
LESSON 5 Value Assessment

OBJECTIVES

- Assess values and ethics as related to archeology and petroglyph vandalism.
- Appreciate the mission of the National Park Service to provide enjoyment while still preserving resources and values; and
- Recognize that choices have consequences.
- Understand rules of behavior at archeological sites.

MAIN IDEA

To understand different values and rules of behavior regarding cultural resources.

ESSENTIAL SKILLS

- cooperating
- open-minded attitude
- cultural values
- evaluation
- analysis
- synthesis
- drawing

MATHEMATICAL SKILLS

- interpreting data

MATERIALS

- student journals
- tape or thumbtacks
- large sheets of paper
- markers, paint, or crayons

PAGES TO PHOTOCOPY

- *Raiders of the Ruins* page 45
- *Petroglyph Examples* page 49
- *Archeological Site Rules of Behavior* page 50

The following table aligns this lesson with the Arizona Science Standards (5-24-04). Most curriculum connections shown are implicit within the lesson. Others are achieved through teacher interaction with the class, including discussion of the background information provided. Teachers are encouraged to expand on the lesson to increase its potential as an educational tool and a fun learning experience.

CURRICULUM CONNECTIONS: ARCHEOLOGY LESSON 5 VALUE ASSESSMENT					
Arizona Science Standards (5-24-04)					
	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Strand 1: Inquiry Process	C3-PO2 C3-PO5 C4-PO1 C4-PO3	C3-PO1 C3-PO2 C3-PO3 C3-PO4 C4-PO1* C4-PO3*	C3-PO1 C3-PO2 C3-PO3 C3-PO6 C3-PO5 C4-PO3	C3-PO1* C3-PO2* C3-PO3 C3-PO5 C3-PO7 C4-PO5*	C3-PO1* C3-PO2* C3-PO7 C4-PO5*
Strand 2: History & Nature of Science	C1-PO2 C1-PO3	C2-PO1 C2-PO3 C2-PO4 C2-PO5	C1-PO4 C2-PO1 C2-PO2 C2-PO3	C1-PO4 C2-PO1* C2-PO2* C2-PO3*	C1-PO4 C2-PO1* C2-PO2*
Strand 3: Science in Personal & Social Perspectives	C1-PO1 C1-PO2	C1-PO2 C1-PO3 C2-PO2		C2-PO1* C2-PO2*	C2-PO1* C2-PO2*
Strand 4: Life Science	C3-PO2				
* repetition of a performance objective from an earlier grade level					

INTRODUCTION

Environmental ethics and values vary from culture to culture and change over time. Archeology has undergone ethics and value changes as science and technology have changed. Early archeologists excavated sites by digging them up with shovels, collecting artifacts and sending them on to museums for study. Today's archeologists carefully study a site's surface, complete specific inventories of all artifacts, and create detailed maps before any form of excavation is done. If a site is excavated, it is done systematically, looking at each horizon, or layer, of soil and artifacts. Many sites were occupied by several generations of people over hundreds of years. With careful excavation, each of these occupations can be identified and studied. Artifacts are no longer collected whenever they are found. Most are left at an archeological site to preserve their historical integrity. Artifacts are only collected if they are unique and need to be further studied or are in danger of theft or immediate environmental damage. Most sites are purposely left unexcavated to preserve them for future archeologists with more advanced science and technology than is available today.

Students should be able to identify or become aware of their personal ethics and values. Their values are what determine their behavior and thus, their affect on the environment. By analyzing their personal ethics and values, they can implement change if needed and be examples to those who are unaware of how their behavior affects the environment around them.

LESSON FRAMEWORK

1. Terminology

A list of defined terms for teachers.

2. Mission of the National Park Service

Background information for teachers about the mission of the National Park Service and the balance each park must find between protection of resources and enjoyment by visitors.

5. Activity: *Reading Assignment*

A student activity that familiarizes students with the problems of archeological site vandalism and destruction.

4. Petroglyphs and Pictographs

Background information for teachers about how petroglyphs and pictographs are made and how they are interpreted by archeologists.

5. Activity: *Modern Rock Art*

An in-class student activity led by the teacher that challenges students to understand their own values and ethics regarding vandalism and destruction of archeological resources.

6. Activity: *Rules of Behavior*

An in-class student activity that reinforces the importance of protecting archeological resources by allowing students to create their own rules of behavior.

TERMINOLOGY

anthropomorph - carving or painting on rock which represents a human form.

ethics - principles of right or good conduct

geometric - carving or painting on rock which incorporates geometrical shapes and patterns

graffiti - modern drawings or inscriptions scratched or painted on a surface to deface the surface, usually so as to be seen by the public. A form of vandalism or damage to a surface

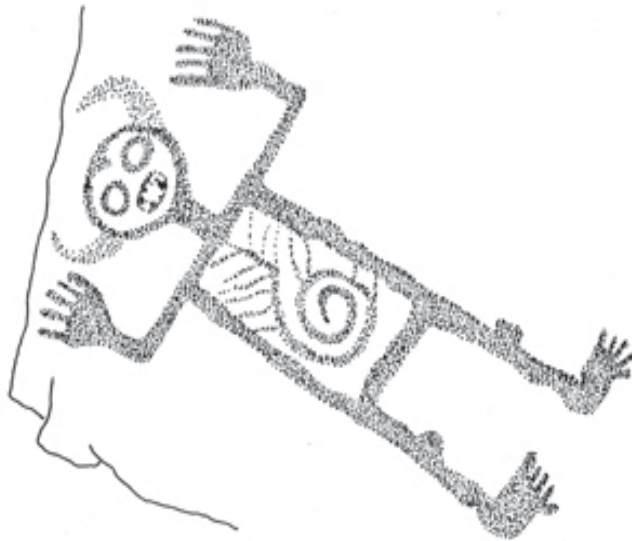
petroglyph - carving or pecking of symbols on rock for cultural purposes

pictograph - painting of symbols on rock for cultural purposes

zoomorph - carving or painting on rock which represents an animal form

value - worth in usefulness or importance to the possessor

vandalism - the destruction of cultural resources, including pothunting, artifact theft, and defacement



MISSION OF THE NATIONAL PARK SERVICE

Values are an important part of the mission of the National Park Service:

The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of this and future generations. The park service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world. (emphasis added)

Within the mission statement, look for these words: “preserves unimpaired” and “enjoyment.” It is often a delicate balancing act to both preserve and to provide enjoyment for visitors. If a proposed road to an area of exceptional scenic beauty cuts through an archeological site, should the road be built? Because petroglyphs and pictographs are easily damaged by visitors who simply reach out and touch them, should these sites be barricaded or even closed to visitors? Barricades at Puerco Pueblo may prevent visitors from fully enjoying the archeological site, but what about the damage to walls, footprints in the rooms, and artifacts stolen or displaced if visitors were given complete access?

The values of preservation and enjoyment may result in very different management ideas. Making decisions about park resources is often difficult as administrators change and the values of the public change. Based on previous lessons, students should already understand how humans and cultures vary and change over time. As this change occurs, environmental values and ethics also change. Decisions made today may be considered the wrong choice in the future.

In the early days of national parks, the mission statement was taken directly from the National Park Service enabling legislation, the Organic Act:

To conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

Emphasis was placed on “enjoyment” by early administrators. Roads, trails, and buildings were built to provide access into the national parks. Predators, the “undesirables,” were killed to better provide visitors with opportunities to see and feed the “preferred” wildlife. Bear feeding stations were commonplace in large parks and became a significant part of the visitor experience. Streams and lakes were stocked with nonnative fish. Nonnative plants were brought in to enhance scenery in developed areas. These decisions were applauded in the early years of the park service. Administrators today are learning from these past mistakes.

Public values play a significant role in the management of parks. In the early years, wilderness was to be developed and conquered with access provided for all. Park managers cut trees, built roads, and killed predators. But as these wild areas dwindled, their value increased. Today wilderness is prized for its wildness and inaccessibility. It is protected as a place where humans shall not conquer nature, but let nature alone. Wilderness areas offer a refuge from development without roads, trails, motorized vehicles, powerlines, intrusive sound, and even intrusive light that dims starlight in the night sky.

Reading Assignment

Teacher Instructions

Objective

To familiarize students with the problem of archeological site vandalism and destruction.

Main Idea

By reading the article provided, students will have a better understanding of the importance of protecting archeological sites from vandalism and destruction.

Materials

- copies of *Raiders of the Ruins* - one per person

Procedure

1. Divide students into their cooperative groups and provide members of each group with the article provided.
 2. Ask students to read through the article.
 3. Have each cooperative group discuss the article, identifying the problems of petrified wood theft at Petrified Forest National Park. Here are some questions to help you get the discussion started:
 - Why do people steal from archeological sites?
 - Why is it important to leave archeological sites as they are found?
 4. Introduce the mission of the National Park Service and the difficulties the service has in providing enjoyment for visitors while also protecting fragile natural and cultural resources. *See information about the mission of the National Park Service on page 42.* Here's an example question to pose to students:
 - Since destruction of archeological sites is such a problem, should all such areas be *closed* to visitors? This might protect the resources, but how would it affect visitor enjoyment? What would you do if you were park management?
 5. Using their journals, ask students to write down their ideas about protecting archeological sites. You may also want them to write the mission of the National Park Service in their journals.
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Raiders of the Ruins

by Carol Ann Bassett

Eric Polingyouma walks softly along the sage-covered rim of Antelope Mesa, where once stood the Hopi village of Awatovi. Now deep craters mar the earth, left by the shovels of treasure seekers, and a bright mosaic of shattered pottery litters the surface. Beneath the toppled walls dark tunnels and furrows run from room to room. Gone are the ceremonial offerings designed to carry the dead to another world. Gone, too, are the remains of Awatovi's inhabitants.

Thin clouds form above the serpentine canyons to the east as Polingyouma, a Hopi cultural analyst, gazes ruefully at the destruction around him. "These are recent holes," he remarks, pointing to a deep cut that has leveled part of a wall. "We Hopis are trying to study our culture through archeology - how we lived, where we came from. Whenever this happens, a link to the past is destroyed."

Some call it pothunting and consider it an innocent pursuit. But the proper term for it is looting. It is a criminal offense, and it is occurring more and more frequently in Arizona and elsewhere in the Southwest today because of the huge profits that can be made selling ancient artifacts, especially elaborately painted pottery and finely woven baskets, on the black market. At \$10,000 to \$30,000 or more for some of the rarer museum-quality pieces, the incentive is high, despite strict antiquity laws.

"There is not a single large pueblo ruin or major archeological site in Arizona that has not been severely vandalized," said Peter J. Pilles, Jr., Coconino National Forest archeologist.

"Pothunters are after loot; they're after artifacts they can sell or put into their personal collections. What *we're* after is knowledge. The artifacts are only one facet of getting that information. Once you rip those 'time machines' out of their context and set them on the mantel, probably 90 percent of the information is lost. Pothunters are robbing everybody of the opportunity to learn about the past. That's not only thievery, it's arrogant thievery," added the Forest Service scientist.

Adapted from:

Bassett, C.A. 1987. *Raiders of the Ruins*. Arizona Highways, September, Vol. 63, No. 9, p. 22-29.

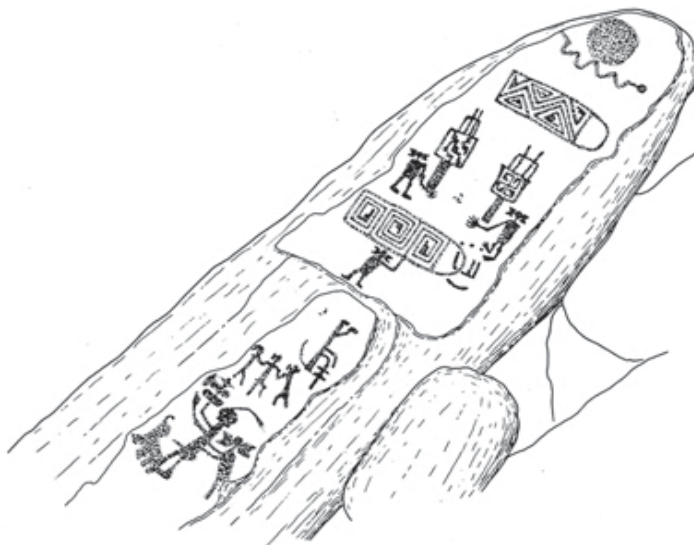
PETROGLYPHS AND PICTOGRAPHS

Petroglyphs are the prehistoric carvings, etchings, or peckings of human, animal, or graphic symbols on rock for cultural purposes. They are made by either direct percussion with a hammerstone or indirect percussion using a hammerstone with a chisel. Pictographs are pictures of human, animal, or graphic symbols drawn or painted on rocks for cultural purposes, using natural pigments. Symbols used in petroglyphs and pictographs are not part of a written language, such as Egyptian hieroglyphics. They cannot be put together as words of a sentence. Each has an independent meaning and may stand alone.

Petroglyphs and pictographs are difficult for archeologists to interpret because no literal translation exists. Modern American Indians can provide their interpretations for some of the symbols, but their meanings are based on the culture which exists today. In Lesson 2, students learned how cultures change over time. This includes the interpretation of evidence left behind by the possible descendants of tribes living today. Do old photographs in a grandparent's album hold the same meaning for kids today?

Archeologists believe that the placement of petroglyphs and pictographs is as important as the symbols themselves. They are usually found in areas of significance, such as habitation sites, along trade routes, sacred areas, springs, and landmarks.

Petroglyphs and pictographs are a fragile resource. They can be damaged with simply a touch from our human hands. The natural oils from our skin speed up the decaying process of the carvings and the paintings. Theft of these ancient symbols is also common. The rock is broken and chipped off so that the symbols are carried away. Sadly, many symbols are destroyed in the process, never to be seen again. Vandalism also occurs when others mark their initials or modern symbols on top of or around the petroglyphs and pictographs. This form of graffiti forever changes the meaning and the context of the ancient symbols.



Modern Rock Art

Teacher Instructions

Objective

To provide students with a personal connection to the protection of archeological resources.

Main Idea

By creating their own cultural symbols in the spirit of petroglyphs and then having them vandalized, students will develop a personal connection to the importance of protecting archeological sites from vandalism and destruction.

Materials

- copies of *Petroglyph Examples* - one per cooperative group
- large sheets of paper - enough for each cooperative group
- markers, crayons, or paint

Procedure

1. Divide students into their cooperative groups and provide each with the *Petroglyph Examples* page.
2. Discuss the petroglyphs shown. Have students come up with their own interpretations of the symbols. Explain why archeologists do not know what any of the symbols actually mean. *You'll find information about petroglyphs and pictographs on page 46.*
3. Ask students to think about what kind of symbols they would use to represent their culture today. If they wanted to leave a message for others by carving symbols into rock, what would the symbols be?
4. Students will now make their own modern rock art. Provide each group with the materials they need, using paper and not actual rock! Students can choose a special event to remember, mark a route, a sacred area, or landmark with the rock art they create.
5. Once all student groups are finished, have them post their work for others to see. After letting everyone guess the meanings, have each group share what their rock art represents. How difficult was it to guess the correct meanings of the symbols?

6. Find an excuse for all the students to leave the room. Now VANDALIZE their work. Put your initials over a design, mark something out, tear off a portion of the paper, add to a symbol so it looks like the original artist did it, etc.

7. Once students return to the room, discuss the vandalism. Here are some questions to get the discussion started:

- How does the vandalism make them feel?
- How does it change the meaning of their work?
- Vandalizing or defacing petroglyphs is not the only form of destruction at archeological sites.

What are other types of damage that can be done at sites? (some examples: pothunting, artifact theft, knocking down pueblo walls, touching petroglyphs)

8. Ask students to think about their personal values and ethics towards cultural resources and their protection. Do they understand how values may change over time? For example, with advancements in technology and science, the values and ethics of archeologists have changed. Instead of only learning from what they have collected, archeologists can now learn from everything they find and see, including each broken pottery sherd and stone chip, the landscape surrounding a site, pollen in the soil, etc.



Petroglyph Examples



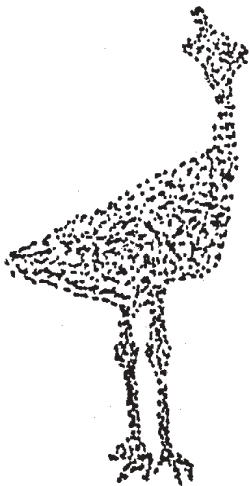
kachinas



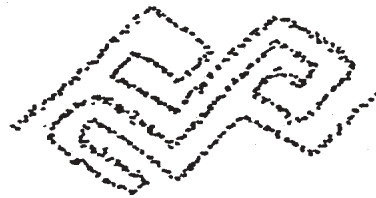
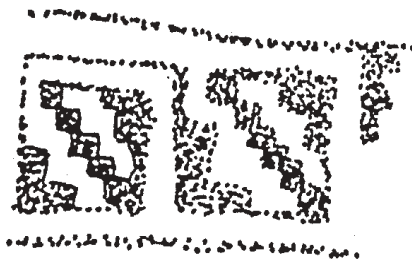
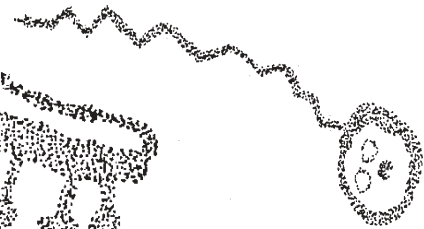
hands and tracks



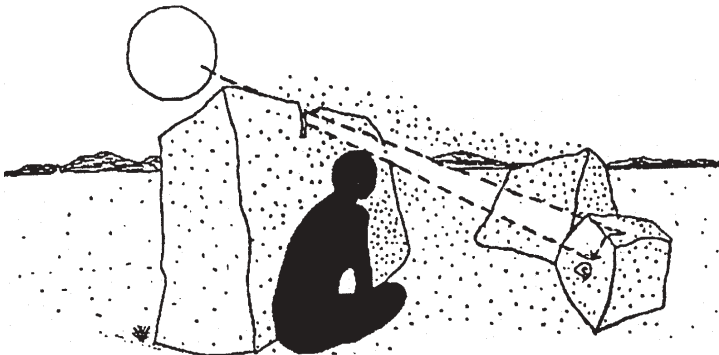
anthropomorphs



zoomorphs



geometrics



solar markers

Rules of Behavior

Teacher Instructions

Objective

To provide students with a personal connection to the protection of archeological resources.

Main Idea

By creating their own rules of behavior for archeological sites, students will develop a personal connection to the importance of protecting archeological sites from vandalism and destruction.

Materials

- student journals or large sheets of paper with markers
- copies of *Archeological Site Rules of Behavior* - one per cooperative group

Procedure

1. Divide students into their cooperative groups.
2. Tell students that they will be writing rules for visitors who visit archeological sites. These rules should not prevent visitors from enjoying an archeological site but must prevent damage to the artifacts and features found at the site.
3. The rules produced within each group should then be shared with the class. Discuss each rule with students to see if they agree or disagree. How does this rule protect the resource? Does this rule limit visitor enjoyment? Incorporate all the ideas presented into one set of class rules.
4. Share with students the set of rules on the next page. Check for differences between the class rules and the published rules. Students can then add to the class rules if needed. Explain to the students that both sets of rules apply when they visit the park during their field exploration. Not only should you bring a copy of the published rules to the park during your visit, but also the class rules. The park ranger leading your field exploration would love to have a copy to share with the park superintendent and other administrators.

Archeological Site Rules of Behavior

- 1 Stay on trails and obey signs. The signs tell you what not to do and inform you about what you are seeing.
- 2 Do not climb, sit, or stand on walls. These walls are hundreds and thousands of years old. They are fragile and weathered. Do not be the one to make them tumble.
- 3 Do not remove or pick up rocks near walls or wall fall areas. These may have once been part of the wall. The context of that rock may help in reconstructing the wall or may provide information about what the wall once looked like.
- 4 Do not dig, remove artifacts, or pile them up at a site. This encourages artifact theft and removes the artifact from its context.*
- 5 Do not add anything to a site, including litter, artifacts removed from another site, or offerings. This contaminates the cultural deposits archaeologists use to reconstruct past environments, trade patterns, and diets of the people who once lived there.
- 6 Do not build fires on or near sites. Fire can destroy ancient organic materials, can alter the dating potential of some artifacts, and can irreparably damage petroglyphs and pictographs with soot.
- 7 Do not touch petroglyphs and pictographs. Natural oils from human skin can cause deterioration of the symbols and can contaminate dating efforts.
- 8 Do not draw, scratch, or paint on rock surfaces. Vandalism destroys petroglyphs and pictographs.*
- 9 Do not collect anything from sites, including pottery sherds, projectile points, bottles, stone flakes, and plant materials.*
- 10 Do not displace artifacts. Surface material may be picked up for closer examination, but must be returned to its exact location.

** These are not only ethically wrong, they are also against the LAW!*

