

Layers in Time

In-Parks Field Program
Sequoia and Kings Canyon National Park
Program Outline 3rd—4th Grade



Grade Level(s): 3rd-4th

Setting:
Hospital Rock Picnic Area
Sequoia National Park

Duration: 3.5 hours

Standards Addressed:

Grade 3:

Social Science 3.1, 3.2, 3.4
Visual Arts: 2.1

Grade 4:

Social Science: 4.1.3, 4.2.1
Visual Arts: 3.2, 4.2

Vocabulary:

Archaeology, artifact,
pictograph, hunter-
gatherer, bedrock mortar,
shaman, projectile point

Introduction:

Welcome to Sequoia National Park. The *Layers in Time* archeology field trip introduces students to the people who once lived at Hospital Rock through the artifacts they left behind. Through several different hands-on activities students will have an opportunity to discover and investigate Native American pictographs, stories, trade routes, economics, and culture.

Essential Question:

What can we learn about Native American art and culture, and the tools and methods they used to survive in the Sierra Nevada foothills based upon the artifacts they left behind?

Essential Understanding:

Through the science of archaeology, we can study the artifacts left behind by the Native Americans in order to gain a more complete understanding of how they lived, what they ate, their art, and their culture.

Materials:

- Program Outline
- Paper and oil pastels (one per student)
- Trading game information card
- Trading game name tags
- Trade items
- Ranger walk materials (TBD)

Schedule:

9:45 Arrive at Hospital Rock Picnic Area
9:50 -10:00 Bathroom Break
10:00 -10:15 Introduction
10:15 -11:00 Program Stations: 2 Teacher-led Stations (20 minutes each), 1 Ranger-led Station (45 minutes)
11:00 -11:30 Lunch
11:30 -12:15 Program Stations: 2 Teacher Stations (20 minutes each), 1 Ranger-led Station (45 minutes)
12:15 -12:45 Conclusion: Layers In Time Relay
12:45 Load Bus and Depart

****Bus may visit Visitor Center or other locations after the program.*

****Please let the rangers know where you will be taking students.*

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Welcome/Introduction

1. Introductions: Rangers, Park, area, logistics, rules

2. Program Intro:

What is a National Park? What do we protect National Parks? Use the arrowhead patch to discuss the role of the NPS.

What is archeology? The science that studies human cultures by examining artifacts and material remains.

What is an artifact? An object left behind by a previous culture that helps us learn how these people lived in the past.

According to recent archeological studies, the foothills of the central and southern Sierra Nevada have been inhabited for at least 5000 years. Hospital Rock was one of the largest Native American village sites in present day Sequoia and Kings Canyon National Parks. Today we are going to learn more about the historic people that lived here for several hundred years.

3. Safety Rules

4. Group Logistics

Station 1: Pictography – The Story Behind the Art

Location: Hospital Rock & Cave

Leader: Visiting Teacher

Duration: 20 minutes

Objectives: At the end of this activity students will be able to:

1. Manipulate concepts in the abstract by interpreting Native American symbols and creating their own symbols using oil pastels

Activity:

Indian people throughout North America created rock art in prehistoric times. Its meaning is mysterious and at times controversial. Throughout the world there are rock art sites where a Shaman or Medicine Man recorded, through art, the images they saw while in a dream-like state. While the exact meaning is unknown we can make inferences about the meaning of the pictographs at Hospital Rock.

Observe the drawings and share your ideas about the meanings of the drawings.

Teachers will direct the students to the opposite side of Hospital Rock where the students can find a comfortable place to sit in the cave. Students will listen to the attached story and interpret its meaning through pictures drawn with oil pastels on pastel paper.

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Hospital Rock Background Information:

Hospital Rock was known by the Western Mono as *Pah-din*, the place to go in. It is a sacred place still visited today by members of the Monache tribe.

Pictographs, sometimes called Indian Rock Art, are pictorial representations of an object. The exact meaning of the Hospital Rock pictographs is unknown, they may have been painted by one or more shaman (spiritual leaders and doctors).

These symbols are representative of images seen by the shaman while in a dream-like state. Have you ever tried to remember a dream when you woke up the next day? What pictures and visions do you remember seeing in your dreams?

Do any of the pictographs remind you of visions in your dreams? What do you think the drawings represent? These drawings were not made using ink or paint, rather the native people mixed iron oxide and animal fat to create a paste that they used like paint. Iron oxide (like a rusted tin can or nail) is a naturally occurring mineral found throughout the Sierra Nevada.

Today visitors to this area know it by the name of Hospital Rock. Some people say that Hospital Rock got its name because the shamans would do ceremonies here to heal the sick.

Others say Hospital Rock got its name from an incident that occurred here shortly after the Potwisha had abandoned the site. In this version, an injured pioneer hunter was carried up to the cave under the rock and nursed back to health until he was well enough to travel.

Which story do you think is more convincing? Why?

Activity: The Story Behind the Art

1. Give each student a half sheet of paper and one oil pastel.
2. Read the story, *Why the Coyote is Gray*, and ask the students to draw their own pictographs based on their vision of images in the story.

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Why the Coyote is Gray

There was a time when the bluebird's feathers were a very ugly color, and he was almost ashamed at how he looked. Now where he lived was a lake with bright blue waters. No river flowed into the lake and none flowed out. The blue bird wanted very much to change his ugly color for the beautiful blue of the lake. He thought, "Perhaps if I bathe in the water, my feathers will be that color." So every day, for four mornings, he went to the lake to bathe. Each morning he bathed in the blue water four times. Every time as he came out of the water, he sang, "There's blue water, it lies there. I went in. I am all blue."

On the fourth morning the bird sang its song as usual, and all its feathers dropped off of its body. The fifth morning the bird again sang its song and bathed in the lake. This time, however, when it finished its bath, it had new feathers and they were a bright blue.

Now Coyote had been watching the bird come each morning to bathe in the lake. He hoped to catch the bird, but he was afraid to jump into the water. On the fifth morning, he was again hiding when the bird came out of the lake with its beautiful blue feathers. How he did envy the bird, because at that time Coyote's fur was a bright green color.

Coyote hurried down to where the blue bird was and said, "How is it that all your ugly color has come out of you, and now you are all blue and gay and beautiful? You are more beautiful than anything that flies in the air. I want to be blue, too. Tell me, what must I do to have a blue coat?"

The bluebird told Coyote that all he had to do was to bathe four times each morning for four days and each time to sing the song that the bird sang. Then on the fifth day his fur would be blue.

Coyote soon learned the song, and for four mornings he did exactly as the bluebird told him to do. On the fifth morning, when he came out of the lake, he was delighted to find that he was now as blue as the bird.

Coyote was very proud of his beautiful color, and he went out for walks to show off his blue coat to everyone. As he walked along, he would look to first one side and then the other to see if he was being watched. He held his head very high, and hoped everyone would see how beautiful he was. He even looked to see if his shadow was blue, too!

One morning when he was out for a walk, he became so busy admiring his beautiful coat that he didn't watch where he was going. The first thing he knew he ran into a stump and hit it so hard that he was knocked down into the dirt where he was all covered with gray dust. When he got up, all of his beautiful blue color was gone and his fur was as gray as the dust.

So Coyote lost his fine blue coat because he was vain and proud, and to this day all coyotes are gray.

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Background Information

Archaeological evidence supports a theory that there has been at least some human presence in the park for around 1,000 years (and in the region for 5,000 years). The evidence shows that regular occupation of villages and camps inside what is now Sequoia and Kings Canyon National Parks started around the mid-1700's.

Archaeologists have identified four possible village sites and 50 possible camp sites within parks. The park is also home to numerous bedrock mortar sites and two suspected tool making sites.

Village and camp sites are identified by specific sets of archaeological data. Campsites typically contain a scattering of obsidian flakes. They are often found adjacent to rivers or lakes and usually near mountain trails. Villages may have these same characteristics, but show an accumulation of midden soil.

Midden soil is dark in color and has a greasy feel to it. Midden soil is the result of years of refuse deposit, where animal remains (i.e. bones, gristle) decompose in the soil but leave trace evidence. Midden soil is an indicator of human habitation and is thus very useful to archaeologists.

Further evidence of Native American habitation within park boundaries can be found in the few scattered pictograph sites. Pictographs have been found at Hospital Rock and Potwisha Campground in the foothills, as well as in Tehipite Valley of Kings Canyon National Park.

Little is known about the origins of this art nor do we know who created the art. When European settlers first asked the native Yokuts about the paintings they stated that they were made by the old ones. Archaeologists speculate that the paintings were likely made by medicine men or shamans, but the purpose is not clear.

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Station 2: Trading Activity

Location: Hospital Rock Picnic Area

Leader: Visiting Teacher

Duration: 20 minutes

Objectives: At the end of this activity students will be able to:

1. Explain why trade with other tribes was important to local Native Americans.
2. Identify four items that were commonly traded by the Yokut, Chumash, and Eastern Mono.

Background:

Archeologists have discovered artifacts at Hospital Rock that would typically be found East of the Sierra Nevada Mountains and near the coast. These artifacts and years of research indicate that trade was popular among the tribes.

The Chumash tribe (located near the central coast of California) found an abundance of abalone shells, dried fish and whale meat in their home land. Abalone shell was most commonly used in decorative necklaces and as a form of currency. Dried fish and whale meat provided these tribes with much needed protein.

The Yokut tribe of the San Joaquin Valley and lower foothills region had plentiful amounts of acorns and deer in their area. After much preparation the acorns were considered to be a staple food in the form of acorn meal. Deer meat provided a source of protein while deer hide was used as clothing.

The Eastern Mono of the Owens River Valley (on the east side of the Sierra Nevada) found plentiful obsidian, rabbits, and rock salt in their environment. Obsidian is a type of volcanic glass that was carved to make arrow points for hunting and other tools used in daily life. Rabbit skin was made into blankets that were soft and provided a great deal of warmth, while rock salt was a special treat much like candy today.

Procedure:

1. First and foremost HAVE FUN!
2. Divide the students into 3 tribes: Chumash, Yokut, and Eastern Mono. If there is an uneven distribution of students, put the extras with the Eastern Mono tribe.
3. Read the **Trade Information** card to the students
4. Pass out tribe names to each student (Chumash, Yokut or Eastern Mono) and have the students hang the name tags around their neck.
5. Show them the map and point out where each group lived
6. Explain to the students that each tribe has its own language.
 - The Chumash only speak “wa” as in “wa-ter”
 - The Yokuts only speak “kni” as in “knee”

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7. Once the students understand which tribe they belong to and the language of their tribe, pass out their trade items. Each student will be given a combination of the following trade items which they will travel with and trade with different tribes:
 - Each Chumash student should have some combination of the following items:
Abalone Shell Dried Fish Whale Meat

 - Each Yokut student should have some combination of the following items:
Acorn Meal Deer Hide Deer Meat

 - Each Eastern Mono student should have some combination of the following items:
Obsidian Rabbit Skin Blanket Salt

** Make sure the students: (1) note what items they have been given to trade and (2) understand that they must trade the items they have been given for items from at least one other tribe.
8. Explain to the tribe members that they will soon be starting their journey across California. Use the map provided to illustrate the movement of tribes from their home toward Hospital Rock:
 - The coastal Chumash tribe will head inland from the coast
 - The Yokuts will move east from the valley toward the mountains
 - The Eastern Mono will climb west over the Sierra Nevada mountains
9. In the picnic area, determine a meeting/trading spot and then select a route for each tribe to take that acts as a pretend route from the coast, from the valley & over the mountains. As the tribes travel their route to the meeting spot, they should determine what items are most valuable to them and work to get as many of those items as possible (supply vs. demand).
10. Once they have arrived at the meeting spot, the tribe members will negotiate trades in their native language (wa, kni, or ky). At the end of the trade, each student should have something different than what they started with.
11. After all trading has been conducted, bring the students together for a discussion of the trades each student and/or tribe made.
 - Did you trade together as a tribe or did you make individual trades?
 - What did you start with and what did you end up with?
 - Do you think you made good trades? Why?
 - Did the other tribes want your goods?
 - What were the challenges associated with speaking different languages?

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Background Information

Yokuts

The Yokuts are a tribe of Native Americans who once lived in the central valley of California. At one time the Yokuts may have had around 70,000 people split amongst 60 different tribes that shared a common language.

The Yokut tribal lands spread from the Sacramento River Delta in the north to Bakersfield in the south. Their lands spread east to west from the Sierra Nevada Foothills to the Coastal Foothills.

The Yokuts lived off of the land, taking advantage of their proximity to Tulare Lake and the numerous rivers and streams running into the valley from the Sierra Nevada Mountains. Yokuts hunted mammals and birds, fished, and gathered seeds, nuts, and berries. They made small boats out of tule reeds to navigate the waterways of the lake and marshes of the valley floor.

Eastern Mono

The Eastern Mono, also called the Owens Valley Paiute, lived in the Owens Valley on the eastern side of the Sierra Nevada Mountains. The Eastern Mono may have only numbered around a few thousand.

The Eastern Mono hunted deer, big horn sheep, and pronghorn. They gathered pine nuts and insect larvae. They had access to large outcroppings of obsidian, a volcanic rock that could be shaped into different tools. They also had access to numerous dry lake beds which contained large salt deposits.

Chumash

The Chumash lived along the central and southern California coast from Morro Bay in the North to Malibu in the south. They also lived on three of the Channel Islands. Their proximity to the sea provided the Chumash with many valuable resources.

The Chumash fished using hooks crafted from abalone shells. They built large boats called tomols from redwood planks washed down the coast from the north. They used spears to hunt seals and sea lions. They would evaporate sea water to collect salt. They also made shell beads which were used as money by tribes throughout California.

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Ranger Led Walk

Objectives - At the end of this walk, students will be able to:

1. Describe three different resources needed for human survival and where they are located at Hospital Rock.
2. Explain how acorns were gathered and processed into a food source for Native Americans living in Sequoia National Park.

Materials:

Obsidian samples, both modified and unmodified
Acorns, Basket, Soap plant (if available)

Stop 1: Picnic Tables by Bay Tree

Today we are going to take a trip back in time. We are going to try and imagine what life would have been like for the people that lived here a long time ago. Let's look out on the landscape in front of us.

Try and remove all the asphalt and buildings with your imagination. Now imagine a large village here. This land in front of us was once home to around 300-400 people. This village was home to the Western Monache or Western Mono.

What are some of the things the Monache would have needed to survive? (food, water, shelter)

Look around us, do you see evidence of water, food, or shelter?

What would you have eaten? Where would you build your shelter? What would you build it out of?

We are going to take a short walk and explore how the Monache were able to use what they found here in the foothills to survive.

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Stop 2: Granite rock on the way to cross the street

Let's talk about shelter. Why do we need shelter? Do you think the shelters, or houses, we live in today are different than the shelters that people lived in a long time ago? What do you think the shelters used by the Monache might have looked like?

Slowly turn in a circle and observe the landscape around you. Where in this landscape would you build your home.

Geology of the area and Moro Rock:

- Landslides created this flat area to build on
- Exfoliation: Moro Rock, granite rock sticking up from the ground, rock by bear boxes
- Hospital Rock broke off of Moro Rock
- Rocks and trees create natural playgrounds
- Near river
- Low elevation = warm climate
- Plentiful food

The Monache made huts from willow branches shaped into a large cone.

Transition: Although shelter is important for survival, here in the foothills we have a very hot climate with mild winters. The trees provide a natural source of shade. Because of this hot and dry climate, there was another resource that was very important for survival. Now we are going to explore the role water plays for survival in this environment.

Stop 3: Across the street at the spring or at the marsh behind upper picnic area

Water is essential for life. What do we use water for? What would the Monache use water for? How would the Monache transport water? They would use water-tight baskets or gourds to carry water back to their village.

Water would be boiled for cooking by placing rocks from the fire into a basket of water with sticks.

Transition: Shelter and water are both important for survival. Next we will explore how the Monache found and prepared different types of food.

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Stop 4: Bedrock Mortars

The Monache Indians were hunter-gatherers who ate a wide variety of foods. Their diet consisted of wild berries, seeds, plants, and acorns, as well as deer, rabbits, bear, squirrels, birds, and fish.

The women gathered berries, seeds, nuts. The men would hunt and fish. During the fall acorn season everyone would help gather the acorns.

The women carried large woven baskets to carry the seeds, nuts, and berries they gathered. Seeds and nuts would usually be ground into a flour using stone tools were ground up in bed rock mortars like the ones you see here.

Acorns were ground up into an acorn flour. This flour then needed to be leached of its tannic acids using river water and baskets. Once the acorn flour was clean of the tannic acids it could be baked into a cake or bread. But, the Monache mainly made the acorn meal into a porridge and ate it by hand.

The Monache hunted with several different tools. The bow and arrow was the most common hunting tool. Smaller animals were caught using traps.

Arrowheads were typically made from obsidian that they acquired through trade with the Eastern Mono who lived on the other side of the Sierra Nevada Mountains. Raw obsidian could be shaped into very sharp projectile points and blades through a process called flint knapping.

They diverted the river into narrow channels and used traps made of willow branches to trap the fish so others could scoop them out of the trap using their hands or baskets. The Monache also poisoned fish using buckeye seeds. This poisonous seeds would stun the fish allowing villagers to wade into the river to gather them.

Conclusion

For the Monache people, this was more than a picnic site and parking lot. This was their home. They lived here together, they hunted together, cooked together, ate together, and played together. They raised families and made friends. This land provided all the resources they needed to survive.

Today, the National Park Service protects this land for all people. While their villages are no longer here, we do not forget that this land was once their home and we hope to take care of the land so that future generations can enjoy its beauty.

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Conclusion: Layers in Time Relay

Relay Instructions: (led by ranger)

Split the group into 2 teams and line the students up in two lines facing each other about 40' apart. Have the teachers stand in the front of the line and give them each a Relay Question and answer key.

Place the 2 boxes of relay race items in the middle and show each team their box. Explain the game to the students.

Upon starting the teachers will read the 1st question to the students and 1 student will run and get the answer out of the box then return to the teacher. (Send students in pairs depending on time and size of group.) If it is correct the student passes the item to the next student in line and goes to the back of the line. The next student will take the item back to the box when they attempt to answer the next question. If incorrect; the item must be passed to the next student, the question reread, and the first item returned to the box by the student who will try to recover the correct answer.

The relay is won when the 1st group of students have successfully answered all of the questions and every student has had a turn. (If there are more students than questions than the teacher will start at the top of the questions again and continue until all students have gone.)

Relay Questions:

What fruit is produced by the oak tree and served as a staple food for the Western Mono? **Acorns**

What type of rock, found on the eastern side of the Sierra, was used because of its ability to be easily shaped for tools or weaponry? **Obsidian**

Who was the first man to make contact with the Western Mono people? **Hale Tharp**

This prized trade item was coveted for its decorative properties and used much like currency is used today - what is it? **Abalone shell**

This mode of transportation left behind what evidence? **Horse shoe**

Where did the big boulders around the picnic area and in the river come from? **Moro Rock**

Bring back a tool used by an archeologist. **Brush**

What did the local tribes use to help catch fish? **Buckeye**

What evidence might people of the future find that we leave behind? **Money/Can top**

What did the Western Mono people use to make paint for their pictographs? **Iron Oxide**

When the Chumash would trade with the Western Mono, what would they trade their abalone shells for? **Deer hide**

What did the Western Mono people use to make their baskets? **Grass**

What symbol does the National Park Service use to identify itself? **Arrowhead**

When the Eastern Mono would trade with the Western Mono, what would they trade their rock salt for? **Acorns**

What did the Western Mono women use to grind the acorns? **Granite rock**

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Vocabulary

Archaeology	-noun-	The study of human history and prehistory through the artifacts they left behind
Artifact	-noun-	An object made by a human being
Pictograph	-noun-	A drawing meant to represent a word or an idea.
Hunter-Gatherer	-noun-	People who lived by hunting, fishing, and gathering wild nuts, seeds, and berries
Bedrock Mortar	-noun-	A hole ground into a large rock for the purpose of crushing and grinding nuts or seeds
Shaman	-noun-	An important member of many Native American tribes, served as a healer and medicine man, often communicated with the spirit world
Projectile Point	-noun-	A sharp point meant to be thrown on a spear or fired from a bow

Additional Resources

Elsasser, A.B., *Indians of Sequoia and Kings Canyon National Parks*
Sequoia Natural History Association, 1962.

Indian Tribes of Sequoia National Park Region
http://www.cr.nps.gov/history/online_books/berkeley/steward2/stewarda.htm