

Lesson 14 – Take a Trip to a Cave!

Lesson Overview: Students will participate in either a physical field trip or a virtual field trip to a cave.

Standards Addressed:

National Science Education Standards: 5th-8th grade

- Content Standard D: Earth and Space Science

International Society for Technology in Education
Standards for Students:

- Creativity and Innovation
- Communication and Collaboration
- Research and Information Fluency
- Technology Operations and Concepts



Duration of Lesson/Time Requirement: Variable

Procedure:

Throughout the previous lessons, students have come to learn about caves and the amazing underground treasures they are. There is no better way to conclude a unit on caves than to visit a cave.

A visit to a cave is undoubtedly more rewarding if a student has some appreciation of how caves form, how they are decorated with mineral deposits (speleothems), how organisms make their living in caves, and the important roles that caves have played in human history.

Take a physical field trip!

Consult the U.S. Show Caves Directory to see if there are any caves that offer educational tours within reasonable traveling distance of the school. The U.S. Show Caves Directory can be found at: <http://www.goodearthgraphics.com/showcave.html>. This list provides a link to the show cave's website (if available) as well as the location of the cave and contact information.

Many National Park Service (NPS) sites throughout the country also educate about caves. For several of these sites the cave (or caves) found there are considered the primary resource of the park. Many educational programs, including guided cave tours, at these sites focus on the cave and in many instances fees associated with programs can be waived for school groups with clear educational objectives to their visit. These National Park Service sites include:

Carlsbad Caverns National Park, New Mexico

www.nps.gov/cave/

Great Basin National Park, Nevada

www.nps.gov/grba/

Jewel Cave National Monument, South Dakota

www.nps.gov/jeca/

Mammoth Cave National Park, Kentucky

www.nps.gov/macac/

Oregon Caves National Monument, Oregon

www.nps.gov/orca/

Ozark National Scenic Riverways, Missouri	www.nps.gov/ozar/
Russell Cave National Monument, Alabama	www.nps.gov/ruca/
Sequoia National Park, California	www.nps.gov/seki/
Timpanogos Cave National Monument, Utah	www.nps.gov/tica/
Wind Cave National Park, South Dakota	www.nps.gov/wica/

Take a virtual field trip!

If there are no caves located near the school or if taking a physical field trip is not an option, arrange a “virtual field trip” to a cave. This can be done by contacting staff members at a show cave and arranging a videoconference between a “cave expert” and the class.

What is a videoconference? A videoconference is a real-time video session between people in separate locations. A point-to-point (two-person) video conferencing system works much like a video telephone. Each participant has a video camera, microphone, and speakers mounted to his/her computer. As the two participants speak to one another, their voices are carried over the network and delivered to the other’s speakers, and whatever images appear in front of the video camera appear in a window on the other participant’s monitor.

Almost 30,000 videoconferencing systems were located in U.S. schools, service centers, district offices, and departments of education as of April 2009. Through videoconferencing, teachers throughout the world have been able to plan and coordinate experiences for their students that fulfill the objectives of their curriculum while appealing to the variety of learning styles and developmental needs of their students.

Institutions that provide videoconferencing, such as national parks, zoos, aquariums, museums, science and technology institutes and many other educational institutions, can add value to lessons and enable teachers to give students the opportunity to interact with “experts” without leaving the classroom.

During a quality videoconference the teacher becomes a facilitator and the “expert” leads the session. Sessions should be highly interactive, thereby engaging the students to become active participants in their own learning.

If your school has videoconferencing capabilities seek out a cave site that offers videoconferencing programs and arrange a “virtual field trip” to that cave. Several of the National Park Service cave sites have the capability to videoconference from within the cave and many sites are using such technology to reach audiences who do not have the means of visiting the remote locations of the parks.

If videoconferencing equipment is not available Skype (www.skype.com/) is an option.

The basic version of Skype may be downloaded for free onto a computer and allows users to talk face-to-face with live video. The only equipment required is a computer with an Internet connection that has a microphone and a webcam.

Teachers all over the world are using Skype to make learning more exciting and memorable. Skype offers an immediate way to help students discover new cultures, languages, and ideas, all without leaving the classroom.

Skype in the Classroom (<http://education.skype.com/>) was recently created in response to – and in consultation with – the growing number of teachers using Skype to help their students learn. It is designed to help like-minded teachers find each other, collaborate on projects, and share inspiration and resources. Once teachers create a profile that sets out their interests, specialties and location, they can create projects. Projects are a way for teachers to find partner classes, partner teachers or guest speakers for a specific learning activity.

Things to consider

When arranging the field trip experience, whether it is physical or virtual, discuss the format of the program with the “cave expert”. Tailor the experience to the needs of the students and what they may be most interested in learning about. Allow the “cave expert” to educate the students in what makes the cave they are visiting unique. Reiterate key concepts that the students have spent time over the past lessons learning about such as cave formation, speleothems, cave life, and human uses of caves. The students now have prior knowledge about caves and are likely to have many thoughtful questions. Allow time for the students to pose their questions to the “cave expert” and receive their answers.

If physically visiting a cave know what to expect during the field trip and communicate this effectively with the students.