

Turkeys in Ancient Southwestern Pueblos



Photo by Jack Ellis



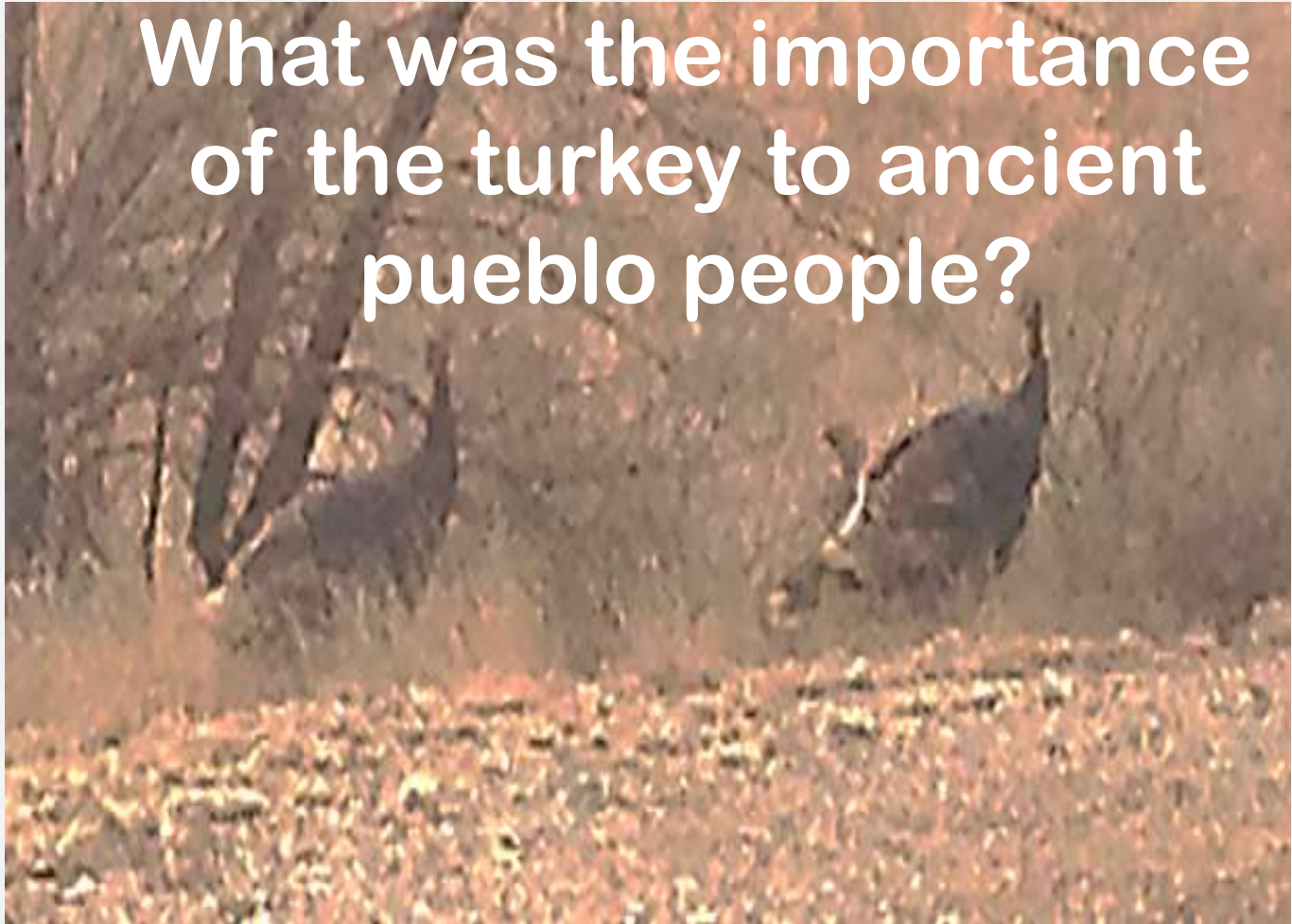
CORONADO
HISTORIC SITE



NEW MEXICO DEPARTMENT OF
CULTURAL AFFAIRS

Essential Question:

What was the importance of the turkey to ancient pueblo people?



Primary Source – Kuaua Excavation Field Notes

Investigator; J.C.Kelley

Ruin; Kuaua

Date; July 3, 1934

Section; Lummis

Rooms; 7, 8, 5, 9, & 10

Diary of Work

begin here

Excavation of Rooms 7 & 8 continued and completed. Room 7 revealed a very complex state of affairs. Throughout the fill, which consisted of sand, ashes, and fallen adobe, there occurred innumerable turkey bones and large potsherds, representing in some 7 or 8 groups a large portion of same pots being therefore probably restorable. One of said groups of sherds represented a practically complete pot. The pottery described varied, including both kitchen ware and several classes of decorated ware.. In two cases the turkey bones found represented intact and articulated skeletons, showing that in these cases at least the birds were not eaten. Several long bones were found, however, neatly severed near the middle, either as a results of eating of the birds or for manufacture of blanks for bone awls, one specimen thusly manufactured having been located in this room. In the southwest corner of the room there was found a bin which contained besides numerous bones and sherds one complete and one fragmentary egg, apparently turkey though rather small. This bin may represent a turkey nest. For the most part the bones and sherds were not found on the room floor but at varying levels throughout the fill. This room may have perhaps served as a turkey pin during various periods after its abandonment and during its gradual fill, the large fragments of pots having served according to said hypothesis as feed dishes for the fowls. Another bin, partially of stone and partially of adobe was found in the northeast corner. The north wall of this room and of eight to the east was in very bad condition, seemingly as much from poor workmanship as from the damages of time and the elements. Room 7 also produced in the fill three beads, one small turquoise, one olivella shell and one bone tubular type, and a very beautiful piece of Spanish porcelain.

Is This a Fact or an Opinion?

- o The excavation at Kuaua was done by WPA workers under the direction of Dr. Edgar L. Hewitt and other archaeologists.
- o The archaeologists believed that Francisco Vásquez de Coronado stayed at Kuaua in the winters of 1540 and 1541.
- o They did not find evidence to support that conclusion.
- o In the oldest part of the pueblo, a room was discovered that contained artifacts related to turkeys.
- o The archaeologists' theory was that this part of the pueblo was older and was unoccupied, so it was used as a pen for turkeys.

Primary Source: Wild Turkey Photo



Station A

Photo by Jack Ellis

Facts About Wild Turkeys

The modern day Wild Turkey is the largest game bird in North America and is the ancestor of the domestic turkey. Benjamin Franklin proposed it as our national bird instead of the eagle. Turkeys found in ancient pueblos were not the same species, but there were similarities.

- **Habitat:** Open forest, field edges, and wooded bottomlands.
- **Description of Adult Male:** Dark brown iridescent body, flight feathers striped with white. Blue and red bare-skinned head, with red throat wattle and a wart-like projection (caruncle) on forehead. Blackish tuft of hair-like fibers called a beard hangs in center of chest. Legs have spurs.
- **Description of Female and Immature Turkeys :** Smaller and duller in color than males. Females usually lack spurs and beard.
- **Diet:** Seeds, leaves, berries, acorns, and insects
- **Predators:** Bobcats, coyotes, raccoons, foxes, great horned owls, snakes.
- **Notes:** Males put on breeding displays with their tail fanned. Turkeys roost in trees at night. In winter, turkeys gather into flocks of up of 50 or more.

Primary Source Artifact: Turkey Petroglyph



Station B

Boca Negra Canyon, NM

(Photo by Barron Haley)

Facts About Petroglyphs

- Boca Negra Canyon, where this image was photographed, is part of Petroglyph National Monument. It is located west of Albuquerque, NM, and contains over 25,000 petroglyph images etched into the volcanic rock cliffs on the West Mesa.
- Petroglyphs are pecked or chipped into dark basalt rock which have lighter colored rock beneath, allowing the artist to create an image on the rock.
- The purpose of the drawings is unknown.
- Modern Native Americans identify these images as culturally important, so it is not always appropriate to discuss what they might mean to the people who created them.
- The people who created these images lived in the Rio Grande valley in adobe pueblos on both sides of the river, dating to about 1300-1650.
- These people relied on agriculture – mainly corn, beans and squash – and had domesticated turkeys and dogs.

Station B

Turkey Bone Flute



Station C

Photo by Sharon Walker

Facts About Turkey Bone Flutes

- o The ulna (wing) or leg bones of birds have been used to make flutes all over the world as far back as Neanderthal times
- o Purposes are from simple pleasure, such as a courting song, to ceremonial music
- o Kokopelli, a fertility image among pueblo people, is usually depicted as a flute player.
- o Pueblo farming people of the Southwest have been using flutes ceremonially for hundreds of years, to ask for rain, clouds, and successful crops.
- o Most of these flutes were rim-blown, and some were bone flutes or whistles with a few holes.

Turkey Tools



Station D

Photo by Sharon Walker

Facts About Pueblo Bone Tools

- o It was easy to use bird bones to create simple tools called awls.
- o Bone awls were used to make textiles, weave baskets, or leatherwork.
- o Though deer bones were often the material of choice, turkey bone tools are commonly excavated from pueblo sites.

Turkey Feathers:

Turkey Feather & Yucca Fiber Woven Blanket



Station E

Photo by Sharon Walker

Turkey Feathers: Recreated Weaving Process: Yucca Fiber and Turkey Feathers



Station E

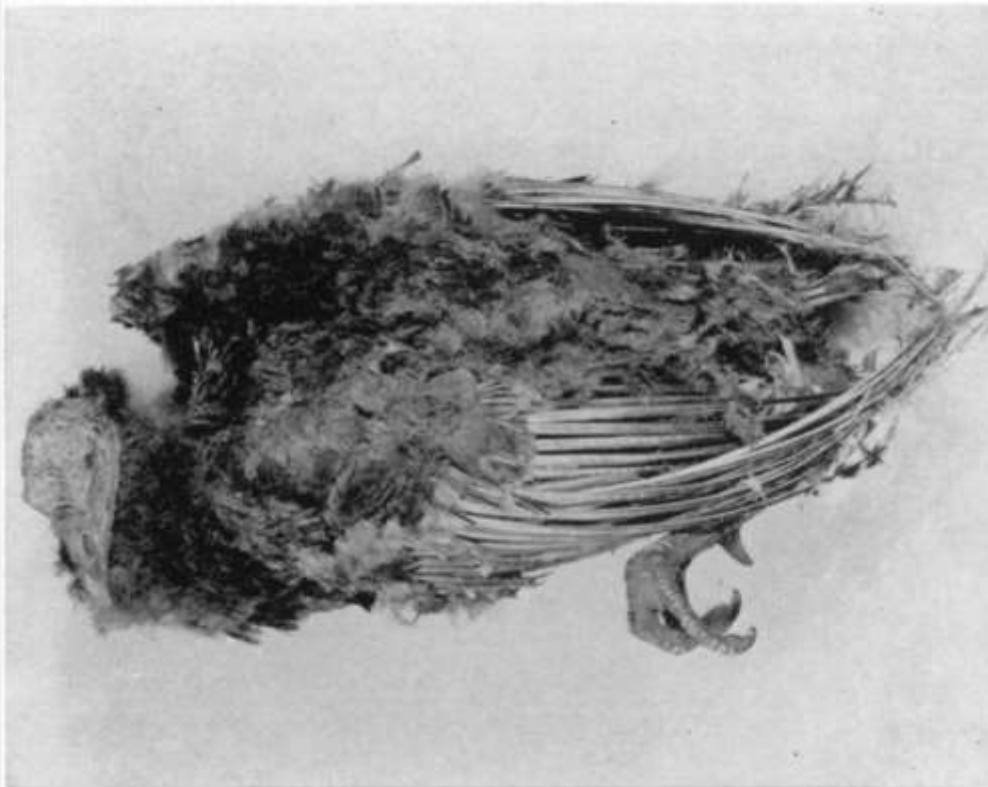
Photo by Sharon Walker

Turkey Feathers

- o Pueblo people domesticated turkeys to be used for their feathers, which were used to make turkey feather blankets.
- o Turkeys molt twice a year, 400-600 feathers per turkey.
- o It takes 10,000 feathers to make a feather blanket/wrap.
- o Blankets could last for 25 years and were very warm!
- o Early Pueblo people did not eat the turkeys they kept.
- o We know this because entire turkey skeletons were found in excavations.
- o Later Pueblo people did eat turkeys, as evidenced by cut marks on turkey bones.
- o Turkey feathers were often used in arrow making, along with other birds such as eagles or hawks.
- o The feathers, called fletching, provide balance for the arrow and to help create trajectory to enable it to reach a target.

Turkey Feathers

The Tularosa turkey's wing and tail feathers had been plucked.



Station E

Origin of Pueblo Turkeys



Excavated remains of a small domesticated turkey during Basketmaker II times - This bird was not eaten!

Introduction from East Mexico (Small domesticated turkey)

Introduction from the Eastern US (Larger domesticated turkey)

Station F

Hypotheses on Origin of Domestic Turkeys in Ancient America

The first evidence of turkey domestication in the Southwest is around 100BC. There is no evidence that turkeys lived in the Southwest before that time, so most archaeologists today do not think that the pueblo people domesticated turkeys here in the Southwest. They think that already-domesticated turkeys were brought in from two other areas.

Based on DNA investigation of turkey remains, the first domestic turkeys were small turkeys thought to have originated around Eastern Coastal Mexico.

Around 500 years later, a larger domestic breed began to be bred in this region. These larger turkeys, which are the variety excavated from the Rio Grande pueblos in the 1300-1600 time frame, seem to have come from the eastern United States.

Turkey Husbandry

Primary Source Artifacts:
Turkey Bones with Healed Fractures



Photo by Sharon Walker

Station G

Turkey Husbandry

Facts About Raising Turkeys

- Evidence that turkey husbandry existed in ancient pueblos is found in
 - 1) Trash included turkey dung
 - 2) Complete nests with unhatched eggs
 - 3) Immature turkey poults (chicks)
 - 4) Leg and wing bones that had been broken and healed, which would not exist in nature

Turkey Husbandry

Genetic analysis of ancient turkey bones and coprolites (fossilized turkey dung) from many different archaeological sites tells an interesting story!

The same variety of turkey was bred in the Southwest for over 1000 years (ca 200 BC-1600 AD) . Of the turkeys found in pueblo excavations, very few were like wild turkeys.

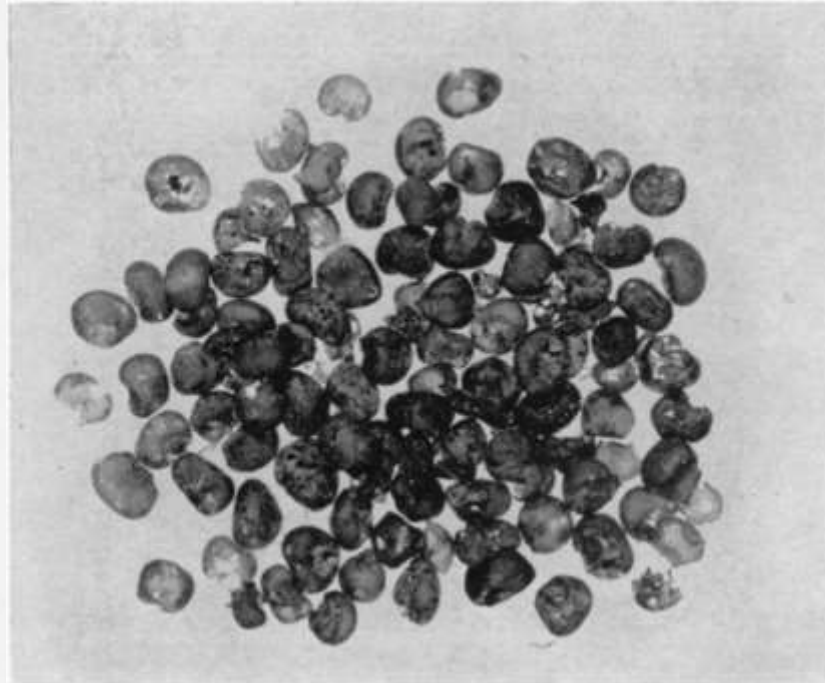
This domesticated population occurred over several thousand square miles, from Southern Arizona, New Mexico, and north into Utah. This area included several different cultural traditions including the Ancestral Puebloan (Anasazi), Salado, Mimbres, and Mogollon.

The fact that the turkeys were genetically the same indicates trade of turkeys between different cultural groups . People who did not belong to the same cultural groups or even speak the same language were breeding, caring for, and then trading domesticated turkeys which came from the same genetic lineage.

Reference:

F. Speller, Brian M. Kemp, Scott D. Wyatt, Cara Monroe, William D. Lipe, Ursula M. Arndt, and Dongya Y. Yang. **Ancient mitochondrial DNA analysis reveals complexity of indigenous North American turkey domestication** PNAS 2010 107 (7) 2807-2812; published ahead of print February 1, 2010, doi:10.1073/pnas.0909724107
<http://www.pnas.org/content/107/7/2807.full>

Turkey Food



Corn from the crop of the Tularosa turkey – excavated from a cave near Reserve, NM –
Estimated date 1100 AD

Station H

Facts about Turkey Food

- o The Tularosa turkey skeleton was found in a cave near Reserve, NM.
- o The analysis of turkey dung found on its feathers showed that it ate a diet of beans, a crop grown by ancient pueblo people.
- o When dissected, the turkey's crop (an extension of the esophagus used to temporarily store food) contained corn.
- o Turkey skeletons have been found to often show traces of amaranth, a fine grain grown in ancient pueblos.
- o These foods all indicate that the bird was domesticated, not wild, because it was fed by the pueblo people.

Turkey Pens

Civil Works Administration
Excavations, 1933–1934,
photographer unknown.
Archives of the Laboratory
of Anthropology/
Museum of Indian Arts and
Culture, No. 70.1/743.

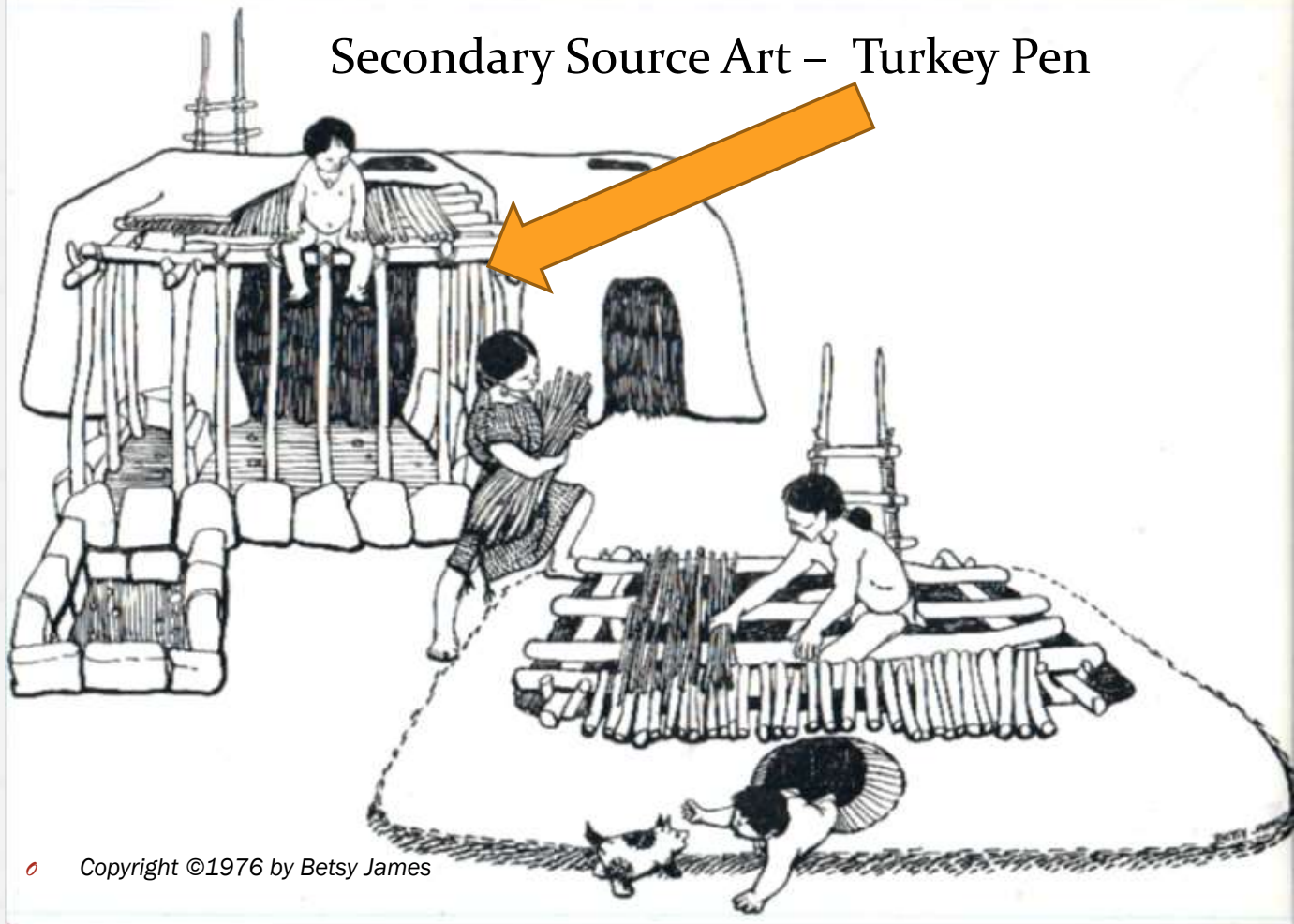


Station I

Facts About Turkey Pens

- The excavation of the plaza at Pindi Pueblo, (located in modern day Santa Fe) exposed the remains of several turkey pens, shown in this photo.
- “Pindi” is taken from the Tewa word for turkey, and the evidence of their domestication at this site gave the ancient pueblo its name.
- Turkey pens have also been found inside room blocks, such as at Kuaua Pueblo in Bernalillo. This was in the oldest part of the pueblo.
- Archaeologists have found prehistoric aviaries for other birds, such as macaws, in northern Mexico. This is evidence that early indigenous people traded across North and Mesoamerica.

Secondary Source Art – Turkey Pen



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Turkey Eggs

(Modern Wild Turkey Nest)



Station J

Facts About Turkey Eggs

- o Egg whites (albumen) may have been mixed with ash to create a shiny black paint used to paint wooden objects for ceremonial use, applied with paint brushes made of yucca
- o When albumen is combined with ground ochre, earth tone colors are produced, such as those found in the kiva murals at Kuaua in Bernalillo
- o Presence of eggshells in a nest is an indication of turkey husbandry in ancient pueblos.

Raising Turkeys in Pueblos

Modern Quotes

“When the Pueblos started farming, they must have soon found that, until the crops were harvested, the Indians had a battle on their hands to keep the turkeys out of the fields.”

“There were food scraps to be garnered from garbage piles, cracked corn to be found in and around grinding bins, food to be snatched from the hands of toddlers, and nice warm roofs to roost on in winter and take advantage of after snow storms. What more could a turkey desire?”

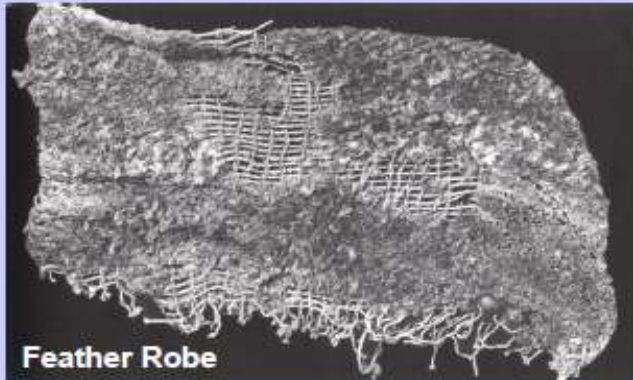
Pinkley concluded that it was this ... behavior on the part of the turkeys that led the Ancestral Puebloans to “corral them at night and herd them during the day.”

~ Jean M. Pinkley

Taylor, Tobi. “The Great Mesa Verde Turkey Experiment.”
Center for Desert Archaeology. Archaeology Southwest, Volume 21 No 1, Winter 2007.

Assessment

Archaeological Evidence for Turkey Use



Long house, Mesa Verde, CO



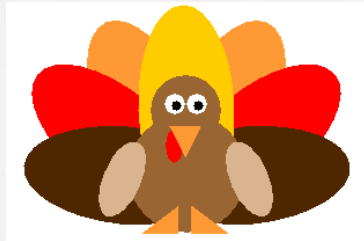
Kemp, Bill, and Scott Wyatt, Camilla Speller, William Lipe, Cara Monroe, and Dongya Yang. "Origins of Southwestern Domestic Turkey." Washington State University.

Document Based Question

Examining the four primary source pictures of artifacts discovered in Mesa Verde, what can you conclude about the importance of the turkey in ancient pueblo life?

Rubric Assessment

CATEGORY	4	3	2	1
ORGANIZATION	Information is well organized with a strong thesis, well-constructed supporting paragraphs, and a strong conclusion.	Information is organized with a good thesis, good supporting paragraphs, and a good conclusion.	Information is fairly organized; thesis is not strong and supporting paragraphs are not well-constructed. There may not be a conclusion.	Information is disorganized. There may be no evident thesis, no strong supporting paragraphs, and no conclusion.
QUALITY OF INFORMATION	Student made the best choices as to supporting evidence.	Student made good choices of supporting evidence.	Student selected some appropriate supporting evidence.	Supporting details are mostly missing or do not support the thesis.
AMOUNT OF INFORMATION	All required topics are addressed & supported with at least two sentences about each.	All required topics are addressed & supported with at least two sentences about each.	All required topics were addressed, some with only one sentence each.	One or more required topics were not addressed.
PUBLICATION & MECHANICS	Pride of authorship is evident in this publication. No obvious grammatical, spelling, or punctuation errors.	Pride of authorship is reflected in this document, but there are a few errors in grammar, punctuation, or spelling.	Some pride of authorship is evident in this document, but there are more than a few obvious errors in grammar, spelling, and punctuation.	This piece is really a rough draft and needs a final edit and republication. Many grammatical, spelling, and punctuation errors exist.
GRAPHIC ORGANIZER: Turkeys in Ancient Pueblos Document Analysis	Graphic organizer is well completed and uses excellent detail for one station, including SOAPS, Illustration, Notes & Quote, and Questions.	Graphic organizer is completed for one station, including SOAPS, Illustration, Notes & Quote, and Questions.	Graphic organizer is partially completed for one station, including at least three of the four required sections, SOAPS, Illustration, Notes & Quote, and Questions.	Graphic organizer is not completed for one station, including two or less of the four required sections.



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