

Lesson Plan Nine: How Did They Live Without Supermarkets?



Students explore the ways that the Ancestral Pueblo people made use of resources in their environment to provide them with food, tools, and other necessities.



Location: classroom; one activity may be done on a fieldtrip

Suggested group size: individuals, small groups, whole class

Subjects: plant uses, mineral uses, social studies, history, archeology, anthropology

Concepts covered: uses of natural resources, trade, people's adaptation to their environment

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Student outcomes: At the end of this activity, students will be familiar with many of the raw materials available to the Ancestral Pueblo people, how they were acquired, and how they were used, as well as their domestic plants and animals. Note: although medicines would come into this subject, they have not been included since many medicinal materials can be harmful if not used under the supervision of a well-trained, long-experienced practitioner.



EDUCATIONAL STANDARDS

New Mexico State Standards

K Content Standard 6: Show increased awareness of diverse peoples and cultures through visual and performing arts.

Visual Arts

Grade K-4

A. Identify specific works of art as belonging to particular cultures, times, and places.

1. Determine the function of various works of art and artifacts within a specific culture.
2. Create art that reflects New Mexico cultural and historical influences.
3. Describe art from one's own culture and the culture of others.
4. Recognize art from a variety of New Mexico cultures.

Grade 5-8

A. Compare and describe artwork of various eras and cultures; and

B. Recognize historical and cultural themes, trends, and styles in various works of art.

1. Sort and classify a variety of art objects within an identified historical and cultural context.

2. Create art that reflects a particular period within a specific culture.

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Language Arts

K-4 Benchmark I-D: Acquire reading strategies

Grade 4

5. Increase vocabulary through reading, listening, and interacting



K-4 Benchmark III-B: Identify and use the types of literature according to their purpose and function

Grade 4

4. Compose fiction, non-fiction, poetry, and drama using self-selected and/or assigned topics and forms.

K-4 Benchmark III-C: Be familiar with aspects of human behavior and man-made and natural environments in order to recognize their impact on the past and present

Grade 4

1. Explain how geographic factors have influenced people, including settlement patterns and population distribution in New Mexico, past and present.
2. Describe how environments, both natural and man-made, have influenced people and events over time, and describe how places change.

K-4 Benchmark I-D: Acquire reading strategies

Grade 4

5. Increase vocabulary through reading, listening, and interacting

K-4 Benchmark I-C: Students will identify and describe similar historical characteristics of the United States and its neighboring countries.

Grade 4

1. Explain how historical events, people, and culture influence the present-day Canada, Mexico, and the United States (e.g., food, art, shelter, language).

K-4 Benchmark I-D: Understand time passage and chronology.

Grade 4

1. Describe and explain how historians and archeologists provide information about people in different time periods.

NATIONAL STANDARDS

History

Topic 1: Living and Working Together in Families and Communities, now and long ago

Standard 1A, Grades K-4: The student understands family life now and in the recent past; family life in various places long ago



Standard 2 Grades K-4: The history of students' own local community and how communities in North America varied long ago

2A: The student understands the history of his or her local community

Grade K-4: Describe local community life long ago, including jobs, schooling, transportation, communication, religious observances, and recreation (obtain historical data)

Standard 2B Grades K-4: The student understands how communities in North America varied long ago

Grade K-4: Compare and contrast the different ways in which early Hawaiian and Native American peoples such as the Iroquois, the Sioux, the Hopi, the Nez Perce, the Inuit, and the Cherokee adapted to their various environments and created their patterns of community life long ago. (Compare and contrast differing sets of ideas)

Standard 6A: The student understands folklore and other cultural contributions from various regions of the United States and how they help to form a national heritage

Grade K-4: Compare and contrast various aspects of family life, structures, and roles in different cultures and in many eras with students' own family lives (Compare and contrast)

Geography

11. the patterns and networks of economic interdependence on earth's surface

Social Studies

I. Culture

Middle Grades

a. compare similarities and differences in the ways groups, societies, and cultures meet human needs and concerns

c. explain and give examples of how language, literature, the arts, architecture, other artifacts, traditions, beliefs, values, and behaviors contribute to the development and transmission of culture

Middle Grades

a. compare similarities and differences in the ways groups, societies, and cultures meet human needs and concerns



- c. explain and give examples of how language, literature, the arts, architecture, other artifacts, traditions, beliefs, values, and behaviors contribute to the development and transmission of culture
7. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and nonprint texts, artifacts, and people) to communicate their discoveries in ways that suit their purpose and audience.

MATERIALS

Raw cotton, gourds, rabbit skins, cobs of dried corn, seashells, dry clay, turkey feathers, tuff, yucca, bones, obsidian - or Raw Materials kit, available for loan from Bandelier, which contains all of above

Posters in Raw Materials kit

Images from Bandelier Collections website (print them yourself from the website, or a set is available for loan from Bandelier); many of the images in the “Archeology” section might be useful

“Making String” kit from Bandelier

Newspaper “Pueblo People Past and Present” in this curriculum guide

Books (see citations at the end of the lesson):

Wild Plants of the Pueblo Province

Flowering Plants of the Southwestern Woodlands

Southwestern Arts and Crafts

Children of the Clay

(see Resources section at end of lesson plan for complete citations)

Videos:

“Maria, Indian Potter of San Ildefonso”

“Flintknapping with Bruce Bradley, Ph.D.”



BACKGROUND AND HISTORICAL CONTEXT

The Ancestral Pueblo people who lived in and around Bandelier had a very thorough knowledge of the plants, animals, and rocks available in their arid environment and the ways they could be used. People have probably been using the area for over 12,000 years, so they had many, many generations to explore and experiment, and also develop trade routes. By the time the Ancestral Pueblo people moved into Frijoles Canyon, they knew how to find, make, grow, or get by trade everything they needed, even in their sparse surroundings.

Many of the materials that were important to them were wild, things the people would have used extensively when they were hunters and gatherers, before they settled down as farmers. Examples would include:

Yucca: roots used for shampoo or soap; leaves woven into sandal soles or baskets, or chewed on one end to make paintbrushes; the strong fibers in the leaves used for cordage; turkey feathers twisted into the cordage and then woven into warm blankets; flowers and fruit cooked as food

Piñon pine: wood excellent as firewood or making tools; nuts very nutritious and tasty; sap used for glue, chewing gum, or water-proofing baskets.

Ponderosa pine: wood good for firewood, tall straight trunks used for roof beams and ladder uprights, sap for chewing gum

Juniper: strong wood used for tools; shreddy bark softened for use as diapers or woven into mats, berries useful as survival food

Clay: made into pottery. Slip, clay with added water, was used for the background or the designs on pottery, or for painting ceremonial dancers.

Obsidian (volcanic glass): chipped to make very sharp tools such as knives, projectile points, and drills

Basalt (hard dense volcanic rock): shaped into durable tools like grindstones, hammers, or mauls

Tuff: soft, crumbly stone; cavates were carved into the tuff cliffs, while loose pieces of tuff were shaped into rough bricks for house building

Wildlife: hunters used all the parts of the animals they killed, including the skin for leather or fur, the bones for tools, the sinew for thread, and of course the meat, which was dried in the form of jerky for storage. The most common prey animals were rabbits and deer



Other materials came from their gardens. They included:

Corn: the food regarded as their most important staple. Dried for storage; ground into meal for cooking

Beans: the second staple crop; very nutritious when served with corn, since the two together make up a complete protein. Require thorough cooking.

Squash: the third staple crop (third of the “Three Sisters”); it provided vegetable nutrients

Turkey feathers: harvested from their domestic turkeys and used for dance costumes, fletching arrows, and twisted with yucca cord to be woven into blankets

Gourds: dried and with the seeds removed, they were made into pottery scrapers and rattles as well as utensils such as ladles and bowls

And some came by trade. They included:

Turquoise: the closest source was near Santa Fe; made into beads and pendants, small pieces used in mosaics, and sometimes powdered for paint

Seashells: brought by trade from the Gulf of Mexico, the Gulf of California, and the coast of California; shells were made into beads, bracelets, and pendants, and small pieces were sometimes made into mosaics on larger items.

Parrots or parrot feathers: brought by trade from Mexico; the bright-colored feathers were used for dance costumes

Cotton: grown in the Bandelier area; it was spun into thread and then woven into cloth

(also, refer to the articles “Making A Living”, “Volcanoes, Axes, and Arrowheads”, “Building Homes in Frijoles Canyon”, “Using Native Plants”, and “Cooking With Clay” in the newspaper, “Pueblo People Past and Present” in this curriculum guide, as well as the lessons “Making Stones Into Tools”, and “Making Pueblo Pottery”.)



VOCABULARY

Basalt: a hard, dense, durable volcanic rock often used for tools such as grinding stones, hammers, and axes.

Gourds: relatives of squash which develop a hard or leathery outside; when they are dried out, the seeds can be removed from the inside and the hard rind used for such things as bowls, dippers, rattles, and clay scrapers

Obsidian: glassy black volcanic stone used for making extremely sharp tools

Raw materials: materials as they come from nature, before they have been processed to be used, such as clay just out of the ground, or yucca leaves before the green material is removed

Tuff: crumbly rock composed of volcanic ash. At Bandelier, the canyon walls and mesas are made of tuff that came out of two huge eruptions of the Jemez Volcano over a million years ago. The Ancestral Pueblo people shaped the soft stone into bricks to build their homes and carved small caves into the cliffs to use as rooms

Turquoise: a soft stone, found in varying shades of blue to green, popular for making jewelry throughout the Southwest past and present. There is a source south of Santa Fe near Cerrillos, which has been mined for hundreds or thousands of years.

Yucca: plant with long, stiff, sharp-pointed leaves, found in dry areas, related to lilies although often mistakenly identified as a cactus

PRE- AND POST-EVALUATION

Pre-evaluation:

Ask the students to each make a list of the things they will use today that they must have to survive. As a class, combine the individual lists into one, putting things into categories according to why they are essential (food, shelter, etc) down one side of a flipchart. You could also make a list of things the students enjoy but that are not essential to survival. Down the other side, list what the Ancestral Pueblo people might have used for the same purposes, including the “enjoy” list if you made one. If medicines are mentioned, tell the students that they were just as essential then as now, and the people knew many medicines that could be made from plants and other materials, but they won’t be included in this lesson. Save the lists for later use.

**Post-evaluation:**

- 1A. As individuals, small groups, or the whole class, go back over the list to find out what the students would subtract or change, and what they can now add.
- 1B. Have each student write a story or draw a picture telling how they would have gotten at least four things necessary for survival if they had lived in Ancestral Pueblo times and, if they wish, one from the “enjoy” category. Ask them to be sure to include at least one kind of food and something related to shelter. Use these stories or pictures to go back over the list. If appropriate, post them in the classroom or in a public place in the school.
2. If the class has the chance to go on a field trip to Bandelier or another Ancestral Pueblo site, or another outdoor location, add a question to the worksheet for the day asking the students to make a list of all the materials they see that they know the Ancestral Pueblo people used, and what the uses were.
3. Make a set of game/flash cards of poster board or something similar, about 12 inches long and 5 inches wide. On one side write the name of an item made by the Ancestral Pueblo people (or use a drawing of it.) On the other side write the name of the material it was made from (or use a drawing of it). The game could be played many different ways. One possibility would be to choose a student to come to the front of the room. Hold up the card so one side is showing and have the student give the answer that is on the other side. If the answer is correct, the student gets another turn. If it isn't, someone else is chosen to try; if the answer is right, they get another turn, etc. It could also be done with small groups or partners.

PROCEDURES: ACTIVITIES TO CHOOSE FROM

1. Raw Materials: Put the items and posters from the Raw Materials kit out around the classroom. Ask the students to go to each of the stations and make a list of the raw materials shown and at least two uses for each in Ancestral Pueblo times.
2. Wild Plants: Ask the students as individuals to look up, either in the books in the materials kit or in another source, at least two of the wild plants mentioned in the article “Using Native Plants” in the newspaper. For each one tell how to recognize it, whether it grows in wet places or dry places, and at least two uses for it. Consider asking them to also make a drawing of the plant.
3. Ask the students to look through the newspaper, “Pueblo People Past and Present” (in this curriculum guide) to see if they can find additional information on the Ancestral Pueblo people’s uses of materials and ways of making things they needed. Ask them to write a description of the use of at



least two materials, or the making of at least two things. The articles “Volcanoes, Axes, and Arrowheads”, “Building Homes”, “Making A Living”, “Using Native Plants”, and “Cooking With Clay” might be particularly useful.

4. Have the students look in the book *Southwestern Arts and Crafts*, or a similar one, to find items that were made in Ancestral Pueblo times that are still being done today. Have them write a description of how an item is made and what materials are needed.
5. Pottery, Cloth, Tools, and Homes: if the class is particularly interested in the use of clay to make pottery, consider showing the video “Maria, Indian Pottery Maker of San Ildefonso” and looking into the lesson plans “Making Pueblo Pottery” (which includes activities on making pottery) and “What Can Pot Sherds Tell Us About the Past” (which focuses on how old pottery pieces are valuable to archeologists).

If they are interested in the use of cotton for cloth, look at “What Did They Wear?”. If they are interested in the making of stone points, refer to the video “Flintknapping with Bruce Bradley, Ph.D.” and the lesson plan “Making Stones Into Tools”. If you would like to explore making replicas of Ancestral Pueblo tools and other artifacts, see the lesson plan “Ancestral Pueblo Tools” by looking under “Teaching With Museum Collections” in the Bandelier Collections website (on the Bandelier website, www.nps.gov/band, click on the “Museum Collections” listing)

If they are interested in the use of tuff for building homes, refer to lesson plans “Making Stones Into Tools” and “Be An Ancestral Pueblo Architect”.

6. Farming: Ask the students to look at the article, “Making a Living” in the newspaper, “Pueblo People Past and Present” in this curriculum guide to find out:
 - What food crops did the people grow? (**corn, beans, and squash**)
 - Was there a crop that some Ancestral Pueblo people grew that wasn’t for food? What was it, and what was it used for? (**cotton, cloth**) **Note: tobacco is another possible answer to this initial question; used for ritual purposes rather than day-to-day smoking as it is commonly used today, so the health hazards wouldn’t have been the concern they are now. Gourds are also a possible answer; related to squash, but not edible.**
 - How did they store their crops so they would keep through the winter and be available for hard times? (**they dried them and put them into storerooms built so mice and bugs couldn’t get in**)



- Plants won't grow without water. How did they get water to their crops? **(plant near a stream and dig irrigation ditches, or plant in different places so the plants would have a chance to get rain; live in harmony and respect with the living things and spirits, and have ceremonies)**
7. Cordage has long been an important item. Borrow the "making string" kit from Bandelier. Take the photo pages out of the kit and put them in order on a bulletin board or table. Put out lengths of string made of cotton or other fibers (not nylon) and let the students follow the instructions and illustrations to take a try at making thicker cord from the already-made string. Ask them if they can think of other materials, both in Ancestral Pueblo times and now, that would make strong cord or rope. (Suggestions: human hair, which was frequently used in Ancestral Pueblo times, makes very strong cord and is readily available since it grows back. Horsehair is often used now. Yucca fiber, drawn from the inside of yucca leaves, was very commonly used. In some places fiber was obtained from nettles)
 8. Turkey-feather blankets: rarities now but common (and prized) possessions of Ancestral Pueblo people. When a craftsman was making yucca fiber cord, they would twist soft turkey feathers into the cord, resulting in a strong, fuzzy string. These strings would then be used to weave a blanket, which would be warm, soft, and light. See the photo of the turkey feather blanket in the "Making String" kit. If you have the softer type of feathers, from a turkey or other fowl, let the students see if they can make a good "fuzzy string" as they are practicing regular cordage. Present-day craftspeople often put the feather in water before twisting it into the cordage; it sticks better during the making, and fluffs up when dry.

EXTENSION IDEAS

1. Have a craftsman come to your class to demonstrate the use of one of the materials the students have studied. You could consider combining this activity with ones from other lessons that involve a guest speaker, such as Extension 4 in "Learning from Oral Traditions", 2B in "What Can We Learn from Pueblo People Today", 4 in "Making Pueblo Pottery" or Extension Activity 4 in "Oral Traditions".



RESOURCES

Books:

Dunmire, William and Tierney, Gail, *Wild Plants of the Pueblo Province*, Museum of New Mexico Press, Santa Fe, NM, 1995 (ISBN 0-89013-282-8)***

Foxx, Teralene, and Hoard, Dorothy, *Flowering Plants of the Southwestern Woodlands*, Otowi Crossing Press, 1995 (ISBN 0-9645703-1-9) ***

Bahti, Tom and Bahti, Mark, *Southwestern Indian Arts and Crafts*, K C Publications, 1997 (ISBN 0-88714-095-5) ***

Swentzell, Rina, *Children of Clay*, Lerner Publications Company, Minneapolis, 1992 (ISBN 0-8225-2654-9) ***

Videos:

"*Flintknapping with Bruce Bradley, Ph.D.*" (video) 45 min. Skilled tool maker shows all the steps needed to make a series of stone tools from obsidian. ***

"*Maria, Indian Potter of San Ildefonso*" (video or DVD) 30 min. Takes viewers through the stages of making traditional San Ildefonso matte-on-black pottery. ***

*** Available for free loan from Bandelier, (505) 672-3861 x 517