

## Theme

Humans have inhabited Great Sand Dunes National Park and Preserve for at least 9,000 years. The harsh, dynamic environment shaped human communities in the SL Valley, & humans shaped the culture and environment, too.

## Goals

### The students will...

1. Analyze how human activities altered and affect the environment in Colorado
2. Learn that living conditions for those who inhabited the area have constantly changed over time.
3. Analyze how changes happen over time, and how living beings adapt to, or cause, changes.

## Objectives

### The students will be able to:

Organize a sequence of events to explain chronology of and cause/effect in Colorado's history.

Identify native and non-native animal species common in Colorado and explain their roles in the changing landscape.

Discuss environmental stewardship with differently-minded peers.

## Time

Welcome – 15 min.  
Parking lot to crosswalk – 10 min.  
Trailhead to Mercantile – 30 min.  
Bridge to Pike Plaque – 20 min.  
Bridge to Streamside -25 min.  
Overlook to VC – 10 min.  
Spear/Atlatl- 20 min.  
Conclusion –5 min.

## Location

Visitor Center Parking Lot  
Montville Trail  
Back of VC

## Grade Level

4<sup>th</sup> Grade

# Walking Back In Time

## 4th grade

### Introduction (Visitor Center Parking Lot)

Gather the students together in a circle. Pull chaperones and teachers aside for a separate introduction. Welcome the students to Great Sand Dunes National Park and Preserve. Explain that today they have come to one of the best places in the world to explore because we have a unique story to tell.

*Ask if anybody knows why "Great Sand Dunes National Park and Preserve" has been set aside. What makes this place so special? So that these dunes and watershed can be forever protected and that people like you can come enjoy it and learn about it forever. Not only is this place still being studied on how it formed, but we are still studying the cultural history!*

Set the ground rules. This will influence your whole program, so don't skip it! Make sure the students know that while they are with you, their job is to pay attention and learn. *For example, "Does anybody know or would anybody like to guess what my job is? A park ranger, right! And I actually have 3 jobs to do today. To make sure you are safe, make sure you learn something, and make sure you have some fun. To help me do those jobs, I need you to do certain things too. They're probably a lot like what your teacher expects of you in the classroom. The most important way to make sure we're staying safe and having fun is by using respect. What does respect look like? What does respect sound like? What does respect feel like?"*

Break into smaller groups, one ranger to 10-15 students, and head out to the Montville Trail!

### Engage

Explain to the students they are time travelers today. Tell them that every time we move ahead, we'll move further back in time, and need to make time-machine sounds. Ask them to demonstrate those noises before we get going!

### Explain

#### 1: Employee parking lot facing Montville

Today we'll take a stroll through history. We'll start here in the San Luis Valley of 2018, a modern, very productive farming area and also home to the Great Sand Dunes National Park and Preserve. This is one of the largest potato growing areas in the United States rivaling Idaho in annual production. This is also an area with a varied and exciting history. We'll walk along with what we call the Montville Nature Trail and try to discover as much as we can about the history of this area.

## Materials

- GRSA NPP picture
- “The Great Escape!” game cards
- Sand Fire Picture
- Los Seis de Boulder Picture
- WWII Relocation picture
- Gridded Whiteboards & markers
- Montville Picture
- USA Explorers Picture
- Wellington Family Picture
- Spanish Explorer Picture
- “Who Am I?” game cards
- Ute Picture
- “Awassos” Cheyenne Story cards
- Prehistoric bison picture
- Mammoth tooth
- Mammoth picture
- Atlatl
- Spear
- Projectile Points

## State Standards

### Math

#### Shape, Dimension, and Geometrics

- Appropriate measurement tools, units, and systems are used to measure different attributes of objects and time
- Geometric figures in the plane and in space are described and analyzed by their attributes

### Life Science

- Explain and illustrate with examples how living systems interact with the biotic and abiotic environment

### Reading, Writing, Communicating Oral Expression and Listening

- A clear communication plan is necessary to effectively deliver and receive information.

Prior to vehicles and heavy equipment to make traveling the west, how did explorers access this valley? A mountain pass! Many people over many centuries have walked where you will walk today. Mosca Pass was first used by people 10,000-12,000 years ago. Taking advantage of this gap in the mountains, people walked over the pass for different reasons. Let's go check it out and see what they may have seen!

### Time-Traveling Sounds

#### 2: On the trail by the big Juniper Tree, where the Dunes are visible *Dedication of GRSA as National Park & Preserve, 2004*

We've traveled back 14 years, and it's what year? (2004) Before 2004, the Great Sand Dunes used to be a National Monument- it was kept safe by the President of the US. But in 2004, the Congress men and women all voted together and decided to protect not *just* the Sand Dunes, but they also learned that *the Creeks* around it, *the mountains* all the way to their peaks, and a bunch of the *desert-looking land, called the sabkha*, off to the west of the dunefield are all super important to preserving the Sand Dunes as a healthy ecosystem. So, in 2004, Congress named us the Great Sand Dunes National *Park* and Preserve. Ask: "What were the 3 types of physical features that were added to the Dunes that made it a National *Park* and *not just a Monument?*" (creeks, mountains, desert [*sabkha*]) Tell the kids to remember this, we'll talk about it again in 1932.

### Time-Traveling Sounds

#### 3: After crossing the road before meeting up with the Montville Trail *The Sand Creek Fire, 2000*

Ask the students to observe the side of the hill and compare and contrast the landscape. You'll note that fire had once burned through this area. In 2000, a human-caused fire, the Sand Fire burned more than 3000 acres. Not only do we see remnants of the trees that perished, but what type of trees grow after a fire burn? Aspen! You'll note that the trees we walk through are only 18 y/o. Most animals escape wildfires, and many forest animals benefit from them. Let's play a game to find out how!

### Explore

Explain the rules of the game: The Great Escape!

1. Explain that they'll play charades (they CAN make their animal's sounds if they know them!) to act out their card. Students guess the animal and its actions. Don't move on to the next student until the animal and its adaptations are discovered. When the guesses are good-and-close, have the student confirm their classmates' guesses by reading their card aloud.

2. Split the students into two smaller groups to play the game. Hand out the Great Escape animal cards (one per student, no duplicate cards within a group)

## State Standards cont'd.

### Social Studies

#### History

-Organize a sequence of events to understand the concepts of chronology and cause and effect in the history of Colorado.

-The historical eras, individuals, groups, ideas, and themes in Colorado history and their relationships to key events in the United States.

#### Geography

-Connections within and across human and physical systems are developed

#### Civics

-Analyze origins, structure, and functions of governments and their impacts on societies and citizens

### Explain

#### 5. Montville Trailhead

##### *WWII, 1941*

We're about 100 years ago- Japanese families were starting farms in the San Luis Valley. Out west in California, Japanese-American farmers controlled crops like strawberries, celery, asparagus, and tomatoes. Later, in the 1920's, Japanese-Americans experienced discrimination in California because they were successful in farming, and other California farmers couldn't compete with them. Finally, when Japan's government attacked Pearl Harbor in 1941, World War 2 began, and it caused even more distrust against Japanese Americans throughout the US. Many Japanese-Californians were forced into internment camps to make sure they could not attack the US from within. (*Ask if anyone knows what internment camps are, and discuss*).

However, those who knew the Japanese-American farmers here in the SLV were given the option of relocating here to farm. Whether people were relocated to an internment camp or to a place like our Valley, businesses, homes, and possessions had to be sold or entrusted to neighbors or friends. Pets had to be left behind. Our then-Colorado Governor Carr showed the opposite of California's racism by being one of the few western governors who accepted and welcomed the Japanese-Americans. Though many Coloradoans didn't vote for him in the next election, causing him to lose the governorship because of his decision, Colorado today can be proud of him. There are still a number of Japanese descendants living in the valley from those original successful farmers.

### Evaluate

Ask, "How would you compare the civil rights ideas of 1974 to 1941?"

"What judgment would you make about civil rights in Colorado today?"

"If you were one of these relocated people, what would you pack in your suitcase?"

### Time-Traveling Sounds

### Explain

#### 6. Post 2, Turn back and Look at the Dunefield

##### *Dedication of GRSA as National Monument, 1932*

We've traveled back only 9 years. That's why we didn't walk very far! In 1932, a group of women, known as the Ladies' PEO, saw that the Dunes were starting to be taken advantage of. They were concerned that gold miners and lumberjacks would use up all of the resources here and destroy the sand dunes. They wrote letters to President of the US Herbert Hoover, and he agreed with the Ladies' PEO. President Herbert Hoover designated the Sand Dunes a National Monument, and so it was saved for people to enjoy.

### Evaluate

Ask, "What are some things that changed from when it became a National Monument to when it became a National Park?" (*creeks, mountains, sabkha, voted on by Congress v. designated by President*)

## **Explain**

### **7. Post 3, Hastings Montville Mercantile *Mercantile Mapping, 1880's***

Let's go back about 140 years and see a small village that was built here in the late 1880's. It was a village that grew up at the site of a toll roll across this pass we call Mosca Pass and was called Montville. It was a thriving little community of about 20 homes that boasted an orchard, a post office, store, corrals, and a toll booth on a road across the pass that was once considered the "lifeline of the San Luis Valley". The owners of the road charged \$2.00 for a team of horses and a wagon, \$1.00 for a horse and rider, and \$.50/head of cattle. When you look at this canyon today can you imagine pulling a horse and wagon across this pass? Look around and tell me why you think people would have chosen to live here. The creek provided the life-giving water that was needed to survive in this desert environment.

The post office, store, home was operated by Frank Hastings in the late 1870's. He stocked supplies that travelers or settlers might need. What are some supplies that you think they might have needed back then (have students write down a shopping list of what they would need)? Hastings supplied horseshoes, livestock feed, tools, flour, sugar, beans, tobacco, and canned goods.

## **Explore**

Divide students into groups of 3 (or 2 if uneven). Hand out a gridded white boards to each group. Tell students they will be drawing, to-scale, what the building would have had in it. First, students will measure length and width of where the white posts are. Then, have each group draw a site map, to scale, of the building on their white board.

Have students ask an adult to hold their whiteboard. Tell them they will have a chance to pretend to be Montville townspeople before they draw the inside of the building. Assign some students to be the Hastings family, and everyone else has other identities such as ranchers, gold miners, and travelers from over the pass. Set a timer for no more than 5 minutes.

## **Evaluate**

Have students take their whiteboards back so they can sketch out the interior of the building as they experienced it through their game.

Before moving on, ask: Why do you think we are only able to locate this one place? This was a peaceful location from 1887 until 1911 when a flash flood, from the steep canyon above, destroyed most of Montville's structures.

## **Time-Traveling Sounds**

## Explain

### 8. Pike Plaque, 1800's

John C. Fremont, 1848

John Gunnison, 1853

We've now arrived in the early 1800's. The people that inhabited this area were: Spanish and Native Americans. This plaque commemorates the explorers that crossed these passes to open up the West for expansion of the United States. Have a student read the quote. Aside from this quote being the first documentation of the dunes, not much has been able to be recorded about Zebulon Pike's exploration...why is that? Lewis and Clark exploration happened three years prior and has a lot of detailed documents, their route, struggles along their trip. There are very few documents and even fewer identified sites relating to Pike's exploration. Some say Pike crossed over Mosca Pass and others state he came over Medano Pass, both are located in the park.

Later, in 1848, John C. Fremont was hired to find a railroad route from St. Louis to California. He crossed the Sangre de Cristos into the San Luis Valley in winter, & though it was a disaster, it proved that a winter crossing of this range was possible. He was followed in 1853 by Captain John Gunnison of the US Topographical Survey. Gunnison's party crossed the dunefield on horseback: *"Turning the southern base of the sand-hills, over the lowest of which we rode for a short distance, our horses half burying their hoofs only on the windward slopes, but sinking to their knees on the opposite, we for some distance followed the bed of the stream from the pass, now sunk in the sand, and then struck off across the sandy plain...The sand was so heavy that we were six hours and a half in making ten miles..."*

### Time-Traveling Sounds

### 9. Wellington Ditch Trail, 1928

Explain that this intersection is a jump forward in time by 100 years, and we are back in the 20<sup>th</sup> century- it's 1928. This ditch was intended to bring the waters of Mosca Creek about ½ mile to the 2-bedroom cabin Harold Wellington and his father, Frank, built in 1928. Like all homesteaders, they needed water for livestock, gardens, washing, bathing, and drinking. Little more is known about the ditch or whether it was ever used successfully to bring the water closer to their cabin.

Ask, "How much water does your family use every day?" and "How much would you use if you had to carry it in a pail from a creek ½ mile from your house?"

### Time-Traveling Sounds

### 10. Streamside to the Left (good shady place for everyone to sit or spread out)

**Spanish Exploration, 1776**

We've gone backward in time again, this time about 40 years before American explorers ever saw the place. This is 3 years before Zebulon Pike was even born! Can anyone tell me what big-deal event was happening on this continent in 1776? (*Signing of the Declaration of Independence & beginning of Revolutionary War*)

In 1776, Juan Bautista de Anza II and a huge entourage of men and livestock

4. Give each person in each pair 1 minute to explain to his/her partner the ranking he/she chose. Then, give the other partner half a minute to paraphrase

I'd like for everyone to take turns reading this (or if you're short on time the ranger can read it) story. Each group will have sections of this story printed out and readily available for them to read. Have each student read a paragraph on the way back to the visitor center. The story comes from the Cheyenne community.

"One day, a hunter was out looking for game. Suddenly out of a bush came a great black bear. The hunter had only his spear and his knife to protect himself. "Awassos", said the hunter, "I have not come here to harm you so I will leave you in peace". But the bear, Awassos, had another plan and started to walk toward the hunter. The hunter, fearing for his life, decided to turn and walk away. The bear knew he was stronger than the man and soon started to pursue him. To protect himself while running, the hunter turned his spearhead behind him. Seeing a thick bush he ran through it hoping that the branches would slow the bear.

As the hunter ran, he realized that his spear was caught on a vine along one of the bushes. In a desperate attempt to free the spear, he pulled on it with all his strength.

Suddenly, just as the bear caught him, the hunter lost his grip and the spear flew towards the bear. The vine became a natural sling. To the hunter's surprise, his spear struck the bear in the chest, inflicting a mortal wound to the animal. "Iahi!" cheered the hunter.- "Wliwni, Kchi Niwaskw!"

"Thank you, Great Spirit, for saving my life, and providing food and clothing for me and my family." Giving homage to the Great Spirit, he realized that a new weapon could be made.

"Enni!" said the hunter, as his wonder became greater. Instead of using a tree, he could take a branch from a tree and instead of using a vine; he could make a string from milkweed to make the new weapon.

The hunter gave homage to the Great Spirit for giving him this new aid to his hunting. And this is one story explaining how the bow and arrow were created!"

Hand out a picture of the Linger Cattle Guard site. Have the students interpret the site. What animal bones were found? What human artifacts were found? Why are there so many bones in one place? What would they be doing at this site? Pass around a mammoth tooth.

The Clovis culture, like the Utes and Apaches after them, probably hunted here during the spring and summer. Although they probably hunted for many of the same animals we see today (deer, elk, and rabbit) they also hunted bigger game that has since become extinct.

and so forth.)

### **Activity: Atlatl/Spear Throw (Explore) Back of VC by employee patio**

Columbian mammoth, *bison antiquus*, camel and giant sloth also inhabited this area and we have found Clovis points and mammoth remains near the dunes. How did they hunt these animals? We believe they used the atlatl and it proved so successful that hunting, along with climate change probably resulted in the extinct of these animals.

There weren't grocery stores thousands of years ago. How did people provide for their families? Hunting! Now this part gets fun. We are going to figure out the hunting relationship between ice age humans and their ice age animal counterparts. What were the tools used to take down an animal as big as a dump truck? Pass around stone points and describe how they were made by striking certain rocks at an angle (flint-knapping). Pass around atlatl dart, spear, recurve and describe its various properties (fletching for long flight, stone tip on the end, small dimple in the top).

Ask the students what one would work the best? Are these two tools alone powerful enough to take down a 30,000-lb animal? What animals roamed this area back then? Show pictures of Columbia mammoth (Pleistocene photo), real tooth and points. Introduce the atlatl and describe how it works as a lever to lengthen the arm and make a spear throw longer and more powerful. Discuss the advancements in archery from spear, atlatl, recurve, to modern day compound bow.

Cycle the students through atlatl and spear target practice by choosing a site with the wind at your back and a clear view with no obstructions. Establish the 'throwing line' and the 'waiting line' and make sure that anyone without an atlatl or spear in hand is to be behind the waiting line. No one goes in front of the throwing line until all darts are exhausted and the instructor has indicated that it's time to retrieve the darts. Give each student two throws, have them retrieve their darts, and switch off.

### **Conclusion (Evaluation)**

Bring your group back together at the VC parking lot. Process some of the struggles for people living here throughout time. Compare and contrast two types of hunting tools. Hand out the timeline cards to the kids in groups of twos or threes. Have the students discuss the event or time period they have and try to remember what they learned in the program. Place the timeline cards in order from past to present.

Thank the students for being great learners, for having curiosity, respect, and enthusiasm, and have the students thank their teachers and parent chaperones for bringing them out on this great field trip. Have a great rest of your day and come back and see us again soon!