

Plan and Prepare for an Expedition

What steps are needed to prepare for an expedition?

Overview

Students envision the planning and preparation needed for an expedition to a remote and dangerous site. Then they determine the actual preparation from a video about an expedition to the site. They plan their own “micro-expedition,” including a research question they want to answer, and think through steps needed during planning and preparation.

For the complete activity with media resources, visit:

<http://education.nationalgeographic.org/activity/planning-and-preparing-expedition/>

Directions

1. What is an expedition?

Using students’ ideas about exploration and expeditions from Activity 1, *Why We Explore*, engage in a class discussion to review the differences and similarities between the two. Update the ideas on the butcher paper from Step 5 in Activity #1 if needed and keep posted at the front of the class for students to reference as they begin to develop their “micro-expeditions” later in the activity.

2. Explore the Blue Holes expedition

Now that students have an understanding of what an expedition is, they can take their understanding further to explore what it actually takes to implement one. Have students imagine they are planning an expedition of a site that people know little about: the Bahamas Blue Holes. First, project photos from the **Deep Dark Secrets** photo gallery to give students a glimpse of this unique site. Discuss students’ observations about the characteristics of the place. Ask students to form small groups—the same as in the previous activity—and develop a research question from what they’ve seen.

3. Design a Blue Holes expedition

Next, still in small groups, have students envision the why (i.e., their research question), what, and how of such an expedition using the **Blue Holes Expedition Planning and Preparation** graphic organizer. Explain that for this exercise they are not expected to have the “right” answers, but instead to think through an open-minded analysis of what such an expedition might enable and

require. Also, while creativity is important, so is feasibility. Introduce the concept of feasibility and explain its importance in expedition planning as a necessary counterweight to creative problem solving. For example, using robotics to map an underwater cave might seem feasible, but it could be costly while also dangerous to the cave formations. Give groups 10-15 minutes to discuss and complete the graphic organizer. Students may want to use plain paper first to list ideas before coming to a consensus and putting those ideas on the graphic organizer

4. Compare ideas with the expedition as seen in the video.

Continuing to use the **Blue Holes Expedition Planning and Preparation** graphic organizer, tell students they are going to watch a video and use the information in the video to fill out the right side of the graphic organizer. Play the [Extreme Cave Diving](#) video. Keep the class in their small groups from previous steps and assign each group 2-3 questions from the graphic organizer to answer as they watch. Have them consider the thinking they did about such an expedition in Step 3 with what Dr. Broad and his team encountered.

After completing the graphic organizer have students discuss in their groups the differences between their expedition design and Dr. Broad and his team's actual expedition.

Next, have each group present their ideas from this comparison to the whole class so each group has information about all nine questions. Ask groups to discuss whether they agree or disagree with each other's comparisons.

5. Analyze team building challenges

Have students watch **Expedition Challenges**, a video of Dr. Kenny Broad's thoughts on what it's really like to work with a team on an expedition. Discuss the reality behind what happens on camera and some of the challenges that the Extreme Cave Diving video does not show.

6. Begin the planning for a "micro-expedition."

Explain that students will now have an opportunity to plan their own expedition—a "micro-expedition." Have students refer back to the ideas generated from Activity 1, "Why we Explore", and brainstorm in small groups research questions about a place where they could potentially conduct the micro-expedition nearby. Have them use the **Micro-Expedition Planning and Preparation** graphic organizer to organize their ideas and to consider all the aspects of their micro-expedition.

7. Create an interactive map for their micro-expeditions and discuss.

Once students have determined the site for their micro-expedition, give each group a few minutes at a shared computer to mark the site of their proposed micro-expedition using the **Mapmaker Interactive**. Once the map is complete, have each group present their micro-expedition idea to the class, including showing the location on the projected map and explaining the what, where, and how of their idea. Decide as a class whether students are drawn to a particular group's idea, or whether the groups should take time to further research and refine their proposed micro-expeditions.

Tip

Students can research citizen science opportunities that align with their exploration interests. Have them explore CitSci.org, iNaturalist.org, National Geographic Education Citizen Science Projects, or look for other opportunities in their local area.

Informal Assessment

Evaluate how thoroughly the groups are considering aspects of their proposed micro-expedition. Assess the clarity of their main aim statement and supporting objectives. Does the expedition seem feasible? Give feedback that helps students to further refine their ideas.

Extending the Learning

Inquire at a university or museum about a guest speaker who has been part of a research expedition. Ask him or her to speak with your students in person or via videoconference about the realities of conducting fieldwork. Students can also ask for micro-expedition planning and preparation advice.

Have students read [Famous Failures](#), which highlights the difficulties and triumphs of expeditions. Ask students to write down some ideas about how their views of expeditions might have changed after reading this article.

Objectives

Subjects & Disciplines

Geography

- [Physical Geography](#)

Science

- Earth science
- [Ecology](#)
- [Oceanography](#)
- [Paleontology](#)

Learning Objectives

Students will:

- List goals and considerations when planning and preparing for an expedition
- Discuss a variety of considerations when planning an expedition

- Compare ideas to an actual expedition's characteristics
- Apply learning about expedition planning to a micro-expedition

Teaching Approach

- Learning-for-use

Teaching Methods

- Brainstorming
- Discussions
- Information organization
- Multimedia instruction

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
- Geographic Skills
 - Asking Geographic Questions
- 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

Other Notes

This activity will require two 50-minute class periods, plus additional homework time for viewing the complete video where possible.

Resources Provided: undefined

- Expedition Challenges

Resources Provided: Handouts & Worksheets

- [Blue Holes Expedition Planning and Preparation](#)
- [Answer Key - Blue Holes Expedition Planning and Preparation](#)

- [Micro-Expedition Planning and Preparation](#)

Background & Vocabulary

Background Information

Expeditions, while great examples of human ingenuity and curiosity, are often time-consuming, costly, and full of uncertainty and risk. While not every obstacle can be foreseen, thorough planning is one way to help mitigate expedition risks.

Prior Knowledge

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Recommended Prior Activities

- None

Vocabulary

Term	Part of Speech	Definition
expedition	<i>noun</i>	journey with a specific purpose, such as exploration.

For Further Exploration

Websites

- [Bahamas Caves Research Foundation](#)
- [Cave Fauna of the World](#)
- [iNaturalist](#)
- [CitSci.org](#)

Partner



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