

Identifying Plants

Science, social studies, language arts

SKILLS..... Knowledge, comprehension, application, analysis
STRATEGIES..... Observation, writing, mapping, communication, discussion, research skills
DURATION..... 1 class period; 2-hour field trip to Aztec Ruins
CLASS SIZE..... Any

OBJECTIVES

In their study of plant use at Aztec Ruins, students will:

1. Locate, identify, and describe certain plants at Aztec Ruins.
2. Compare and contrast native and cultivated plants.
3. Research and describe how Ancestral Pueblo people prepared and used plants.

MATERIALS

- "Plants at Aztec Ruins" MAP and "Plants of Aztec" WORKSHEET for each student
- Completed "Plants & Basic Needs" HANDOUT from previous lesson
- "Plant Descriptions" HANDOUT and additional references, if desired

VOCABULARY

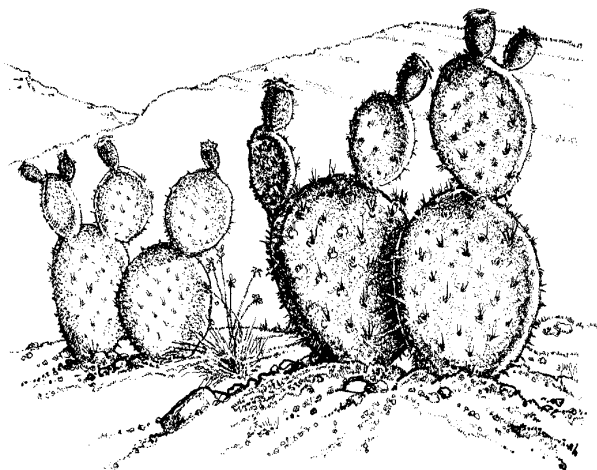
native plants: plants that naturally occur, or are native, to a given area; they have not been introduced from other areas by humans or animals.

cultivated plants: plants that are planted and cared for by people; the Ancestral Pueblo people cultivated corn, beans, squash, and in some areas, cotton.

digging stick: sturdy stick pointed at one end, used for digging holes for the planting of seeds.

juniper splints: thin layers of juniper placed above the latillas and below the dirt layer in a roof.

yucca: native plant with pointed, fibrous, stiff leaves, used in many ways by the Ancestral Puebloans.



This is the second of two lessons that explore how the Ancestral Pueblo people used plants. This lesson concentrates on the identification, description, and uses of plants. The first introduced students to the concept of plants helping to fulfill basic needs.

BACKGROUND

Ancestral Pueblo people relied on a variety of plants to fulfill their basic needs. But they not only had to know their uses, they also had to know their habitat and how to identify them, and determine the best time for collection.

Many of the plants used in roof construction, such as Douglas fir and spruce trees, did not grow in the immediate area. These trees grow in moister, higher elevations, over 25 miles away. Other plants grow only in certain habitats, such as along waterways, on mesa tops, or in rocky areas. Fortunately, the people did not have to travel far to find many of the plants they needed.

Today, several of the plants that the Ancestral Pueblo people used grow within the area that is now Aztec Ruins National Monument. Most are native plants – those that occur naturally in this area and have not been introduced by animals or humans. Some of the plants are occasionally planted and cared for by workers at the monument as a demonstration of plants cultivated by the Ancestral Pueblo people. These include corn, beans, squash, and cotton.

These cultivated crops were introduced to the Southwest from Mexico. Over hundreds of years they became increasingly important to the Ancestral Pueblo peoples as they relied more on farming for their food supply.

SETTING THE STAGE

Review the names of commonly used plants from the “Plants & Basic Needs” HANDOUT completed in the previous lesson. Share the background information regarding their occurrence at Aztec Ruins today.

PROCEDURE

1. Divide the students into teams of 3 to 5 students. Assign each group several plants listed on the “Plants & Basic Needs” HANDOUT to research while on the field trip.
2. Distribute “Plants at Aztec Ruins” MAP, “Plants of Aztec” WORKSHEET, and the “Plant Descriptions” HANDOUT to students. If available, use additional references that include color pictures of the plants.
3. Review proper behavior for the field trip: Stay on the surfaced trail through the West Ruin; do not remove any plants or plant parts.
4. Take a field trip to Aztec Ruins and complete the following assignments:
 - Identify a specimen of each student’s assigned plant. Use the “Plants at Aztec Ruins” MAP with locations of plants indicated to help students find their plants. Depending on the time of the year, some plants might be easy or difficult to identify. The group that researches corn, beans, and squash may not find live specimens (although sometimes they are growing in the plot in front of the visitor center), but may find pictures or samples in the exhibits or references in the trail guide.
 - Look for additional specimens of their plants and plot their locations on the “Plants at Aztec Ruins” MAP. Use a suitable legend to denote their plant.
 - Search for information about their plants and add it to their “Plants & Basic Needs” WORKSHEET.

- Complete the “Plants of Aztec” WORKSHEET. Describe characteristics of their assigned plants and describe what parts of the plant were used and how.

CLOSURE

While still on site, each group reports their findings to the class by addressing the following questions:

What are some of the distinguishing characteristics of their plants? (View the plant specimens with the entire class, if possible.)

How did the Ancestral Pueblo people prepare the plant to use it?

Share the BACKGROUND information on cultivated and native plants.

Were the plants they researched cultivated and/or native to the area?

Compare the findings of the different groups.

EVALUATION

Students are evaluated on the accuracy, thoroughness of their worksheets and participation in class discussions.

EXTENSION

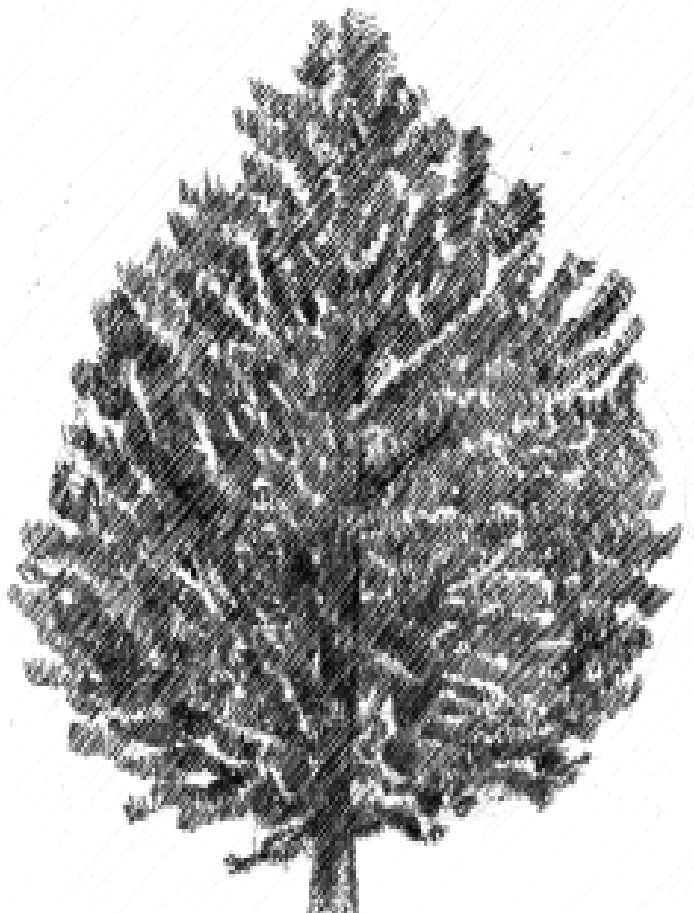
1. Identify and describe plants that the people who lived at Aztec Ruins used but that cannot be found locally or within the monument. Locate specimens in other places, such as the school yard, public lands, or around student homes.

REFERENCES

Dunmire, William W., Tierney, Gail D., *Wild Plants and Native Peoples of the Four Corners*, Museum of New Mexico Press, Santa Fe, 1997.

Flowers, Shrubs and Trees of the Southwest, Southwest Parks and Monuments Association, Tucson, 1995.

Niethammer, Carolyn, *American Indian Food and Lore*, Collier Books, New York, 1974.



PLANT DESCRIPTIONS

Juniper

Growing up to 20 feet high, this tree has tiny, aromatic, scale-like leaves. The one seed berry is pale blue, globular, and grows to 1/4 inch in diameter.

Big sagebrush

This shrub grows from 2 to 5 feet tall. The smoky-colored bark hangs in shreds and has a distinctive turpentine smell, especially when wet. The 1-inch leaves have 3 teeth at the end. The flowers are tiny.

Broadleaf yucca

Sometimes called *banana yucca*, its long pointed leaves are up to 2 inches wide and thick from moisture stored inside. The leaves appear to sprout from the base of the plant and reach nearly 3 feet high. The creamy white flowers bear a heavy green fruit. Because it requires much energy to produce both the flower and the fruit, the yucca blooms only once every few years in the spring.

Narrowleaf yucca

This yucca is similar to the broadleaf yucca, but its pointed leaves are thin and strap-like, and not over 1 inch wide.

Wolfberry

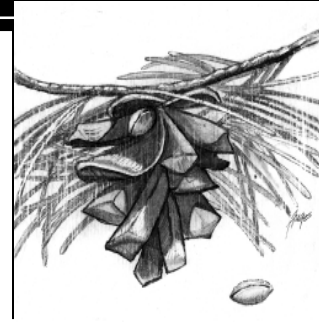
The older branches of this bush are reddish brown, while the younger ones are pale yellow. Its mature leaves are leathery and pale green and grow in clusters. Long, sharp spines protrude from the branches. The creamy green flowers bloom from May to June, and are funnel-shaped and about 1 inch long. In July they produce an orange-red berry that resembles a very small tomato.

Prickly pear cactus

This sprawling cactus has flat, stout, spined stems arranged in pads. The type found at Aztec has pads that are flat on the ground, densely spined, and dry. The yellow flowers yield egg-shaped purple fruit called "tunas," which grow to 1-1/4 inches long when ripe.

Piñon

Also called the "two-leaf" or "Colorado" piñon, this tree grows up to 35 feet high. Its bark is grey to reddish brown with furrowed scaly ridges. The light green needles are usually found in bundles of 2. The yellowish-brown cones are egg shaped, about 1-1/2 to 2 inches long, and yield nuts in the fall.



Rabbitbrush

This shrub has erect, slender, flexible branches and grows up to 7 feet high. The branches are covered with dense, felt-like, matted hairs and many narrow leaves. The bright yellow flowers grow in dense clusters at the end of the stem, and bloom from the end of summer to mid-fall.

Three-leaf sumac

Mature shrubs can exceed 8 feet high. The three-part leaves turn a deep red in fall. The pale yellow flowers produce sticky, hairy, pea-sized red berries in the spring which taste sour and give this bush its other name, *lemonade bush*.

Fremont cottonwood

Growing up to 80 feet tall, this tree has deeply furrowed gray bark. The broad, triangular leaves with sawtooth edges are bright green in summer, gold in fall, and drop before the first snow. In spring and early summer it produces masses of soft, cotton-like fibers.

Globe mallow

Growing up to 20 inches high, this plant has green leaves about 2 inches long. The saucer-shaped orange flowers have 5 petals and are from 1 to 1-3/4 inches wide.

PLANTS OF AZTEC

PLANT NAME	DESCRIPTIVE CHARACTERISTICS	PARTS OF PLANT USED & HOW
(EXAMPLE) <i>Juniper</i>	1. <i>Scale-like leaves</i> 2. <i>Hard blue berries</i> 3. <i>Shaggy bark</i>	1. <i>Trunks and branches were cut and peeled and used for roof's of houses.</i> 2. <i>Berries were gathered and used in cooking.</i>

PLANTS AT AZTEC RUINS

