

Plants, Wildlife and Habitats

Arizona's First People: How North American Colonization Changed the Native American
Landscape and Way of Life

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Introduction

I often look back to my childhood and see how it has formed who I am today. A descendent of Irish and German immigrants, I was raised on the outskirts of a very small town on the flat Kansas plains. I had five sisters and one brother. Counting my parents, there were nine of us living in a small, three bedroom, converted army barracks. My family grew most of our own food. We worked as a team in many ways, to grow food, to support each other, and to invent ways to entertain each other. I learned to love nature there, and the love and wonder of it has never left me.

I specifically recall one major impression I had while growing up. My older brother had collected Indian arrowheads he found over time, placing them carefully into a pattern within a picture frame. He never hung it up on the wall, but he explained to me that he had found the arrowheads along Sand Creek by searching for them after each rain. As I also wandered along Sand Creek, I thought about where these arrowheads had come from. I had read many books written by non-Natives about Native peoples living on the plains, but I had little real understanding of it. I thought the Indians were a thing of the past, not realizing they were not gone from the face of the earth even though they were gone from my sight.

In 2006, I was working to obtain my teaching degree from a satellite of Northern Arizona University. I had a Navajo friend that I attended classes with, and we conversed quite often. I was also working as a classroom aide at a charter school in the Prescott, Arizona, area. One day in class, the second-grade students began to ask, “What happened to the Indians? Where did they go?” They, too, had thought that the first peoples were long gone. I explained to them that they saw Native Americans in the community frequently since the Yavapai Reservation was located in Prescott. I wondered whether they simply did not recognize them. I invited my Navajo friend to come to speak to the class. A few of the students were surprised when he arrived wearing clothing like their own. Some of the boys had expected him to arrive in a breechcloth. He was asked if he lived in a teepee, if he had to hunt his food with a bow and arrow, and if he had killed many people. Many false conceptions were addressed and corrected that day.

As I considered what my reasoning was for writing this curriculum and why it was important, I found clarity in thinking about those past incidences. Much misinformation has been taught in the U.S. public-school system concerning Native American history, culture and current issues. Native peoples are alive and well, they are not a relic of the past. They have hopes and visions for their personal lives, the lives of their children, and also for the future of their Native Nations. Children need to be given access to this information so they can better understand Native peoples, their history and their lives today. It is equally important for Native American students to see themselves reflected and respected in their classrooms. As a schoolteacher, this is my responsibility, and I seek to address this in this curriculum unit.

Context

Flagstaff Unified School District (FUSD) is based in Flagstaff, Arizona. It is located southwest of the Navajo Nation. Leupp Elementary School is located on the Navajo Nation forty-six miles east of Flagstaff but is still one of the FUSD schools. A number of Leupp middle school and high

school students ride the bus from Leupp to Flagstaff every day in order to attend school. Additional students are bussed down from the Navajo Nation community of Cameron, Arizona, fifty-three miles north of Flagstaff to attend FUSD schools. According to the Arizona Department of Education, in 2020 -2021, 26% of the FUSD student population was Native American (AZ School Report, 2021).

In order to understand how students are faring in FUSD, it is useful to look at the 2021 AzMerit district test scores for all students in FUSD. The breakdown for Native American students in English Language Arts (ELA), shows that 73% of this group scored in the minimally proficient category, 17% scored partially proficient, 10% proficient and only 1% highly proficient. If we compare these numbers to the averaged combined scores of all students in the district, there is a large discrepancy. For all ethnicities combined, the scores in ELA are 53% minimally proficient, 18% partially proficient, 22% proficient and 7% highly proficient. The data for math scores is similarly notable with Native American students scoring 80% as minimally proficient, 16% partially proficient, 5% proficient and 0% highly proficient. For all ethnicities of students in FUSD combined, the average scores are 61% minimally proficient, 21% partially proficient, 14% proficient and 4% highly proficient. FUSD Native American students are scoring about 20% lower in both ELA and Math than the district average (“AZ School Report,” 2021). This data shows how important it is for the FUSD schools to be responsive to the educational needs of our Native student population. Native families and their children need to know they have the community’s and the school district’s full respect, an equal voice, and feel the affirmation of belonging within our school district. It is each teacher’s responsibility, and especially the responsibility of the school district as a whole, to create and maintain that strongly supportive environment.

Teachers in FUSD must ask themselves how they can design their curriculum to effectively engage Native American students. They must look at how their classrooms are designed, the learning time is shaped and whether their students see their lives and culture reflected and respected each day. Teachers must consider whether their methods are a good cultural match to the learning styles of all students and ensure that none are excluded.

The following curriculum is targeted for third grade social studies classes. Third graders have a lot of energy and are usually willing to try anything at least once. They are very sociable and need to have procedures taught for carrying out group work, so they stay on track. They also need to develop teamwork without one or more students dominating the others. Despite their enthusiasm for projects, the amount of time they are able to stay focused is limited. It is often wise to frequently move back and forth between more intense, less active learning activities and hands on or physically active tasks. Another good option to increase focus is to imbed learning into the use of manipulatives or other objects students can interact with.

The Covid-19 pandemic has created a teaching shift that requires more student time using technology. I spent some time this past year supervising a group of third grade students who were required to do their learning on technology for a thirty-minute time period daily. They were using a good program, and a fourth of them did not show resistance. The rest, however, begged to use scissors and glue and to do the lessons another way. They were tired of technology-based assignments and simply wanted to break the monotony of working alone and responding to a

screen. Students benefit by doing hands-on projects that strengthen important physical and social skills. For this reason, this curriculum is not loaded with technological applications.

Rationale

I am a Native American Support Teacher for elementary schools in the Flagstaff Unified School District. I work with kindergarten through fifth grade and split my time between two different schools. As part of my job, I arrange to go into teachers' classrooms and teach lessons to fill the gaps in curriculum concerning Native American studies. The current curriculum that FUSD uses does not completely match the state standards in this respect. Because of this, I have been approached by several grade levels of teachers asking if I could help them balance their social studies curriculum. Their three concerns are that first, the curriculum needs to be more diversified in representation, secondly, that additional content about Native people's culture and history be included, and thirdly, that the accuracy and balance of the viewpoints of the information be scrutinized and made to be more objective. They want the Native American students to recognize themselves and their culture in the lessons as validated and still thriving instead of viewed as some historical museum-like image.

I listened carefully to the comments from third grade teachers in the two FUSD schools where I work and then took the time to examine the third-grade curriculum that they shared with me. After looking over the curriculum carefully, I found that it had a distinct Western World vantage point in the presentation of vocabulary and that it assumes that ancient peoples disappeared, instead of researching what peoples' groups they joined with or who their modern descendants are. It gives the distinct feeling that Native peoples are a thing of the past. I plan to remedy this type of teaching in the following curriculum that I have designed for the third-grade classrooms that I will be teaching in FUSD.

Most upper-level elementary social studies curriculum was written in a certain pattern. The authors talk about Indigenous peoples crossing a frozen land bridge from Asia to enter North America while hunting game, then migrating southward. It then mentions some basic information about Indigenous culture, lifestyle and housing before shifting the focus to the European colonization of North America. This is a westernized version of American history that emphasizes Anglo history over all other groups. In the curriculum I have written for the Diné Institute, the story has been reframed by contrasting the cultural relationships of both Natives and Europeans with their management views toward the land. It tells the story of how the effects of their decisions about land management maintained or changed the landscape, flora and fauna, and consequentially, their way of life. This is a different way to make sense of historic events that is seldom approached with younger children, but one that provides an understandable explanation of historic progression. It provides a common thread for the string of historic events that ties the information together and brings us into a better understanding of our world today. I have discovered that when Native American students see their culture, history and government, and hear their stories and language presented in a respectful, positive way, they become not only engaged, but also the leaders in their classroom. Students that have previously remained quiet in the mixed ethnicity classroom will speak up with valuable input when the subject particularly sparks their interest, as it does when it falls within their zone of life experiences. Simple methods, such as using Native language or stories within the lessons leads to a higher level of

understanding and new connections for the class, while honoring the backgrounds of our Indigenous students. As a result, these students feel inspired to be leaders of education for their fellow classmates in this content area where they are far more knowledgeable. The benefits are not isolated to the classroom. The validation and increased confidence carry over into other areas of the students' lives.

The intent of this curriculum is not to go back in history to the original arrival of Native American peoples on the North American continent, which likely occurred in several different ways, but to start at a point more identifiable for third graders.

Both non-Native and Native students in Arizona are curious about what life was like for the Indigenous peoples of North America where the United States now exists. How did the Native peoples live before the arrival of Western influences with its explorers, colonists and settlers? There are many romanticized and fictional versions of what this may have looked like, but it is more appropriate to look at both solid, peer reviewed research and to consider oral histories carefully passed down by tribal groups from generation to generation. These tribal histories have been retold with the cultural expectation of adherence to detailed accuracy. Since third grade standards focus mainly on the history of Arizona Native American groups, this curriculum will limit the amount of information from the rest of North America to build a picture of how the Native and colonial groups' actions and viewpoints affected the ways of life of past and present Native Nations in Arizona today.

Content

The Brilliance of the Pre-historic Native American

The Hohokam

America is an ancient world, rather than the “new world” as it was called by explorers who had come from Europe. Indigenous domestication of plants in Central America began around 8500 B.C., specifically including the slow, but successful, development of corn, also called “maize” by Native peoples. This “corn,” as the colonists called it, eventually traveled northward through an extensive system of Indigenous trade centers (Dunbar-Ortiz, 2014). The Americas were the original continents where corn was developed, grown and spread extensively so that when the colonists arrived at Plymouth colony in 1620, they were soon introduced to and taught by local Natives how to plant the corn crop. Shortly thereafter, the colonists ate it at almost every meal (Nix, 2013). Columbus' voyages, starting in 1492 A.D., soon followed by the arrival of other explorers, provided the method to transport the seeds of this novel and valuable crop across the oceans where it was introduced as a new crop to other continents (Dunbar-Ortiz, 2014). Prior to the introduction of maize in Europe, “corn,” was a word that had been used by the Europeans to describe any grain, including barley, oats and wheat, so that even though maize was new to them as a crop, the word “corn” was not new to Europe at all (Academic, 2014). For our purposes, proceeding from this point, corn will mean only maize.

According to Dunbar-Ortiz, corn was, “a unique invention of the original agriculturalists. Unlike most grains, corn cannot grow wild and cannot exist without attentive human care” (Dunbar

Ortiz, 2014, p. 16). At least 2,000 years before the explorers arrived, North American Indigenous peoples had created impressive and advanced irrigation systems to water crops of corn along with beans and squash (Dunbar-Ortiz, 2014). One example of this was the Hohokam people who built a huge canal system in what is now the Sonoran Desert in and near Phoenix, Arizona. The Hohokam irrigated 110,000 acres in an area inhospitable for crops otherwise (Howard, 2014). The largest canal section recorded is 15 feet deep and 45 feet wide, with many of the system's other canals almost as large (Arizona Museum of Natural History, 2022). They were all expertly surveyed and built with a one or two foot drop for every mile, an engineering feat that prevented erosion from a too steep slope or the buildup of silt that a lesser slope would have caused (Howard, 2014). The building of these canals took expert planning and cooperation. All of this was done without the use of the heavy equipment and machinery we have today. They did not have domesticated animals that could be used to help move the dirt. Instead, they depended on human labor, baskets to carry dirt and hand-made tools made from rocks and sticks (Whitley & Ledbetter, 2011). Hohokam communities were strategically built along the canals. Thousands of Hohokam people had to work together to build the canals and to plant, irrigate and harvest the crops (Arizona Museum of Natural History, 2022). These canals and communities were all in place by 1300 A.D., two thousand years before Columbus' voyages began. Amazingly enough, many of these original Hohokam canals have been cleaned up and re-used to make up about 50% of the Phoenix area canal system that exists today (Howard, 2014).

What happened to the Hohokam? That was so long ago that we can only guess why they left over time. There had been a large population growth between 1100 and 1300, perhaps partly the result of some migration to the area from the drought-stricken Chaco Canyon area during the 1200's (Arizona Museum of Natural History, 2022). Then a major flood in 1358 caused extensive damage to the canal system, followed by twenty plus years of drought and more flooding. There was a gradual emigration out of the area by most of the Hohokam people between 1350 and 1450 A.D. It appears that the Hohokam may not have been able to support an increased population with decreased water resources in addition to a damaged canal system (Sheridan, 2022). But it is not accurate to say that the Hohokam are truly gone. Some of the groups who claim to be descendants of the Hohokam are still in Arizona today and are known as the O'odham, Papago, and Pima tribes. These peoples continue to celebrate and honor their heritage.

Chaco Canyon Ancestral Pueblos

The area in northwestern New Mexico, now known as Chaco Canyon, was the site of several ancient Indigenous civilizations. In 2900 B.C., long before the words "North America" existed and before anyone ever dreamed of the possibility of "the state of New Mexico," Chaco Canyon had nomadic peoples living in the area who existed by foraging for plants and wildlife ("Exploratorium," n.d.). There is evidence that three thousand years later, around 200 A.D., Indigenous peoples farmed the area and lived in "large villages of pit houses." Eventually, they also added small, single story, pueblo-type buildings with up to ten rooms near the pit houses (Oswald, 2018). About 850 A.D., things in the canyon changed dramatically. It seems unexpected that this high desert location would be chosen by a large Indigenous group for a permanent home due to its occasional bitterly cold, sub-zero, temperatures in the winter and sometimes sweltering, over 100 degrees temperatures in the summer. Additionally, the area had a meager average rainfall of 9 inches per year ("Exploratorium," n.d.). However, research, along

with the support of Native American oral histories, show that it was clearly chosen as a large population center and remained one for four hundred years, until 1250 A.D. (Oswald, 2018). This civilization was highly advanced in architecture, agricultural design and trade (U.S. Department of the Interior, 2017).

The appropriate name for this group of people arriving in 850 A.D. faces some controversy today. Many existing textbooks and articles call the group the Anasazi. The origin of this term is the Navajo language and means “ancient enemy.” Today’s descendants of the people called Anasazi by past historians find the term to be disrespectful and prefer the terms “Ancestral Puebloans” and alternately, “Ancestral Pueblo.” There has been a movement toward accepting this change of names in order to honor our modern Puebloan people (Indian Pueblo Cultural Center, 2020).

Around 850 A.D., the pre-historic Ancestral Puebloan people began building exceptional structures in Chaco Canyon that had never been built before in North America and was never matched on the continent again until historic times (Oswald, 2018). They built twelve huge, stone buildings at Chaco Canyon, called “great houses.” The largest of these was four to five stories high and had almost 700 rooms, while the smallest great houses consisted of 34-36 ground floor rooms and were only two to three stories high (U.S. Department of the Interior, 2017; University of Virginia, 2010). These structures could be compared to modern apartment building communities with some rooms for living spaces and others for storage or other uses. Each great house also had anywhere from 1 to 32 kivas within its walls or in its courtyards for religious meetings. Most of these great houses’ exterior walls were laid out in a D shape, while several others had C shaped, oval or rectangular exteriors (University of Virginia, 2010). The Puebloans planned ahead to make the exterior walls in these specified shapes and preplanned for the buildings to be multiple stories tall. They purposefully constructed the lower-level walls with a wide base of sandstone sometimes a meter thick to prepare for the weight of a multistory building. As they built upward, they narrowed the width of the masonry walls to reduce the weight and prevent collapse of the structures. The rooms were designed to have more space than other structures of the time period. Workers used tools made of stone to cut sandstone from canyon and cliff walls to provide stone building materials and then moved these stones to the construction sites without the benefit of pack animals or wheels. Mortar made of mud was used to add strength and fill the cracks in the walls. On the outside of the mortar, smaller stones were applied to make an attractive patterned exterior, something believed not to have been done previously (Oswald, 2018). Wood was also used in the construction of these great houses for beams, roofs and floors, but the number of trees in the area was limited. Oswald explains that once the available wood in the area was gone,

“Chacoans traveled on foot 80 kilometers to coniferous forests to the south and to the west, cutting down trees then peeling and leaving them to dry for an extended period to reduce weight, before returning and carrying each back to the canyon. This was no small task considering that the carrying of each tree would have required a several days' journey by a team of people and that more than 200,000 trees were used over the three centuries of construction...” (Oswald, 2018, p. 4).

Not only were the Ancestral Puebloans master builders, but they were also advanced

astronomers. Their great houses were often laid out perfectly aligned to the four cardinal directions of north, south, east and west, and some were built in alignment with the summer and winter solstices. One house was built aligned with the eight and a half year cycle of the moon during which the moon appears to pause once during each cycle. Casa Rinconada, a huge kiva, has several examples of the Puebloan's expert astronomy. It has a window through which the morning sunlight passes during the day of summer solstice and precisely hits a specific, unusually placed niche on the opposite wall. In addition, on the days that mark both equinoxes, light enters exactly at the center of either the east or west kiva door of Casa Rinconada and exits perfectly through the center of the opposite door. At other Chaco Canyon locations, there are several petroglyphs that also mark the solstice and equinox with sun daggers, meaning narrow, downward pointing, triangular shafts of light projected onto the center of a carefully placed spiral, that were probably used to time religious ceremonies and planting of crops (Oswald, 2018). Years of careful observations were required to accomplish the astronomical knowledge to design these markers of time.

The Ancestral Puebloans built over 400 miles worth of massive roads, some of which were 30 feet wide. Some roads led from the great houses of Chaco Canyon to the more than 150 other great houses and additional structures outside of the canyon. There were other roads that seemed to lead nowhere. It has often been suggested that these roads were built for spiritually symbolic purposes. All the roads were remarkably straight. To make these roads, laborers leveled the land by adding or removing dirt, except for the areas where they ascended cliffs or mesas. In those cases, wide steps were installed instead of going around these landmarks (Oswald, 2018). In order to hasten communication between different areas of the region, there were lines of sight between structures on the mesa tops and some of the great houses so that reflections of light or fires could be used to send signals (Exploratorium, n.d.).

The Chacoans also skillfully built terraces for crops and irrigation systems consisting of small washes draining from the mesa top into wells and earthen dams, and then into canals approximately 15 feet wide and 4 feet deep. The ends of the canals were fitted with gates that were used to divert the water either onto fields or into small reservoirs for future use. There were four reservoirs, all of which were about 90 feet across and 12 feet deep. Many of these waterways and reservoirs were lined with stone slabs or masonry work to prevent the loss of water through absorption into the ground (Mays, 2015). Water was limited in this arid environment, so farmers used dry farming methods to raise crops of corn, beans and squash. Even with this agricultural set-up, the amount of crop production was limited, so some food had to be imported from outside of Chaco Canyon for its inhabitants (Oswald, 2018).

What purpose did this group of great houses and kivas serve in the area? Archaeologists have determined that the permanent population of Chaco Canyon itself was never more than a few thousand people (U.S. Department of Interior, 2017). More than 200 other great houses and kivas, smaller in size, but in the same design as those built in Chaco, were built outside of the canyon covering an area larger than England (Oswald, 2018). It is thought that Chaco Canyon was the center for area administrative decision making, religious activities, astronomy, and a thriving major trade business. Thousands of people at a time would arrive from outside of the canyon, traveling in for religious and trade events, and were shown hospitality in the numerous rooms of the great houses, some of which were also used for storage, and a few rooms within

which deceased persons of high status were buried (Oswald, 2018). The largest great house, Pueblo Bonita, which covered 3 acres with its nearly 700 rooms and 40 kivas, was the main hub for all of the activities that occurred in Chaco Canyon (U.S. Department of Interior, 2017). Traders brought in goods from as far away as the Gulf of Mexico, the Pacific Ocean and Central America. Items for trade included pottery from surrounding areas and obsidian and chert rocks to make quality knives and projectile points. Turquoise for jewelry was brought in from distant sites to trade. Trumpets made from ocean seashells and other shells used for making jewelry were popular trade items. Traders arriving from Mexico and Central America provided cocoa beans for making a chocolate drink, copper and copper bells as well as live macaws and parrots, whose feathers were highly prized (U.S. Department of Interior, 2017; Oswald, 2018).

What happened to the Anasazi? About 1150 A.D. the population of Chaco Canyon abruptly left. Historians can only hypothesize the reasons for their departure. Perhaps they left due to drought. Perhaps the administrative structure fell apart from within. There is evidence that before leaving that they sealed off doorways and set fires in kivas to finalize their departure (Oswald, 2018). The people leaving Chaco Canyon went in multiple directions, joining other Indigenous peoples where they traveled. For example, there was a recorded population increase at that same time period at the Hohokam villages near where Phoenix, Arizona, is today. Indigenous populations at the time also increased at Mesa Verde and in the Chuska Mountains (“Exploratorium,” n.d.). Today, many of their descendants still live in the Southwest. Their descendants are today’s twenty pueblo tribes that live in what are now Arizona and New Mexico. Some of these are the Hopi, Zuni, Acoma, Taos and Laguna tribes (“The 19 Pueblos of New Mexico,” 2020).

Navajo Oral History Story about Chaco Canyon

Although the Navajo people visited bustling Chaco Canyon and traded in the area, they had already settled into an area bounded by what are known as their four sacred mountains. There are a number of Native American stories that tell about things that happened at Chaco Canyon. One Navajo oral story recorded in written form by Paul G. Zolbrod has been summarized here for the convenience of the reader. The teacher may want to read or retell this version to their students. Because the word “Anasazi” is a Navajo word, it was left unchanged for this summarization. This story that explains what happened to the Ancestral Puebloans or Anasazi is contained in the Navajo creation story.

It is said that the Gambling God came to Chaco Canyon and, through his skills, bet against the Anasazi and surrounding peoples and won many of the area’s men, women and children as his own possession. Their relatives agreed to build the great buildings of Chaco for the gambler as a trade to get their relatives back. However, the Navajo people only observed what was happening but did not gamble with him, so none of their own people were won by the Gambling God. The greatest treasure the gambler had obtained through his gambling skills were two great shells. The Sun wanted these shells, but the gambler would not give them to him, so the Sun became very angry. The Holy People decided to meet. At the meeting, Wind wanted to go to the gambler’s home to find out what he was thinking, but it was decided that the gambler would feel his movement, so Darkness was sent instead because he would not be noticed. While there, Darkness listened to the thoughts of Gambling God and reported back to the Holy People. After assessing Gambling God’s thoughts, the Holy People decided on ways to work together to

trick the gambler and win at every game. During the 13-chip game, the Bat would catch all of the chips thrown into the air and exchange them for his own before letting any chips drop back down. During the hoop game, the Great Snake would disguise himself as a hoop and continue to roll further than the hoop of the gambler. Before the tree felling game, the Gopher would gnaw the roots of a great tree away so that the tree would fall easily when pushed. During the ball hitting game, the Woodpecker would curl up inside a ball and then fly with it once it was hit to make it go the furthest.

Wind was sent to Gambling God's home. Gambling God saw Wind and asked him to gamble, but he refused until finally the gambler was willing to bet anything to entice him to play. With the help of the Holy People, Wind won the chip game. Next, he won the hoop game. Following that, he won the tree pushing game and, lastly, he won the ball game. By this time, Gambling God had bet and lost every possession he had, including the people he had won, his wives and even his own body. He was told he had no longer had the right to act as though he was a god. This made him angry.

Gambling God then threatened everyone, so Wind's father, Growling God, made the gambler stand on a bow and shot him like an arrow far into the sky. There, Gambling God met another god who listened to his story and felt sorry for the gambler. This god created sheep and other domestic animals for the gambler. He created a new people for him to rule over. He then sent the gambler to Old Mexico, far away from Chaco Canyon, where he ruled the Mexican people that had been created for him to rule. He eventually died there.

Soon after the gambler had been shot into the sky, the Navajo people and others left Chaco Canyon, abandoning it. This is the explanation contained within the Navajo creation story (Zolbrod, 2002).

North American Indigenous Population Characteristics

The estimated number of Indigenous peoples in North America in pre-Columbian times varies greatly. The one estimate that seems to be most widely accepted is that of Henry Dobyns, who estimated a Native American population north of Mexico of between 9.8 to 12.25 million prior to 1492. This large population had ancestors who had been located in North America for more than 100 centuries. Taking their land management for sustained living into consideration, the land was clearly not the vast, untouched wilderness it had been portrayed to be by foreign nations seeking to "settle" it in order to claim it as their own territory (Flores, 1999). This pre-Columbian, Indigenous population was spread out throughout the continent and each Indigenous group had adjusted to the natural environment that predated them in their location. They modified their surroundings as necessary to live a sustainable, healthy life. When conflicts arose between peoples or the environment could no longer sustain them due to drought, volcanic activity or other natural occurrences, they were able to move on to other areas. They didn't possess the land. The land took care of them, and they, in turn, took care of the land. The earth was a living entity, as were the cosmos, the water, the mountains, the plants and animals. They were all relatives that were treated with respect. This Indigenous belief system necessitated respect for those non-human relatives whose sacrifices and provisions permitted and assisted human existence. Respect was shown through Indigenous prayers of thankfulness, reflection on living in continual balance and not being wasteful of the sacrifices of those providing entities (Lewis, 1995). Native people

observed nature, sought to understand it and adjusted to the lessons it taught. They embedded these lessons in oral stories and daily instruction passed down through generations. This compounded information was vital for the survival of the next generation.

The Native people that lived across North America had changed the face of the earth while still maintaining a balance for earth's other inhabitants in the plant and animal world. Survival was dependent upon maintaining this balance. Theirs was a way of life that reached for "maximum sustained yield rather than maximum production." The result was, "They shaped their environments which, in turn, shaped them" (Lewis, 1995, p. 439).

Pre-Historic and Historic Plains Indians

The longest continuous subsistence lifestyle in North America was connected to hunting bison on the central plains (Flores, 1999). When the Spanish explorer Coronado arrived on the Kansas plains in the 1540's, one single group, the Wichita tribal people, had a population near 100,000. There were many more Native groups residing on the plains as well. Their ancestors had hunted on these same plains for 10,000 years (Flores, 1999).

These plains people brought changes to the land. They had transferred plant species to new areas, such as corn, squash, beans and medicinal plants to plant in their fields. They participated in managing the land through use of fire, which helped control the movement of bison, controlled the mosquito population, extended the previous boundaries of the plains further eastward, and encouraged the fresh growth of useful fire-resistant plant species as well as other greatly desired results (Flores, 1999). The health and size of the bison population depended on the health of the plains, which was aided by Indigenous fire management techniques. Some plains Indians' taboos did not allow the hunting of beaver, which ensured ponds were present during droughts. Even the population numbers of smaller game animals present in certain areas was the result of purposeful local hunting patterns (Flores, 1999).

Due to the tall grasses that grew on the North American plains, bison were able to graze widely, resulting in a population "In the tens of millions three hundred years ago" (Sanderson et al., 2008, p 253). Plains tribes depended on these bison extensively for everyday life due to historic generations of human adaptation to their use. Bison provided their primary nourishment, clothing, bedding, covers for teepees and even everyday tools (Feir et al., 2017). With the arrival of European settlers, bison populations slowly declined until the late 1800's when the herds were quickly slaughtered to near extinction. The high nutritional value of the buffalo meat was gone. The result was that the plains peoples, "Once the tallest people in the world, the generations of bison-dependent people born after the slaughter were among the shortest" (Feir et al., 2017). Thus, as the bison population was decimated, so was the well-being of the Plains peoples. It should be noted that the plains bison were mistakenly called buffalo by early explorers who had seen true buffalo on their own continents, and the designation has held through centuries. They are a very close relative, so the words are often used interchangeably by non-scientists. Two differences are that bison have much smaller horns than buffalo, and bison also have a hump between their shoulders that buffalo do not have (Tikkanen, 2022).

It is lesser known that archaeological records determine there was a small, continuous bison population that extended into Arizona near the Grand Canyon and over much of the Colorado

Plateau over the last 11,000 years. Native American traditional knowledge indicates the population was high enough that there was one group of the Navajo tribe that followed the herd eastward of the San Francisco Peaks in a way similar to that of the plains peoples. Consider the following quote:

A Navajo story of origin references bison that once ranged between the four sacred mountains...A band of Diné (The People) used to follow the herd around for food, shelter, and medicine. Bison were considered to be sacred because they were the main livelihood for the Diné. Reference was made to San Francisco Peak, near present-day Flagstaff, Arizona, as the western boundary for this herd (Plumb & McMullen, 2018 p. 42).

European Philosophy of Relationship with Nature

The philosophy of the European explorers and colonizers was largely influenced by religious ideals. The Biblical understanding of the consequences of the original sin, that man must toil on the land to raise crops by the sweat of his brow, was a basic societal principle that was understood and practiced in Europe in the 1400's. Land ownership was of major importance to Europeans. This philosophy would make it very difficult for European explorers and colonists to recognize the methods of land management and understand the Indigenous cultural belief system of human relationships to nature and earth utilized by Native Americans, which contrasted greatly with their own (Mahony, & Endfield, 2018).

Columbus began his discoveries in 1492, a turning point for the Indigenous inhabitants of the Americas. Upon his return to Spain, and when the announcement reached Pope Alexander VI, the pope made a 1493 papal bull, or decree, that has since been called the Doctrine of Discovery. In this decree, the right was granted for European nations who discovered land inhabited by heathens to claim this land as their own and for the inhabitants to become their subjects (National Institutes of Health, n.d.).

In the 1400's, environmental and earth sciences were in a very early stage in Europe. There was an expectation that latitude should determine climate. England, as well as France and Spain had mild climates. However, the east coast of North America displayed hot summers and harsh winters (White, 2015). Instead of understanding the differences between continental climates vs. maritime climates, theories were developed to try to explain the unexpected phenomena (White, 2015). One theory proposed by the leading scientific community, the Royal Society, was that England's pleasing climate was due to the advanced state of the European society that had cultivated their land and cut down most of their forests, creating the mild climate. It was suggested that cutting down forests in North America would considerably improve the climate. The North American colonies became an outdoor laboratory for trying out many European environmental ideas including experimenting in subduing the land from its "wild state" to a cultivated one (Mahony & Endfield, 2018).

As colonists arrived from Europe, they learned skills from the Native peoples, but they also retained their own cultural beliefs and philosophies. Land ownership was a basic goal. Many of the colonists had not been able to own land in Europe and had traveled to the New World to acquire some measure of wealth. To them, the land appeared to be plentiful and free for the

taking (Dunbar-Ortiz 2014). The colonists believed the land was theirs to make productive. The Native peoples' understanding of territorial areas without any land ownership, was a foreign idea to the colonists. The colonists were also not familiar with the idea of hunting only what was needed for subsistence or of utilizing every part of the animal's body to prevent waste and to show the animal respect. They expected to harvest the most profitable animal parts from the most possible animals to be shipped back to Europe to be sold to increase their wealth.

Soon, forested areas were cleared by groups of colonists to build communities of homes, to send wood back to tree deficient areas of Europe, and to enable the planting of large fields of agricultural crops. Fences were erected to define property lines. Trappers hunted animals for their fur, not their meat. Marshes were drained. More settlers arrived and more changes occurred. The settlers wanted to own the land the Native peoples had lived on (Dunbar-Ortiz 2014). Battles and wars were fought with alliances of, and between, groups of European soldiers, settlers and tribes. The Native peoples repeatedly were forced to move from their traditional homelands to new territories. As they moved westward, so did the settlers. The results were some forced relocation marches such as the Long Walk and the Trail of Tears. Treaties were made and the Native Americans were required to move onto reservations and end hunting off the reservations allotted to them (History.com, 2017). The buffalo were purposely slaughtered to control the Natives and to reduce hazards for railroad trains (Feir et al., 2017). Native American lands in the United States today have been reduced to only 2 percent of the lands they originally occupied (Encyclopedia Britannica, inc., 2022).

Changes Leading to Today

As non-Natives took over occupation of the land, the way the land was managed changed. It was bought and sold. Farms, ranches and homes sprawled across the land. Former grasslands were plowed and planted. Domestic livestock was introduced where the bison once roamed, and the pastures were fenced in. Roads and dams were built. Forests were often clear cut to create farmland until only a small percentage of the original uncut forest remains. Many forested areas and trees have been replanted manually, but the quality of current habitat without the wider naturally produced varieties of trees per location has been altered, making it inhospitable for some former plants and animals (Alex, 2020). The face of the land changed and the freedom of movement for wildlife was restricted by new barriers. Wildlife, once plentiful, began to become scarcer due to loss of habitat, hunting and migration barriers (National Wildlife Federation, n.d.). The reduction or disappearance of numerous wild animals from their former habitats can be seen as a pattern of reduction and depletion moving from the east coast of the nation across to the left side in the same pattern that Native Americans' land was reduced over the last 250 years. Plants once Native to areas decreased and plants non-Native to areas spread to areas they had not existed before. Today we can look at maps of historical and present-day ranges to see these corresponding patterns of change.

How has this changed life for Native Americans? The treaty system and removal to reservations reduced and restricted their land area. In many cases, they were given what was considered undesirable land, unwanted by settlers, far from their original homeland and sacred lands (History.com, 2017). They had to learn to live without access to their previous hunting ranges and food sources (Feir et al., 2017). Their ability to follow buffalo herds ended as well, when the herds were purposely killed, their meat rotting on the plains. Numerous tribes faced starvation

times (Feir et al., 2017). Reduction in the number of tribal members and forced assimilation led to the loss of many Native languages.

Throughout all of this, Native Americans have fought to maintain their languages, maintain or revive their cultures, and some have regained some of their homelands through the legal system. Native Americans are not a relic of the past, but instead are a culture in today's world. Native peoples today are a vital part of the United States. They are sovereign nations located within the nation of the United States, a homeland that was originally, solely their own.

Teaching Strategies

Student Mixing Strategies for Quick Conversations or Trading Cards

Students stand in two straight parallel lines with an equal number of students in each line. They should bring their trading cards with them to the line. They will face the corresponding person across from them in the other line and identify them as their partner. The partners will work together to quickly discuss and make possible trades. They may choose to trade a card with another person or multiple cards or decide not to trade at all. Both must agree for a trade to occur. They will have thirty seconds to accomplish this. At that time, the first person from the head of one line goes to the other end of the line. This will make new partner sets and the 30 seconds of trading begins again until all students have partnered with all of the people in the other group. At this point, the two separate lines make their own circle and hold any cards they still want to trade outward so the other students can see them. Offers to trade those cards can be made between individuals, but both must agree for a trade to occur.

An alternate method would be to start with two circles, an inside circle facing outward and an outside circle facing inward with an equal number of students in each group so that each student from the inside circle partners with one student from the outside circle. After each 30 seconds of possible trading, the students on the outside rotate one position to the right, stopping at the next inner circle student and trading if both agree until they have partnered with every student on the inside circle. At this point, the inside circle turns to face inward and the outside circle separates from the inside circle and walks to a new location. They form a new circle facing inward as well. Both circles show any cards they would still like to trade so that other students in the circle can see them. Offers to trade those cards can be made between individuals, but both must agree for a trade to occur.

Make the Story Come Alive Through Video Production

Students draw pictures to illustrate parts of a Native oral history story. They hang the illustrations in story order on the classroom wall or down the hallway. They can make a video of the pictures by walking down the hall pointing at the correct pictures while a narrator walks with them while reading or telling the story in the background. An alternate way to do this is to upload the drawings into technology files and use them to illustrate while a storyteller speaks in the background.

Circle Time for Debriefing

After each daily session of learning, have the students sit in a circle. Set expectations for the session and set expectations for the use of a talking stick. Explain to the students that this is the time for making comments about what they have been learning. They can comment on something they learned that surprised them, something that they liked about the learning time, something that didn't work well this time and might be able to be refined, or an experience or comment related to the day's work. Have an item on hand to use as a "talking stick" The item will be passed completely around the circle once, handed from one student to the next. Only the student holding the stick should be talking. Students are allowed to pass on their turn. Not allowing interruptions encourages respect for the speaker and allows all students a chance to speak.

Classroom Activities

Make Learning Centers Run by Hohokam Cultural Research Representatives

Students conduct some easy research and build centers in small groups. Centers could be 1. Corn, beans and squash importance center 2. How to build a canal and tools used 3. How to survive as a society in the desert, or desert homes 4. Maps of the canals and pictures of canals in Phoenix area today made from the 2,000 year old hand dug canals. 5. Games played by the Hohokam people. 6. Descendants of the Hohokam today.

Invite in another classroom of students to divide into the same number of groups as there are centers. Have the groups circulate around the host classroom and have the students representing each center present their center's information to the visiting class.

Navajo Language Lessons

Find *Plants of the Navajo Nation: Language Word Part Lessons* in the appendix to this curriculum to do these teachings. There is a small section for grasses, trees and flowering plants. Each section has the English word for the plant, the Navajo word for the plant, and the Navajo words broken down into parts explaining each word part's meaning is.

Print one copy of grass plants per group of students of the plant words from the from the attachment. Cut them into individual plants, keeping the English, Navajo and word parts together as one plant. Glue the individual grasses information onto separate notecards. Do an online search to find a color picture for each plant listed. Print those colored pictures small enough for the students to glue onto the back of the index cards later.

Put the children into groups of four with one set of the five grasses index cards per group and one set of pictures of all five grasses that are not yet glued on. Have the students try to match the correct picture to the index card, using the names and word parts as clues for meaning. When each individual group has checked with the teacher and is correct, they may glue the correct pictures on the back of the index cards.

The class will come together as one group. The teacher will go over the English word, Navajo word, the meaning and pronunciations of the word parts and their associated picture. For grass, the students will be expected to learn and remember the Navajo word tł'oh, meaning grass.

Use the same process at two different times for the trees and for the flowering plants.

Trading Center Cards or objects for Chaco Canyon

Use either the Trading Cards and worksheet already created for you in the appendix of the curriculum or make your own. Alternatively, you could gather and use physical objects to trade. All of the pictures on the cards are from government sources, so are free from copyright. Many of them are items that were actually found in Chaco Canyon. Make one worksheet copy for each student. Make color copies of all of the trading cards. Make more than one copy of those cards you think would commonly appear in the Chaco Canyon marketplace and print an appropriate number of cards for the number of students that will be trading for goods. I would recommend three cards per student, no more.

Introduce the worksheet. Have the students write down a one or two sentence description of what kind of person they are representing in Chaco Canyon. Students will write down what kinds of goods they would need to possess as that person.

Mix up the trading cards and hand out the cards randomly without student choice. The goal is to obtain items that are useful for them to have for the type of person they chose to be. Follow the directions in the *Teaching Strategies* section of the curriculum labeled *Student Mixing Strategies for Conversations or Trading Cards*.

At the end of the time, have them return to their seats and glue their trading cards still in their hands onto their worksheet. They should write a sentence beside each trading card object about what they will do with that item. They might use it themselves in their job or personal life, give it as a gift or even keep it to trade on another day.

Navajo Oral History Story Video Production

Read the Navajo Oral History Story about Chaco Canyon to the children from the curriculum. Have them each draw one scene from the story to put in order. Put the pictures in order and read the story to them again. Scenes from the story could be 1. Gambling God comes to Chaco Canyon. 2. Gambling God asks if anyone wants to play a gambling game. 3. The Navajo watch others gamble. 4. The gambler wins people and so much more. 5. The relatives agree to work for Gambling God to get their family members free again. 6. The relatives work to build great houses. 7. The Sun is angry because the gambler will not give him the two great shells. 8. Darkness goes to Gambling God's house to find out what he thinks. 9. Wind is sent to Gambling God's house and refuses to gamble. 10. Gambling God becomes willing to bet anything to get Wind to gamble. 11. Bat helps Wind win the chip game by catching the chips and exchanging them for the ones that will win before dropping them down again. 12. Great Snake helps Wind win the hoop game by becoming a hoop that rolls the furthest. 13. Gopher helps Wind win by chewing the roots of a great tree so the tree will fall easily when pushed. 14. Woodpecker helps Wind win the ball game by curling up inside the ball and flying with it the furthest. 15. Wind is declared the winner. 16. Wind won back everything the people had lost. 17. Wind tells Gambling God he can no longer tell people what to do. 18. Gambling God is angry and threatens everyone. 19. Growling God makes Gambling God stand on a large bow like an arrow. 20. Gambling God

gets shot far away. 21. The Gambling God meets a god who feels sorry for him. 22. The god who felt sorry for him makes animals and people for Gambling God. 23. The god tells Gambling God to go back to earth and rule the new people that were made. 24. Gambling God finally dies in Mexico.

In addition, several students can make “What we Learned” from the story pictures. 1. We learned not to gamble. 2. We learned to help each other. 3. We learned that people built the large buildings at Chaco Canyon.

After this, the students can put their pictures up in order on the wall or upload their pictures and make a video of the story following the process *Make the Story Come Alive Through Video Production* in the Teaching Strategies section of the curriculum.

Historic and Current Range Maps Activity

Print the historic and current locations of Native American tribes listed under *Teacher Resources* or connect these to students’ classroom technology. Print the historic range and current range maps of plants and animals listed under *Teacher Resources* or connect them to the students’ classroom technology. You may use these maps or any other you choose to find on your own.

Have the students examine the loss of lands maps by Native Americans. Explain to them the information from the curriculum under the *Changes Leading to Today* section about how changes in land management changed habitats. Distribute the maps of plants and animals to students via technology or printed versions showing how the plant and animal habitats have changed over time. Have the students be prepared to present to the entire class how their organism’s range has changed and why they think that happened. Another option would be for individuals to draw a picture of pre-habitat loss and post-habitat loss for an animal and explain in writing what caused the change.

At the end of the session, have the student groups suggest solutions that could begin to correct the habitat losses for the animals on the maps or prevent further habitat losses for organisms not on the maps.

Student Assessment Plan

Note: For both pre and post worksheets, students should be able to draw pictures as part of their answers.

Option 1:

Pre-assessment worksheet

Questions should include: What do you think Native American people lived like before Europeans came to America? Why did Europeans come to America? How did the arrival and settlement of the Europeans change the way Native Americans lived? How did the new style of

land management affect animal life? What is the most important thing you want to learn?

Post – assessment worksheet

Questions should include vocabulary words at the top: Hohokam, Chaco Canyon Ancestral Puebloans and the Plains Indians. Questions should include: What do you think Native American people lived like before Europeans came to America? Why did Europeans come to America? How did the arrival and settlement of the Europeans change the way Native Americans lived? How did the new style of land management affect animal life? What is the most important thing you learned?

Option 2:

As students finish each section of lessons, they write a short summary of the information they learned. Each summary is a short paragraph. The teacher provides sentence stems to help them formulate sentences when they write. When put together, the sections form a multi-paragraph essay. Section 1. The Hohokam people. Section 2. The Chaco Canyon people. Section 3. The Plains Indians people or bison hunters.

Note: optional sections could be added or deleted using teacher discretion. After writing those previous sections, a pre-section could be added about the pre-Columbian Native American society or a post-section could be written about Native Americans today. Another paragraph option is ways colonization changed the land and affected animals.

Teacher Background Reading and Research Locations for Lesson Help
<https://www.britannica.com/story/whats-the-difference-between-buffalo-and-bison>

This article explains the difference between buffalo and bison.

(Tikkanen, 2022)

<https://navajorange.nmsu.edu/Selected-plants-of-Navajo-rangelands.pdf>

This is an extensive list of plants with Navajo names and illustrations

(Hawkes, 2018)

<https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~238678~5511614:Indian-Land-Cessions>

Native American historic land loss maps starting in 1784. The site offers the ability to export a thumbnail jpg picture. Prior to 1492, all of the land would have been dark brown land because it had not been ceded (or claimed as occupied) by non-Native peoples. (Hilliard, 2022)

<https://external>

[preview.redd.it/7Zkpp0TceSkdzchTGIQKORUNQOCbOkfGOgBt3mr42vs.gif?format=mp4&s=73796b26d8c62e8b5a04932fa6ba6e364018885f](https://external.preview.redd.it/7Zkpp0TceSkdzchTGIQKORUNQOCbOkfGOgBt3mr42vs.gif?format=mp4&s=73796b26d8c62e8b5a04932fa6ba6e364018885f)

This video of Native American Land loss can be stopped and controlled by moving the bar manually.

Historic Range and Current Range Maps for specific Plants and Animals are listed below <https://vividmaps.com/us-forest-cover/>
(Alex, 2020)

<https://peopleandcarnivores.org/big-cats>
(People and Carnivores. Mountain Lions, 2020)

<https://peopleandcarnivores.org/grizzly-bears>
(People and Carnivores. Grizzly Bears, 2020)

<https://peopleandcarnivores.org/wolves>
(People and Carnivores. Gray Wolves, 2020)

<http://www.friendsoftimesbeachnp.org/passenger-pigeon.html>
(Friends of Times Beach Nature Preserve, Passenger Pigeons, 2014)

<https://www.buffalofieldcampaign.org/bison-maps>
(Buffalo Field Campaign, 2020)
<https://www.mossoak.com/our-obsession/blogs/elk/elk-restoration-east-of-the-big-river>

(Hines, 2020)
<https://www.arizonamuseumofnaturalhistory.org/plan-a-visit/mesa-grande/the-hohokam>
The website has a map of the Hohokam canal system as well as other Hohokam information. (Arizona Museum, of Natural History, 2022)

<https://www.azcentral.com/picture-gallery/news/local/tempe/2021/03/06/canal-system-phoenix-began-ancient-hohokam-huhugam/6826938002/>
This article shows pictures of some of the Hohokam canals still being used in the Phoenix, Arizona area today.
(Staff, 2021)

<http://www.chacoarchive.org/cra/chaco-sites/>
This is an interactive map of Chaco Canyon with information and diagrams about each building site and capabilities to see pictures of the building sites. This could be used by students for research
(University of Virginia, 2010).

<https://www.youtube.com/watch?v=zEoPXMstOxE>
This video is a 5 minute PBS presentation showing the summer solstice marked with light hitting a niche in a kiva wall. It explains the cardinal direction buildings layout and shows the value of Chaco Canyon to today's descendants of those people
(Knmedotorg, 2009).

<https://www.youtube.com/watch?v=I1qdhU5Lw2A>
This video is a 23 second video of the actual sun dagger on Summer Soltice on Fajada Butte before it was damaged possibly by hikers visiting the canyon.

(Freeman, 2012)

Materials for Classroom use as Attachments to the Curriculum
Plants of the Navajo Nation: Language Word Part Lesson
Trading Cards for Chaco Canyon

Diné Standards Pre K-3rd

Diné History Standard: I will understand historical/factual events, people and symbols that influence my family. Concept 3. I will recognize historical events of other people that affect my family. PO 2. I will name regional historical and factual events.

Diné History Standard: I will understand historical/factual events, people and symbols that influence my family. Concept 4: I will understand time passage and chronology, specific to Diné culture and traditions. PO 4. I will identify historical events in different eras.

Diné Culture Standard: I will develop an understanding of Diné way of life. Concept 3. I will implement and recognize the Diné lifestyle. PO 3. I will name the various plants within my surroundings.

Alignment with Standards

Arizona State Standards

3.SP1.2 Compare life in specific historical time periods to life today.

3.SP2.1 Explain why individuals and groups have different points of view on the same event.

3.SP3.6 Construct arguments and explanations using reasoning, examples, and details from sources.

3.SP4.1 Explain probable causes and effects of events.

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Plants of the Navajo Nation: Language Word Part Lesson Grasses on the Navajo Nation

English word: Bottlebrush Squirreltail

Navajo word: Azéé'iilwo'iindtsaaí

Word part meanings: azéé'- medicine, iilwo'i - going into,

English word: Foxtail Barley

Navajo word: Azéé'iilwo'iitsoh

Word part meanings: azéé'- medicine, iilwo'i - going into,

English name: James' Galleta

Navajo name: Tł'ohdich'ízhí

Word part meaning: tł'oh – grass, dich'ízhí - rough

i – the one, tsaai – grand in size

English word: New Mexico Feathergrass

Navajo word: Tł'ohdit'ódítsoh

Word part meaning: tł'oh -grass, dit'ód– fragile or thin, tsoh – big

English name: Canadian Wildrye

Navajo name: Tł'ohndtł'izítsoh

Word part meaning: tł'oh - grass, tł'izí - goat, tsoh -big

Trees Words for the Navajo Nation

English word: tree

Navajo word: t'iis (or less often ts'iis)

English word: wood Navajo word: tsin

English word: forest (a dense collection of trees)

Navajo word: tsintah

Word part meaning: tsin – wood, tah – among the dense area

English word: Quaking Aspen

Navajo word: ts'iisbéíí

Word part meaning: ts'iis – tree, béíí – (milk-like)

English word: Russian Olive

i – the one,

tsoh – big

Navajo word: tsin ɰibáh

Word part meaning: tsin – wood, ɰibá – beige color, há – the one which is

Flowering Plants on the Navajo Nation

English word: Curlycup Gumweed Navajo word: Ch'ilibílatahaltsóíí Word part meaning: ch'il – plant,

English word: Blackbrush

Navajo word: Ch'ilɰizhiní

Word part meaning: ch'il – plant,

English word: Skunkbush Navajo word: Ch'ilɰichiin

Word part meaning: ch'il – plant,

English word: Sand Sagebrush Navajo word: Ch'ilzhóó'

Word part meaning: ch'il – plant,

English word: Field Bindweed Navajo word: Ch'il natł'oi ɰigaí Word part meaning: ch'il – plant,

English word: Blanket Flower Navajo word: Ch'ilibílatahózhóón Word part meaning: ch'il – plant,

bíláta – top of or tip of the plant,

ɰizhiní - black

ɰichiin – smells/smelling

zhóó' – sandy to the touch

haltsóíí – light in color

natł'oi – like a spider web, ɰigaí – white

bíláta- top of or tip of the plant, hózhóón – beautiful/pretty

Trading Cards for Chaco Canyon

All of these pictures are from government sources, so are free from copyright. Many of them are items that were actually found in Chaco Canyon.

Make one worksheet copy for each student. Make color copies of all of the trading cards. Make more than one copy of those cards you think would commonly appear in the Chaco Canyon marketplace and print an appropriate number of cards for the number of students that will be trading for goods. I would recommend two or three cards per student, no more.

Introduce the worksheet. Have the students write down a one or two sentence description of what kind of person they are representing in Chaco Canyon. Are they a traveling trader, a laborer who builds buildings, a laborer who grows crops, a government assistant who helps with events, an administrator over the city, someone visiting for a religious gathering, a housewife, a child, or perhaps just a traveler passing through?








Now have them think about what kind of goods they would need to possess for their way of life and then what other things they might like to own if they could afford it. The students will write down a short list of those things.

Mix up the trading cards and hand out the cards randomly without student choice. Explain to the students that the goal is to obtain items that are useful for them to have for the type of person they wrote down in the first rectangle on the worksheet. Set a timer and let the students trade with each other for twelve to fifteen minutes. They may trade one card or two cards for someone else's card. They are not required to trade any of their cards to someone else unless they want to. This event could either be done by working in several smaller circles or in two lines moving opposite directions, stepping down one position every 30 second. At the end of the time, have them return to their seats and glue their trading cards still in their hands onto their worksheet.

When the time is up for trading, they should write a sentence beside each trading card object about what they will do with that item. They might use it themselves in their job or personal life, give it as a gift or even keep it to trade on another day.

My Day of Trade in the Chaco Canyon Marketplace. Name _____

The person I represent in Chaco Canyon is:	Items I might need for the kind of life I live are
Glue the cards below that you have at the end of your trading session.	Write one or more sentences about how you plan to use that item in these rectangular spaces below.

<p>Pottery : 1 canteen to carry water to drink</p> 	<p>Pottery: 1 large bowl</p> 
<p>Pottery: 1 pitcher to hold water</p> 	<p>Pottery: 1 ladle to dip soup out of a pot</p> 
<p>Obsidian 1 knife for cutting plants, cleaning game, cooking</p> 	<p>Arrowhead for hunting medium sized animals</p> 
<p>Figurine Bear</p> 	<p>Obsidian spear point For hunting large animals such as bison</p> 

<p>Chunk of obsidian rock for making your own arrowheads, knives, etc.</p> 	<p>Turquoise rocks for jewelry making</p> 
<p>Minerals to grind up to make paint</p> 	<p>Drills: Used to make holes in hides, seashells, etc.</p> 
<p>Beads that already have holes</p> 	<p>Pottery: 1 small bowl</p> 
<p>Drinking container</p> 	<p>1 Woven basket</p> 

<p>1 Pendant</p> 	<p>Mano and Matata for grinding corn</p> 
<p>Digging stick</p> 	<p>Hoe for gardening or loosening dirt</p> 
<p>Needle</p> 	<p>Pottery seed storage container</p> 
<p>Tool for grinding pigments and minerals to make paint.</p> 	<p>1 Pendant</p> 

1 Pendant



Arrowheads of varied sizes to hunt
Smaller animals



Seashells for decoration or jewelry



Conch seashell for tuning into a trumpet



Corn seeds



Corn seeds



1 Scarlet Macaw bird



Cocoa beans, the source of chocolate for making a
frothy drink



Bean seeds



Squash seeds



Copper Bell



Fire Starter



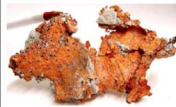
Squash seeds



Macaw feather



Chunk of Copper



Abalone seashell

