



Aztec Ruins National Monument Encyclopedia Series

Series of 26 posts looking at a topic or topics based on each successive letter of the alphabet.

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A

is for Aztec, Ancestral Pueblo and Anasazi

The name Aztec Ruins is a misnomer. First, the Aztecs never lived here – the Aztec Empire existed in Central Mexico between 1325 – 1521 CE, several centuries after the structures here were built. Second, the descendants of the people who built the great houses don't consider them to be ruins; rather they are places inhabited by their ancestors.

Aztec West was built by the Ancestral Pueblo people in the early 1100s CE, and was occupied for about 200 years. They also built the great houses in Chaco Canyon which were constructed between ca. 850 – 1150 CE.

In the past, archaeologists have referred to Ancestral Pueblo people as Anasazi, a Navajo word translated as “ancient enemies” or “ancient ones.” Today, we use the term Ancestral Pueblo to reflect their descendants, the Pueblo people who continue to live in the Southwest.

B

is for Basketry

Before the introduction of pottery, the people who lived in the Southwest used a variety of techniques to craft fine baskets in different shapes and sizes for their daily needs – storing grain, seeds and other items, carrying water and even cooking. They waterproofed baskets by lining them with pine pitch, and cooked in them by dropping heated stones into the food.



Producing a finely woven basket is a time-consuming process, and like all things made of plant fibers, baskets deteriorate over time.

When people began to depend more and more on agriculture as a primary food source, their lifestyle became more sedentary and ceramics became more practical. Clay pots are heavy and breakable, but they are durable and can be placed directly on a cooking fire. By around 500 CE, pottery was in common use in Chaco Canyon and the San Juan Basin, and the use of basketry declined.

Have you ever woven a basket or made a clay pot? What did you use it for?

C is for Ceramics

Ceramics are fascinating. Malleable clay can be formed into an endless variety of shapes, decorated in any number of ways, fired to become durable, and the final products used for myriad purposes. Its limits depend only on the imagination of the potter. Pueblo people today trace a long history of ceramics back hundreds of years to their ancestors.



Ceramics have been produced in the Southwest for nearly 2,000 years, beginning with plain brown and gray ware, followed by corrugated ware. Around 600 CE, potters began to paint whiteware and redware with mineral or plant pigments before firing to create black-on-white designs. This style spread rapidly across the region, and over the next seven centuries, designs became more intricate and refined.

Aztec is a relatively late site, with no pottery found here dating earlier than ca. 1000 CE. However, an extensive collection featuring 40 different types of pottery indicates people imported thousands of pots.

Potters living at Aztec made corrugated grayware and black-on-white ware using some of the same vessel forms and design motifs found on imported ceramics. Rare forms include animal and human effigies, flat rectangular bowls, cylindrical jars and spiked pots. Aztec black is a style found only at Aztec Ruins. Produced in the 1200s CE, vessels are completely smudged black with a highly polished surface. Archaeologists use color, shape, design and type of finish to determine when, where and who made different ceramics.

When you visit Aztec Ruins NM and other National Parks, remember that everything is protected for this and future generations, so please leave artifacts, rocks and everything else where you find it.

D is for Dendrochronology

When you walk through the great house, the first thing you'll notice are the thick sandstone masonry walls. But closer examination will reveal wooden structural elements everywhere you look. Aztec Ruins has more original wood than any other site in the Southwest.



Dendrochronology, or the study of tree rings, is a method of scientific dating based on the analysis of tree ring growth patterns as well as counting the rings. It was developed right here at Aztec Ruins in the early 1900s by Andrew E. Douglass. He realized that by overlapping ring patterns from live trees, dead trees, and ancient wood from the same region, he could create a long tree ring chronology. This was a great breakthrough, because it enabled archaeologists to date wooden beams from ancient structures of unknown age. From tree ring dating, we know that Aztec was constructed in the early 1100s, with building spikes in 1111 and 1118. We also know the site was occupied for approximately 200 years – while people lived here, they replaced broken beams with newly harvested logs, the most recent was dated to 1269 by dendrochronologists.

E is for Earl Morris and Excavation

In 1916, when archaeology was still a new and evolving science with few established rules or techniques, the American Museum of Natural History in New York funded the first excavation of Aztec Ruins conducted with the purpose of understanding the past. The dig was headed by Earl Halstead Morris, an archaeologist now known for his dedication to Southwest archaeology, particularly at Aztec Ruins. He and his team spent the next several seasons excavating and stabilizing the site. During this time, he built a house using some materials from the archaeological site; this house is now the park's visitor center. In 1934, he returned to supervise the reconstruction of the Great Kiva for the National Park



Service. The science of archaeology and the techniques used for excavation have evolved over the past century, but today, thanks in large part to Earl Morris's work, Aztec Ruins continues to offer a glimpse into the life and culture of the Ancestral Pueblo people who lived here 900 years ago. Earl Morris found his first artifact at age three, and this experience began his life-long love of archaeology.

F is for Food

Food is an important part of every culture – what is eaten, how it's prepared, when or where it's eaten, with whom it's shared. The Ancestral Pueblo people ate a wide variety of plants and animals, both domesticated and wild. The people were agriculturalists, and corn was the most important crop they grew. The “Three Sisters” – corn, beans, and squash – were the staples of their diet. They also grew sunflowers, amaranth, and gourds, and raised turkeys for food and feathers. A small sample of the wild foods

Ancestral Pueblo people hunted and harvested include: deer, elk, antelope, rabbits, ducks, squirrels and other rodents, small birds, eggs, grasshoppers, and grubs; piñon nuts, cactus fruits and pads, yucca fruit, goosefoot seeds and greens, Indian tea, wild onions, wild parsley, juniper berries, wild spinach, cattails, watercress, chokecherries, mushrooms, Indian rice grass, wild asparagus, purslane, serviceberries, sumac, mint, rosehips, tomatillos, and wild berries.



G

is for Great House

The ancient structure you are invited to walk through and experience at Aztec Ruins is called a great house. The exact purpose of great houses is not entirely understood, but from 850 to 1250 CE, great houses in Chaco Canyon and across the region seem to have served as ceremonial, political, economic, agricultural and learning centers. They most likely contained residential areas for a few hundred people, but were probably not huge apartment buildings. The majority of the population would have lived in small houses nearby. The great house we know today as Aztec Ruins was constructed in the early 1100s, as Chaco declined, and the center of the culture shifted north to Aztec. It was occupied for about 200 years before the people migrated to other locations.



H

is for Hmmm...?

There are so many unanswered questions, so many unknowns. The Ancestral Pueblo people passed on their knowledge through oral traditions generation after generation, but for many archaeologists and visitors, this 900 year old great house holds numerous mysteries.

- Why did the Ancestral Pueblo people build such monumental structures?
- How did the people who lived here use all the rooms and spaces in the great house?
- Why and how did the use of different rooms and areas change over time?
- Who were the people that lived in the great house, what were their roles in society?
- What was the function of the corner doorways?
- What did the T-shaped doors symbolize?
- Why were the tri-walled kivas built, what was their significance?

I is for Irrigation

The Ancestral Pueblo people who built the Aztec West and East great houses took advantage of the year-round water from the Animas River by constructing irrigation ditches to bring water to their cultivated gardens of corn, beans, squash and other domesticated crops.

According to early settlers, irrigation canals were present near the ruins prior to being destroyed by modern farming and development. The late Sherman Howe, who moved to Aztec in 1880, reported that a canal could be traced easily in the 1880's for nearly 2 miles. The intake of this canal was on the Animas River some 3 miles above Aztec. Earl H. Morris, who excavated the site between 1916-1922, also implied that the Animas was used for prehistoric irrigation.

J is for Jewelry

Personal adornment has served as an important indicator of social identity, community status, or wealth through time all over the world. This was true in the Ancestral Pueblo community of Aztec Ruins, too. Different styles of jewelry or ornaments made of different materials may have indicated ethnic, kinship or tribal affiliation, age, gender, offices held or a person's ideological beliefs. Just like today, jewelry and other personal adornments were intertwined with peoples' identities on multiple levels.



What's your favorite piece of jewelry or personal adornment, and why is it special to you?

K is for Kiva

'Kiva' is a Hopi word used to refer to specialized round and rectangular rooms in modern Pueblos.

Ancient Chacoan kivas, the type found at Aztec Ruins, are round or keyhole shaped, usually semi-subterranean, and built into great houses. Like modern kivas, they were entered by a ladder through a hatch in the roof down to the center of the kiva floor, or in the case of great kivas, via stone staircases leading from ground level down into the kiva.

Kivas were built in all sizes. Great kivas, like the one in the plaza at Aztec Ruins, are believed to have been used for community-level activities, whether ceremonial, social, or political. Small kivas are sometimes called clan kivas, and were probably used by small kin-based family groups for ceremonial, social, work and other activities.

During ceremonies today, the ritual emergence of participants from the kiva into the plaza above represents the original emergence through the sipapu, or navel, by Puebloan groups from the underworld into the current world.



L is for Ladder

Where today we would use staircases, the Ancestral Pueblo people living in a great house would have used wooden ladders made of peeled branches lashed together with cord or leather strips. Wooden ladders were used to enter kivas through a hatch in the roof. Some great house rooms had hatches in the floor / ceiling, where ladders were used to go up or down a level between rooms. Ladders were also used on the exterior, plaza-facing side of room blocks to access open patios on the roofs and gain access to rooms on the upper levels.



M is for Masonry

The people Aztec were skilled masons. Working only with stone tools, they constructed huge communal buildings that continue to awe visitors today. Their masonry techniques changed over time, so archaeologists can date sections of structures by the masonry style. Masonry styles found in great houses have been classified into five main styles: Types I – IV, and McElmo.



McElmo is the most common masonry style at Aztec Ruins, but much of it is non-conforming. Some of this might be attributable to various stabilization efforts over the past century, as well as original masonry style.

Some McElmo style walls in the west wing have unique decorative banded masonry. This might be bands of sandstone of different type or thickness, or of a different color, such as the famous green bands along the west exterior wall. Regardless of the masonry styles, most likely all the interior and exterior walls were covered in plaster and painted, so the stonework would not have been visible.

N is for Native Plants

People have long used numerous local, native plants for food, medicine, body care, and for making clothing, baskets, cordage and many other useful objects. Following are just a few examples of plants used by people here in the San Juan Basin.

Sagebrush: leaves are a good source of iron and vitamin C. Used medicinally as tea for bathing wounds and combating digestive and respiratory tract problems, headaches and colds, and is an anthelmintic (expels parasitic worms). Wood used for fuel. Smoke used as a smudging herb.

Banana yucca: leaf blades processed and turned into cordage, nets, baskets, and sandals. Roots used as soap. Fruit and flowers eaten.

Prickly pear cacti: fruit and young pads eaten.

Chokecherry: fruit was eaten

Four o'clock: medicinal use for rheumatism.

Mountain mahogany: root and leaves used to treat stomach problems.

Rabbit brush / chamisa: stems used to make baskets.

Rocky mountain bee plant and Tansy mustard: boiled down into an extract to make paint for pottery.

Three-leaf sumac: berries used for a refreshing beverage, and for dyes. Leaves used medicinally. Crushed leaves and twigs mixed with yellow ochre and pinon pitch to make black dye for wool and baskets.

Come wind your way through the Native Plant Garden at Aztec Ruins to see some of these plants and more! Also, take a look in the museum to see some of the objects made from plant materials.

O is for Observations

Through many generations of observation, the Ancestral Pueblo people gained a deep understanding of the natural world. They incorporated their knowledge of astronomical events into the construction of the great houses by aligning walls and other features with annual solar and lunar events. For example, the North, or back, wall of the Aztec West great house runs East-West, and is aligned with the Summer Solstice sunrise and the Winter Solstice sunset.



Phenological observations were also a very important part of life. Phenology is the study of the timing of periodic plant and animal life cycle events, such as

when specific plants first produce leaves, buds or flowers, and when they set fruit; when specific species of insects, birds and other animals first return in the spring, or leave in the fall; when specific animal species mate, give birth, shed winter or summer coats, and other noticeable behaviors.

Keeping track of astronomical and phenological cycles was important to the Ancestral Pueblo people because it helped them decide when to plant or harvest certain food and medicinal plants, and when to hunt or fish for certain animals. It was also important for keeping a precise ceremonial calendar.

What observations of the natural world do you like to keep track of?

P is for Preservation

Preservation of the 900 year old walls of the Aztec West great house is an ongoing and never-ending process. The two primary methods used to preserve the ancient structures are backfill and stabilization. Backfill involves using sterile soil to either fill a room or create a berm next to a wall to prevent the wall(s) from collapsing. Stabilization involves scraping out the old mortar from in between the courses of stone, then replacing it with new mortar made from clay, sand and a stabilizing agent. There are examples of these technique throughout the site. You will also notice floor drains and other modern pipes used to keep the great house drained and dry. 900-700 years ago, when the Ancestral Pueblo people lived here, they had to conduct regular maintenance on the great house, too. Things like replacing ceiling beams, replastering walls, and tamping new floors over old ones happened regularly.

What kind of things do you do to maintain and preserve your house or place of business?

Q is for Quarry

When Ancestral Pueblo people came from Chaco to the Animas River Valley in the early 1100s, they built the Aztec West great house out of sandstone bricks. They were continuing the tradition of Chaco style architecture in the new outlier city that would become the center of the Chacoan culture.

The great houses in Chaco Canyon are built out of sandstone that was quarried right from the canyon walls. Sandstone is also common in the Aztec area, but is found slightly farther away. The bricks here were quarried from sandstone deposits that today are visible along the roads heading north towards the Colorado border. These bricks were cut and shaped at the quarry, and then had to be carried to the site. It took approximately 30 years to construct Aztec West.

Along the west wall of the great house there are three unusual, long, green stripes of stone. This greenish-black stone is called graywacke, and is a type of sandstone. The graywacke used in construction here was quarried about 3-4 miles away and carried back to the site.

Construction workers also quarried limestone from the mountains in Colorado to make the large, flat discs that the columns of the great kiva rested on as part of the foundation for that very important building.



R is for Roads

The Chacoans are known for their monumental architecture. In addition to the great houses and great kivas, they also constructed a vast network of roads. Here are some fun facts about Chacoan Roads:



- Segments of some of the roads are still visible from the air, but others are only detectable with lidar.
- Some of the roads are dozens or even hundreds of miles of long. The longest is the Great North Road, which starts just east of Pueblo Alto above Chaco Canyon, and runs due north to Kutz Canyon near Bloomfield, then continues to Aztec and beyond.
- The roads in Chaco Canyon average about 15 feet wide, and the ones leading toward outliers average about 30 feet wide. For reference, a modern road in a US neighborhood is a standard 28 feet wide.
- The roads are often bordered by berms and sometimes surfaced with caliche or other materials.
- In some places there are numerous parallel segments of roads.
- In other places there are ring roads that encompass multiple great houses.
- Some roads are aligned with solar events such as winter solstice.
- The roads don't swerve around obstacles such as cliffs or valleys, or conform to the landscape as modern roads do, but instead are very straight. When they change direction, it tends to be with sharp, angled turns rather than curves. When a road comes to a mesa or cliff face, it goes straight up, with stairs carved into the side of the mesa, then the road continues on its original alignment.
- Some roads are just short segments that point or lead toward important places or landscape features.
- Some road segments connect to places that were occupied in the past.
- The Chacoans didn't use the wheel, so they had no wheeled vehicles or carts. They had no beasts of burden. Their only method of transportation was walking.

Why did they build roads on such a monumental scale? Were the roads primarily for the transportation of people, goods and building materials? Were the roads symbolic or ceremonial? Depending on the road, it could be any or all of these possibilities.

S is for Sandals

The Ancestral Pueblo people who lived at Aztec Ruins and in Chaco Canyon made sandals from yucca fiber to protect their feet in the rugged high desert environment. Sturdy, everyday sandals were plaited from thick yucca leaves and could be quickly and easily replaced when they wore out.

People also made very fine twined sandals from yucca fiber. These sandals were made with 15-20 different types of weaves and were the most complex textiles ever produced by the Chacoan people. Some had colored designs twined into them, or a raised pattern on the bottom. The raised pattern would leave a distinct and unique footprint that would identify the wearer.



These sandals were probably used for special occasions and ceremonial purposes, not daily use, as the rough desert terrain would have destroyed them too quickly. However, all examples of this type of sandal found at Aztec and Chaco are quite worn out; it's possible that a person only got one pair of these special sandals in a lifetime.

Another unique feature of Chacoan sandals is the "toe jog." This little bump-out on the outside edge of the sandals was originally made to accommodate feet with six toes. The condition of having six toes is called polydactyly, and it appeared to be more common in Chaco Canyon than other places. It also seemed to be a revered trait, and that many leaders had polydactyly. In Chaco Canyon, there are petroglyphs representing these sandals, as well as feet with six toes, on the canyon walls, and even a preserved footprint from a six-toed foot! This shape of sandal became a symbol of the Chacoan culture and connected people to their ancestors as they wore the sandals with the toe jog whether they had polydactyly or not.

What do your shoes say about you?

T is for Tri-Wall Kiva

Tri-wall kivas, or multi-wall kivas to be more precise, are a special feature at Aztec Ruins NM. A multi-wall kiva is a round room or structure built with two, three, or even four concentric circular walls. Multi-wall kivas are rare throughout the southwest. There are only 10 known to exist, and seven of them are found at Aztec Ruins! There is one multi-wall kiva at Chaco, at Pueblo del Arroyo, but it is newer than those found here. This type of kiva seems to have been developed and popularized at Aztec Ruins.



Two examples of multi-wall kivas you can see at Aztec Ruins are the great kiva, which is a double-wall kiva, and the Hubbard tri-wall kiva. The great kiva's inner wall encloses the main space, and the outer wall, along with a series of perpendicular walls, creates a series of small rooms that ring the main space. These rooms are large enough to enter. Evidence of new walls being built, old walls being moved, and doors being sealed tells us these small rooms were repurposed over the course of time by the Ancestral Pueblo people.

The two concentric circles of rooms surrounding the main space of the Hubbard tri-wall are tiny, and don't connect to the central space as they do in the great kiva. The main space here was likely entered via a ladder through an opening in the roof. Other structures including a smaller single wall kiva adjoined the Hubbard tri-wall kiva. Most of this structure has been backfilled to stabilize the walls, which were thinner than those of the rest of the great house.

What were the small rooms used for? What was the purpose of the multi-walled kivas? Just like other types of structures and rooms, they may have each had a different function. Most likely multi-wall kivas were ceremonial spaces, and their locations and relationships to other buildings made them important symbols in the ritual landscape of the community.

U is for Utilitarian Objects

The Chacoan culture thrived in the San Juan Basin for hundreds of years. Ancestral Puebloan society was very sophisticated, and far beyond basic survival. They had time to create complex religious practices and social structures, beautiful art, and monumental structures. But everyday life required everyday items. The Ancestral Pueblo people's knowledge of the natural world was intimate and vast, and they were able to craft utilitarian objects to meet their needs from local materials. What they couldn't produce locally, they traded for.



What sort of everyday, useful items have you made?

V is for Vandalism

In the late 1800s, before the Aztec West great house was excavated and before archaeology was an established science, pot hunters, looters, and others wanting to explore the site broke through the walls. They removed many objects like pottery, tools and jewelry. They and early tourists also wrote or carved their names and the dates of their visits into the large wooden vigas that support the ceilings in numerous rooms throughout the site.



Today the doorways connecting the series of rooms visitors walk through along the north wall of the great house are not original; they were created by the Park Service where holes had been broken through the walls. And the 140-year-old inscriptions on the vigas are now considered historic and are being studied to learn more about early visitation patterns.

However, today, writing or carving into the beams, plaster, stones or any other part of the structures, breaking walls, or removing stones, wood or other objects, is considered vandalism.

Fortunately, visitors to Aztec Ruins love this place, and we rarely see vandalism. Please continue to help us take care of this and other cultural sites by not creating graffiti, and by staying on the trail and off the walls. Leaning, sitting, or climbing on the walls may not seem to have immediate effects, but over time it can cause serious damage. You can also help by leaving everything as you find it, and reporting any vandalism to a ranger.