

Hiram Bingham and the exploration of Machu Picchu illustrate expedition ethics and what explorers, researchers, and local stakeholders have learned through past experience. In 1911, Bingham, who was an American historian, started an expedition under the auspices of Yale University to explore Peru in search of a fabled lost capital city of the Incas. During the expedition, a local farmer, Melchor Arteaga, led him to Machu Picchu with the help of a Quechua family that was farming near the ruins. Bingham knew it was an important site, particularly because of the well-preserved stonework. So he

returned for additional expeditions, supported by both Yale and National Geographic, for the next few years to clear the ruins of foliage and document and map the site. National Geographic featured [Machu Picchu in its August 1913 issue](#), which sparked substantial global interest and subsequent decades of increased scholarship and tourism.

Prior Knowledge

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Recommended Prior Activities

- None

Vocabulary

Term	Part of Speech	Definition
ethics	<i>plural noun</i>	beliefs about what is right and wrong.
expedition	<i>noun</i>	journey with a specific purpose, such as exploration.
exploration	<i>noun</i>	study and investigation of unknown places, concepts, or issues.

For Further Exploration

Websites

- [Leave No Trace: Center for Outdoor Ethics](#)

Partner



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