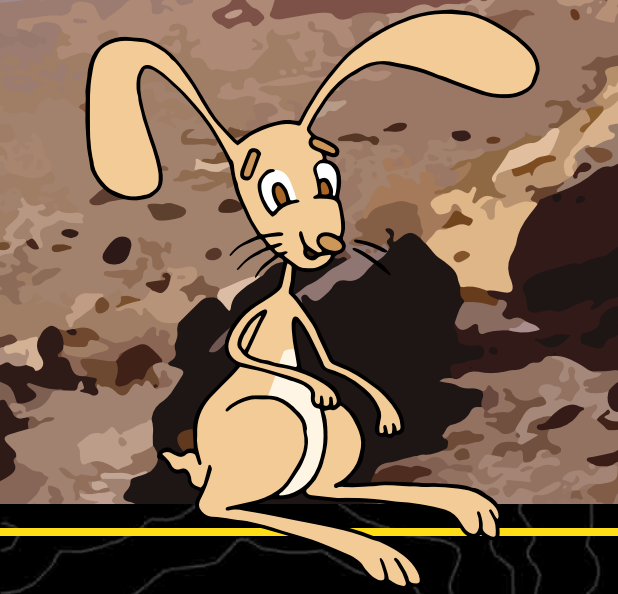
U.S. Department of the Interior
Bureau of Land Management

Grimes Point Archaeological Area and Hidden Cave

JUNIOR RANGER

Activity Book



Stillwater Field Office

What's Inside?

Explore Grimes Point Archaeological Area and Hidden Cave

The Grimes Point Archaeological Area is in west-central Nevada. This area is now a desert, but at the end of the Ice Age (more than 10,000 years ago), a massive lake covered the land here. This ancient lake is called Lake Lahontan. The depth of the lake fluctuated drastically when it existed, sometimes drying up completely. When the area was not covered in water, it would have been a marshland with a wide variety of plants and animals.

The first human populations were in this area 14,000 years ago and possibly earlier. By hiking a short trail in the area, you can see evidence of these populations. The trail passes through a field of boulders covered with petroglyphs, also called rock art. The petroglyphs here were pecked or carved into the rock with hard tools.

About a quarter mile away from the Grimes Point Archaeological Area is another place called Hidden Cave. The cave was formed about 21,000 years ago by the waves of Lake Lahontan. Based on research and items found by archaeologists, people used this cave between 2,000 and 4,000 years ago as a place to store objects, rather than as a place to live.

Public Lands Belong to You

The Bureau of Land Management (BLM) is a federal government agency that takes care of about 245 million acres of public lands. These lands belong to all Americans, including you. Most are in the Western United States. The BLM also manages a number of smaller sites in the Eastern United States.

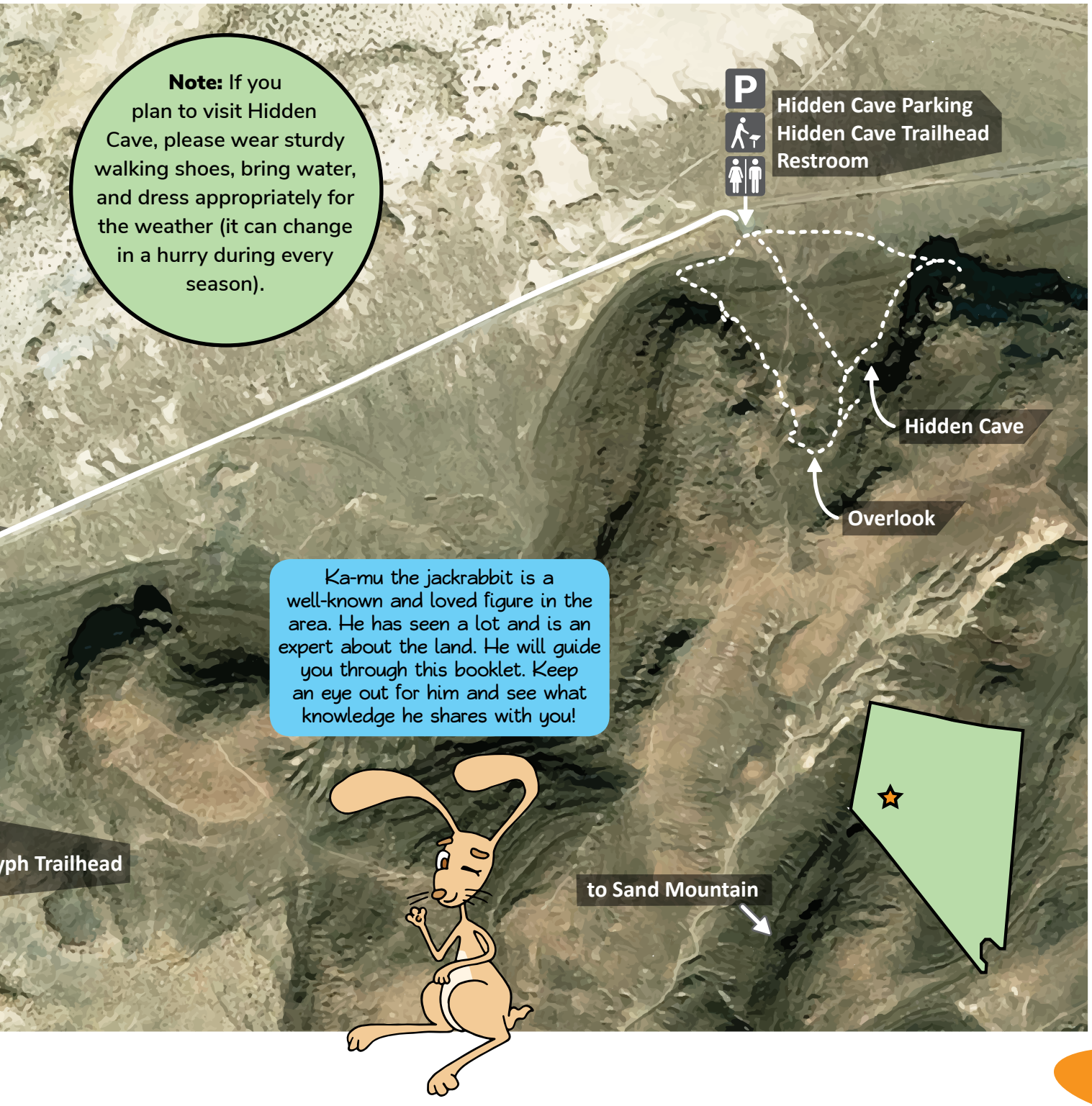
The BLM manages public lands for many uses. Big open spaces are available for recreation activities, such as hiking, camping, fishing, and hunting. These lands provide habitat for wildlife, food for grazing animals, and timber for people. The lands provide natural resources, such as coal, oil, and natural gas. The lands contain evidence of the past, such as dinosaur bones and plant fossils.

Archaeological sites on public lands help us learn how people lived in North America long ago. Nevada's archaeological sites are part of the heritage of Native American's today and are also very important to the state's story.

The BLM Junior Ranger Program introduces young adventurers like you to the lands and resources managed by the BLM. This book explores the Grimes Point Archaeological Area and Hidden Cave. These

places showcase Nevada's Native American heritage and their early occupation in the area. In this book, you will learn how archaeologists study how people lived and why it is important that archaeological sites are respected and protected. The BLM would like to thank Donna Cossette and the staff at the Churchill County Museum for their input on this Junior Ranger book.

We hope you enjoy the activities in this book and exploring and learning about this special area. When you are finished, cut out the Junior Ranger certificate at the back of this book. Then, say the Junior Ranger pledge and sign the certificate.



Special Evidence of the Area's Past

Ka-mu: Hello, I would like to tell you why this area is special. This area contains a field of boulders covered with petroglyphs that were etched in stone thousands of years ago. This page explains the petroglyphs in more detail. The information on this page will help you sketch your own petroglyph and complete the puzzle on the next page.

Grimes Point is a field of boulders made of **basalt**, which is a **volcanic** rock. The boulders are covered with a glossy black **patina**, commonly called desert varnish. The black patina formed over **thousands** of years from exposure to the elements, like wind and rain.

Many of the boulders are covered with rock art called **petroglyphs**, which were pecked or **carved** into the rock with tools thousands of years ago. The petroglyphs here were created by taking off the patina and exposing the lighter colored natural rock underneath.

The special places that contain petroglyphs provide **clues** to how people lived and used the area thousands of years ago. The images could have been representations of maps, **stories**, trails, rituals, terrain, or important events.

Directions: Using one of the four petroglyph styles, sketch your own petroglyph in the space below and describe in a sentence or two what your petroglyph represents.

There are **four** distinct styles of petroglyphs in the Grimes Point Archaeological Area.

Representational style includes elements from the natural environment.

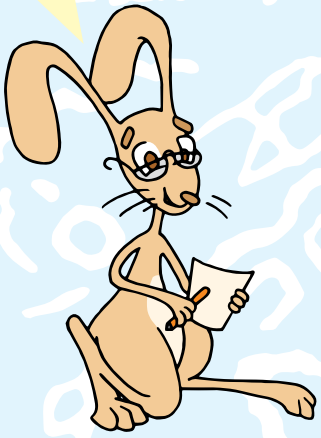
Curvilinear style has curvy or wavy lines or circular forms and designs.

Rectilinear style has straight lines and angular designs.

Pit-and-groove style has indentations and incisions in the rock surface. This is the most abundant style at Grimes Point and is likely the **oldest** style, possibly dating back more than 8,000 years.

Grimes Point Crossword

Ka-mu: Use the information you learned about Grimes Point to complete the crossword puzzle.



Across

1. The boulders at Grimes Point are made of _____.

3. There are _____ distinct styles of petroglyphs at Grimes Point.

5. A word for rock art is _____.

8. Basalt is a type of _____ rock.

10. Petroglyphs were pecked or _____with hard tools into the rock.

Down

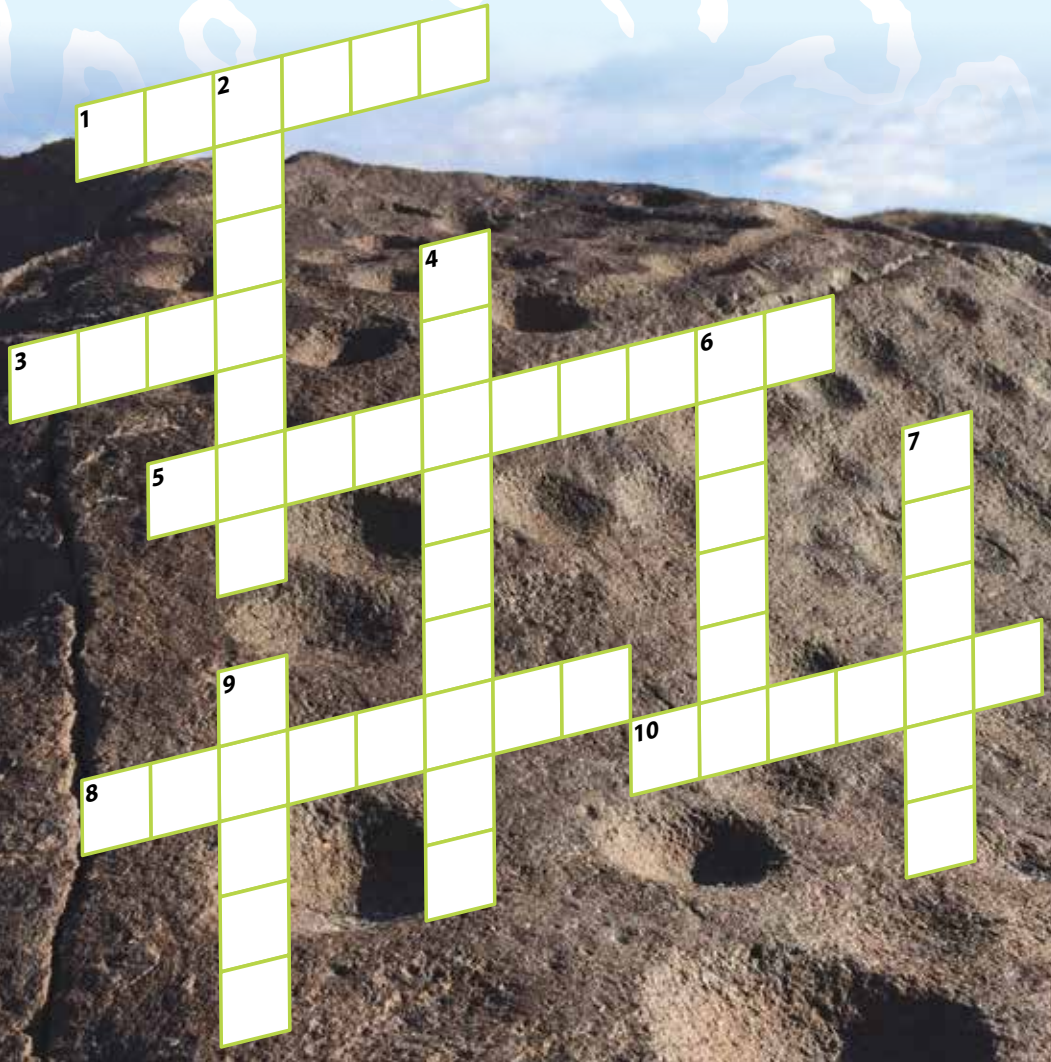
2. Petroglyphs could represent maps, _____, trails, or important events.

4. The patina on the boulders formed over _____ of years.

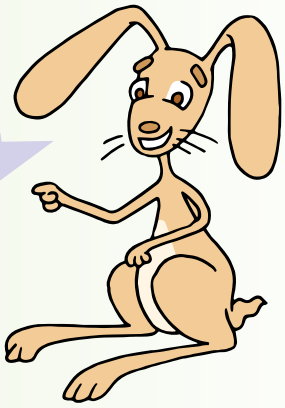
6. The boulders at Grimes Point are covered with black _____.

7. The pit-and-groove style is the most abundant and likely the _____ style at Grimes Point.

9. Petroglyphs are special and provide _____ to how people lived.



Stewardship: Protecting Our Past



Ka-mu: This page explains seven principles that are good guidelines to follow in all outdoor settings. We can all do our part!

When visiting Grimes Point Archaeological Area, please view the petroglyphs respectfully by staying on the trail. This will help ensure this special place remains for future generations. To help remember your experience, take photographs. Please do not touch the petroglyphs or damage them in any way.

You can do your part to protect our past by following the Leave No Trace Seven Principles. These simple seven guidelines are meant to help keep the area the same or better than when you arrived. These principles can be practiced in any outdoor setting. To learn more about each of the seven principles, go to **www.lnt.org**.

1. Plan ahead and prepare.
This includes learning rules or concerns before visiting a location, only bringing pets if they are allowed, avoiding times of high use, and telling others where you are going and when you will be back.

2. Travel and camp on durable surfaces.
This includes staying on designated roads and trails, camping on existing or designated campsites, and not damaging constructed features.

3. Dispose of waste properly.
This includes packing out anything you brought with you and disposing of human waste properly.

4. Leave what you find.
This includes not altering or removing rock art or other historic features.

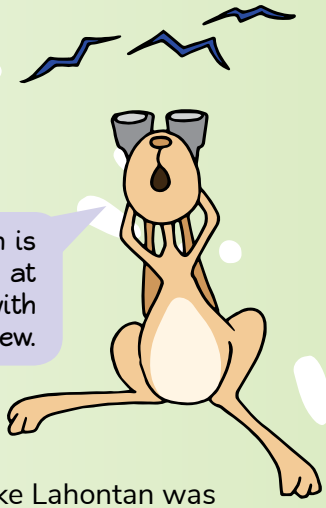
5. Minimize campfire impacts.
This includes keeping fires small and under control, only building fires where authorized in existing fire rings, and ensuring fires are completely out when finished or before leaving.

6. Respect wildlife.
This includes controlling pets and not feeding, following, or approaching wildlife. Also, for your own safety, do not pick up dead animals, including bats, and report their location to the BLM.

7. Be considerate of other visitors.
This includes respecting the sacred nature of archaeological sites, being considerate of others' beliefs, and not being disruptive to other visitors.

Directions:
In the picture below, each of the seven principles are not being followed. Circle all of the incorrect actions.

Lake Lahontan: An Ancient Oasis in a Changing Landscape



Ka-mu: This page explains the way the landscape has changed over time, which is quite impressive. Use your imagination to visualize how the area must have looked at different stages. I appreciate you learning about the area. Sharing this information with others is a great way to teach someone something new.

During the Ice Age, most of northwestern Nevada was under Lake Lahontan (also known as ú Ancient Lake Lahontan by locals). The lake fluctuated in size, but at its largest, it was about 8,500 square miles—close to the size of New Jersey. Lake Lahontan was one of the largest lakes in North America. Sometimes the lake would dry up completely, but about 15,000 years ago, it was 900 feet deep!

Today, the area is a desert. But thousands of years ago, the Grimes Point area had just emerged above water. This area was a marsh, rich with wetland plants and animals, including tule, cattail, and numerous species of birds, fish, and mammals. The marsh probably looked a lot like the Stillwater Marsh (northwest of Grimes Point) after a heavy rainy period.

Directions: On the top, draw a view of the area as it looks today. On the bottom, draw a view of how the area probably looked as a marsh thousands of years ago.

To see a sweeping view of where Lake Lahontan used to sit, take the Petroglyph Trail at Grimes Point to the Overlook. From here, you can see a valley that was once covered by the ancient lake.

Geological Transformation Over Time

Ka-mu: Do you know what geology means? It is the science of the earth's physical structure, such as rock layers, its composition, and how it has changed over time. Have fun learning about some of the area's geology.

As Lake Lahontan decreased in depth, small dunes formed along the edges of the shrinking lake, and you can see some of them today. Do you see lines on the mountainside? These lines were left like rings on a bathtub as the lake dried up and shrank. Also, look around at the peaks of the tallest mountains. The tops of those peaks were once islands in the lake!

Sand Mountain is located about 18 miles east of the Grimes Point Archaeological Area. Sand Mountain is approximately 3.5 miles long, 1 mile wide, and 600 feet high, which makes it the largest single sand dune in the Great Basin. The sand that created the dune mostly came from Lake Lahontan. If you were standing in front of Sand Mountain 10,000 years ago, you would have been under water.

Sand Mountain is one of 35 singing sand dunes in the world! Singing sand, also called barking sand or whistling sand, makes sounds like a jackhammer or garbage truck when wind passes over the dune or as you walk on the sand.

Directions: Now that you have learned quite a bit about the Grimes Point Archaeological Area, find the words that relate to the area and Sand Mountain.

archaeology
artifact
basalt
boulders
cache
carve
cattail
cave
cultural
desert
dune
evidence
excavate
gather
heritage
historic
hunt
karnee
lake
language
marsh
native
Paiute
patina
petroglyph
plants
protect
snowfall
special
stewardship
strata
tradition
volcanic
wetland
wildlife

E	E	I	P	R	F	W	A	M	R	L	J	L	O	R	E	T	B	J	O
D	V	V	Y	L	E	O	B	R	A	Y	A	F	O	V	L	M	A	H	A
V	V	B	R	T	A	O	T	X	T	N	E	E	A	S	I	P	S	T	Q
N	A	X	L	A	U	N	L	W	G	I	M	C	V	K	A	P	A	R	Z
S	L	A	S	L	C	E	T	U	T	B	F	C	O	I	T	R	L	O	E
P	N	K	D	K	O	H	A	S	O	P	F	A	L	T	T	E	T	V	K
D	P	E	T	R	O	G	L	Y	P	H	D	C	C	S	A	A	I	Q	Q
A	R	C	H	A	E	O	L	O	G	Y	U	L	A	T	C	D	N	I	P
S	C	U	L	T	U	R	A	L	I	Z	N	A	N	V	E	C	N	R	I
P	L	L	A	F	W	O	N	S	Q	E	E	K	I	N	T	J	O	C	H
R	A	Q	M	L	E	T	A	V	A	C	X	E	C	K	D	T	I	E	S
E	L	T	T	R	A	D	I	T	I	O	N	E	C	W	E	R	M	T	D
H	D	G	R	D	V	I	L	C	S	B	X	G	Q	C	O	V	I	U	R
I	R	D	K	M	E	R	C	S	Y	G	F	A	T	T	M	M	M	I	A
S	E	H	C	A	C	S	E	E	O	J	N	T	S	B	Q	A	R	A	W
T	R	U	X	I	R	H	E	H	P	I	J	I	T	H	U	N	T	P	E
O	G	J	R	C	F	N	A	R	T	S	H	R	S	I	O	W	U	Y	T
R	H	D	Z	E	B	T	E	A	T	A	Z	E	W	W	C	N	T	C	S
I	Z	P	J	V	J	E	P	E	I	O	G	H	F	P	D	I	J	Y	C
C	K	E	F	I	L	D	L	I	W	E	K	H	S	R	A	M	M	N	O

Hidden Cave: The Age of Artifacts

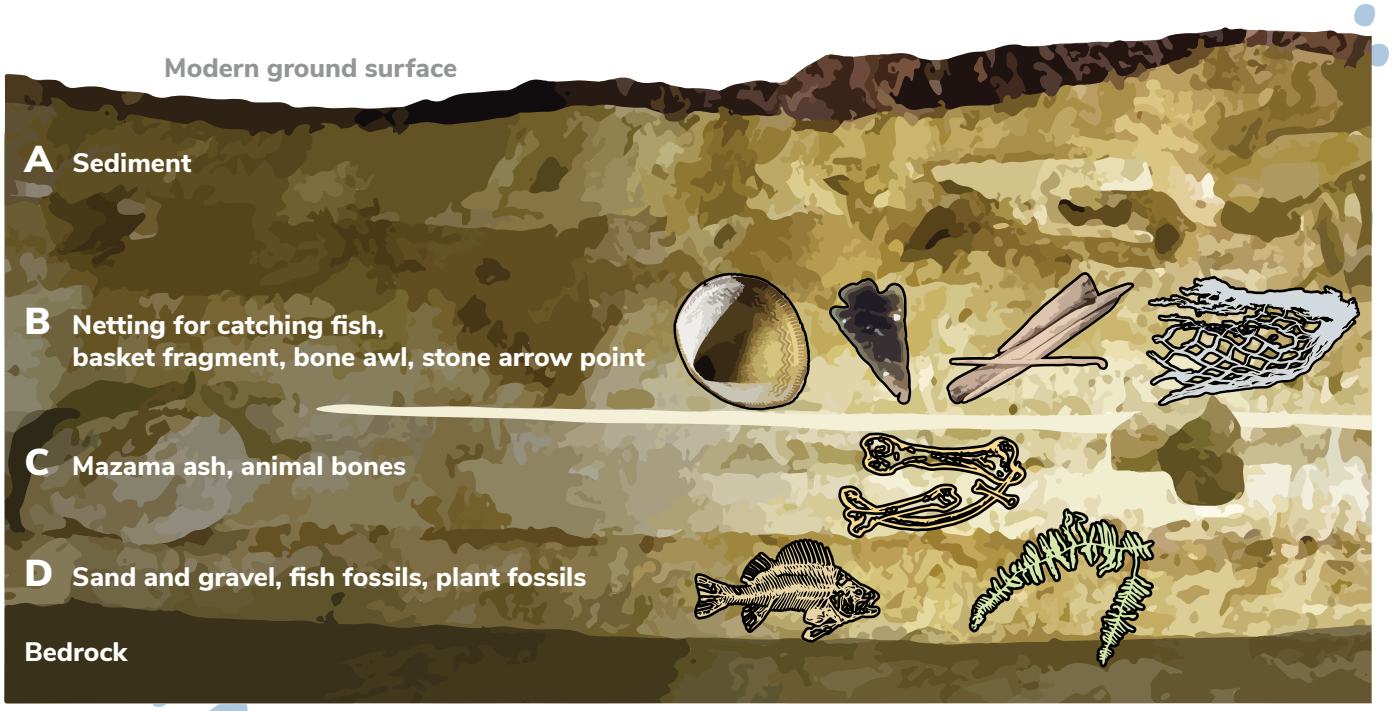
Ka-mu: What is in Hidden Cave? How long has Hidden Cave been here? How did people use Hidden Cave long ago? Read on to find the answers to these questions.

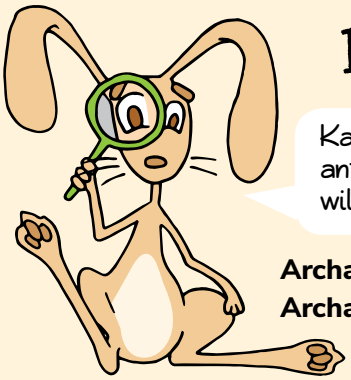
Hidden Cave formed around 21,000 years ago by the waves of rising Lake Lahontan. The cave was excavated three times by archaeologists. A large amount of the artifacts found in Hidden Cave were unbroken and arranged in groups. The evidence found by archaeologists suggests Hidden Cave was used mostly for storing important items for a later time. This is similar to how we use garages, attics, and pantries today. Archaeologists found several concentrations of items in Hidden Cave, called caches. Examples of caches found in Hidden Cave are tools (such as spears and arrowheads), fishing gear (such as netting), and baskets. People probably did not live in the cave. It was very dark, cramped, and dusty and would not have made a good place to live.

One way archaeologists determine the age of artifacts is called relative dating. Relative dating is done at an archaeological site by relating objects to each other by their position in the ground. Artifacts found in the top layer, or strata, closest to the surface are usually the youngest. Artifacts found in the deepest layer of the earth are usually the oldest.

Directions: Using the information you learned above, write the letter of the strata under the time period that it matches.

10,000 years ago	500 years ago	7,500 years ago	6,900 years ago





Intro to Archaeology

Ka-mu: Archaeology is a very interesting subject. It is one of the four subfields of anthropology, which is the study of people and cultures in the past and today. This page will give you an introduction to archaeology and different specialties of archaeology.

Archaeology is the study of the things people made, used, and left behind in the past.
Archaeologists are scientists who study the materials (or artifacts) people left behind.

Artifacts are the remains of objects that people made or used. People leave behind artifacts that can be picked up, like stone tools and glass bottles. People also made buildings and created rock art, called **features**. Artifacts and features are called **cultural resources**.

Archaeology has different fields of study, or specialties. An archaeologist can specialize in a specific time period or a geographic location, or even a particular civilization. There are sites in the ground or underwater, and even sites you can see from the air.

These are some of the different specialties in archaeology:

Egyptologist: specializes in the scientific study of Ancient Egypt
Underwater archaeologist: practices archaeology in, on, around, and under water
Aerial (satellite) archaeologist: studies archaeological remains by examining them from altitude
Industrial archaeologist: studies material evidence associated with the industrial past (relating to industry)
Zooarchaeologist: studies the remains of animals found at archaeological sites

Directions: Using the information you learned about some of the different specialties of archaeology, write the items below under the specialist who may find or study the items.

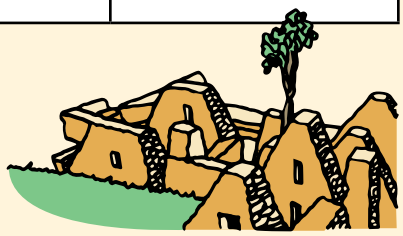
Egyptologist	Underwater archaeologist	Aerial (satellite) archaeologist	Industrial archaeologist	Zooarchaeologist

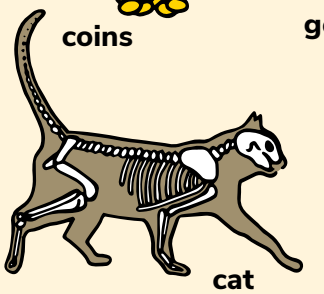

coins

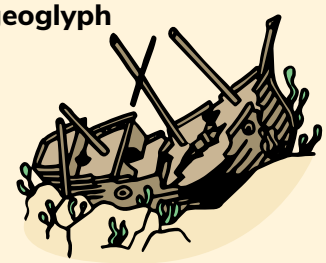

geoglyph


hieroglyphics

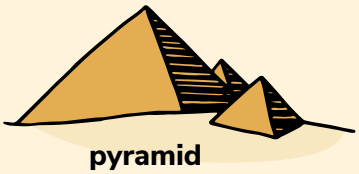

railroad


city

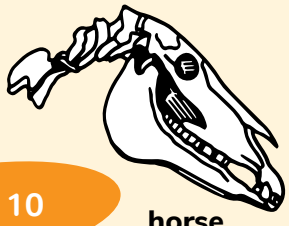

cat


shipwreck

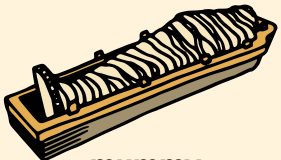

trails


pyramid


jewelry

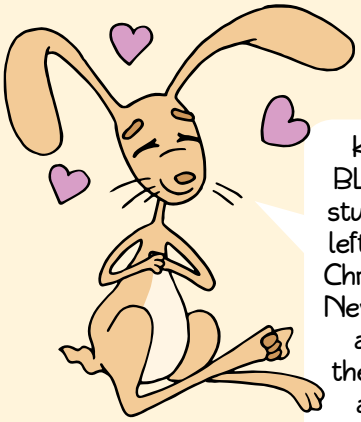

horse


bridge


mummy


dog


cabin



So, You Want to be an Archaeologist?

Ka-mu: Among the many aspects of its mission, the BLM conserves cultural resources. BLM archaeologists study sites similar to Hidden Cave and analyze artifacts left behind long ago, which can tell us how people lived. Christine and Jason are archaeologists with the BLM in Nevada. Christine was born in California and has worked as an archaeologist in the western Great Basin and the east coast. Jason grew up in the Rocky Mountains and has worked as an archaeologist throughout the American West. Let's ask them some questions.

What do archaeologists do?
Jason: Archaeologists are kind of like detectives, and the clues we find from the past help us figure out how people used to live. Archaeologists study artwork, weapons, bones, tools, buildings...even garbage!

Have you ever stepped into quicksand or encountered other dangers?
Christine: Not quicksand, but I have sunk to my knees in very fine sand in the desert. Archaeologists do a lot of walking and hiking, so we need to be careful to avoid getting an injury or disturbing wildlife habitats. We have to keep an eye out for wild animals, and we sometimes work in extreme temperatures—as hot as 120 degrees or even below freezing.

What is the coolest thing you ever found?
Jason: Native Americans used to carve rock art, or petroglyphs, into the rock. Once I found a canyon filled with depictions of animals, people, art, and other symbols carved by Native Americans long ago. The canyon is a very special place, and it was an honor to help record and protect the rock art.

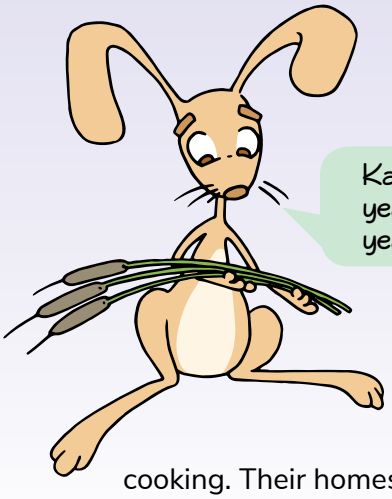
Are there different kinds of archaeology?
Christine: There certainly are! Archaeologists may focus on a specific time period, a particular geographic location, or classical archaeology, such as ancient Greek and Roman civilizations. There are even marine archaeologists who study submerged sites like shipwrecks! Aerial archaeology is advancing and involves new technology like drones to study an entire archaeological landscape from above.

Do you find fossils and dinosaur bones? And do you get to keep what you find?
Jason: Sometimes an archaeologist may find fossils or dinosaur bones, but unlike paleontologists, we focus on people and the things they left behind to learn how people used to live. After an archaeologist studies an artifact, that artifact is carefully stored in a museum, or returned to the people of a culture that it once belonged, or even put back into the ground!

When did you decide you wanted to be an archaeologist?
Christine: I have been interested in archaeology since I was a little girl. My grandma had a lot of books, adventure magazines, maps, and a globe, and I would spend hours imagining how people around the world live and why different cultures practice their traditions. As I grew up and eventually went to college, I found myself loving anthropology classes, and archaeology in particular.

What advice do you have for kids who want to become an archaeologist?
Jason: Follow your curiosity. Take classes that interest you and participate in events you find interesting. If you are interested in the wild west, visit museums and read books about American West history. If you are interested in Native American culture, go to a powwow and participate in Native American events. Following your curiosity will lead you to your specific passion in archaeology!

How can someone become an archaeologist?
Christine: Anyone can be an archaeologist! There are professional archaeologists, like Jason and me, who have Master's degrees in anthropology. You can also find work without a degree, usually as part of a field crew that surveys areas and sometimes excavates. There are also amateur archaeologists who volunteer in archaeological investigations.



Who are the Toi Ticutta (Cattail Eaters)?

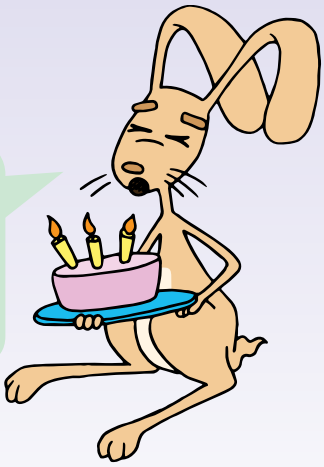
Ka-mu: Think of the town where you live. Maybe you can imagine what it was like 50 years ago. Maybe even 100 years ago. What do you think it was like more than 8,000 years ago? Can you imagine? This is when the Toi Ticutta inhabited Stillwater Marsh.

Stillwater Marsh is the traditional homeland of the Toi Ticutta. Toi Ticutta means Cattail Eaters, and they are a group of the Paiute people traditionally from the Great Basin region. Traditionally, the Toi Ticutta used the natural features of the land to make their homes, clothes, and tools for hunting and cooking. Their homes, called karnee or nobe, were built out of willow, cattail, and tule. They made clothes and sandals from leather and from fibers of sagebrush bark, tule, and dogbane. Cooking baskets and other items were constructed from willow. They used a variety of tools to hunt and gather food, enjoying fish, clams, roots, seeds, berries, waterfowl, big game, and smaller animals. Today, the Toi Ticutta people live just as everyone else, but still practice their traditional way of life so it will be carried on to future generations.

Directions: Connect the dots to see a karnee or nobe made by the Toi Ticutta.

START

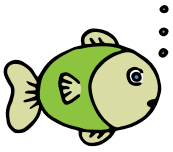
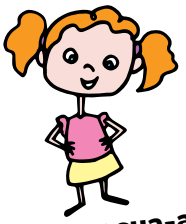
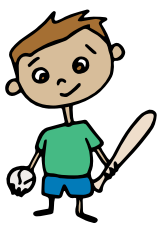
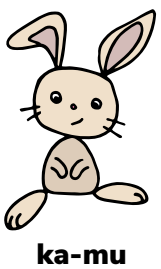
Meet the Paiute People

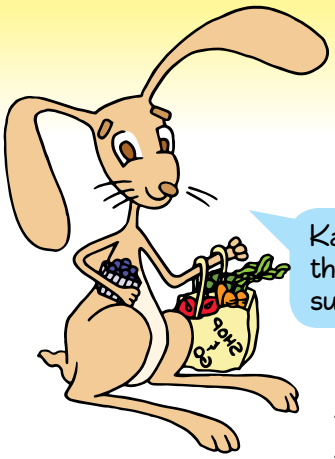


Ka-mu: Families pass down traditions from generation to generation. What are some of the traditions at your home? Some traditions could be how you celebrate birthdays, eating specific food, wearing certain clothes, and singing a special song together. Traditions are important because they help make the bonds between families and cultures stronger. Many of your family's traditions and the language you speak will be passed on for generations to come.

The Native Americans who live in Nevada today, including Northern Paiute, Southern Paiute, Shoshone, and Washoe, are descendants of the people who lived here before. Native American traditions from long ago are still a part of Native American culture today. Paiute elders are very important because they hold knowledge of the old customs. Elders pass this wisdom to younger people to keep Paiute traditions alive. Think of a special elder in your life, like a grandparent or an older friend. What have you learned from that elder?

The native language of the Paiute people is also called Paiute. Paiute is spoken by more than 1,000 people in Nevada, California, Oregon, and Idaho. Many Paiute children are learning Paiute at home and school to help preserve their native language. Try practicing some of the Paiute words below.

one 1 su-mu-u	two 2 wa-ha-u	three 3 pa-he-u	four 4 wa-tsi-qui-u	five 5 ma-ne-ge-u	six 6 na-pa-he-u	seven 7 na-ta-kwa-tsu-kwe-u
eight 8 wo-kwo-sa-kwe-u	nine 9 su-mu-ka-doo-o-u	ten 10 su-mu-ma-no-u	deer  tu-hu-chah	fish  pa-kwe	girl  za-a or sua-a	house  no-be
autumn  yu-ban-no	boy  nat-se	rabbit  ka-mu	spring  ta-ma-no	summer  ta-tza	winter  tom-mo	



Hunting and Gathering: The Original Supermarket

Ka-mu: Native families spent a lot of time collecting food. They did not collect food by the pound like in this activity, but this activity shows how much food was needed for survival and why our grocery bags are so heavy each week!

Most native people moved seasonally to follow food sources. Native people also traded foods with other groups to add variety to their meals. Hunting and gathering food consumed a lot of time. Today, it is easy for us to go to the grocery store and have access to anything we could possibly need. The native people spent a lot of time gathering seeds, pine nuts, berries, roots, leaves, stalks, and bulbs. Their main sources of meat came from fishing or hunting deer, elk, duck, and rabbit.

Directions: Help this family of four figure out how much food they need for the week. The family will gather, hunt, or trade to get the right amount of food.

1. If each person eats approximately 3 pounds (lb) of food each day, how many pounds of food will this family of 4 need for 7 days?

4 people x 3 lb of food/day = ____ lb/day x 7 days = ____ lb of food/week

2. The family needs 40 lb of deer. If each deer provides about 80 lb of food, how many deer will the family need? ____

How many extra pounds of meat will the family have? ____ lb

Maybe they can trade the extra meat with their neighbors in exchange for another type of food.

3. Indian ricegrass seed was ground into a meal and used to bake a type of bread or added to soups.

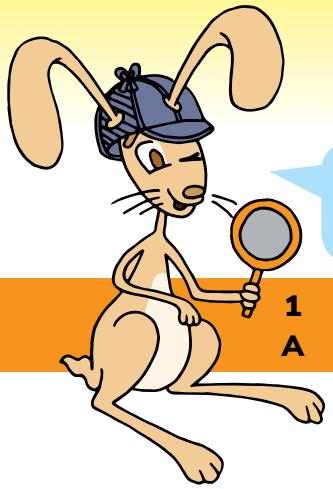
If each person eats about 2 lb of Indian ricegrass seed each week, how many pounds does the family need? ____ lb

4. Pinon nuts are small and come from the pinecones of the tree. They can be roasted and have a slightly buttery flavor. If 30 cones provide 1 lb of pinon nuts, how many cones does the family have to gather to get 5 lb of nuts? ____ cones

5. Many parts of a cattail are edible and can be prepared in numerous ways. If 5 cattail roots equal 1 lb, how many roots must the family gather to get 25 lb? _____

6. If 6 duck eggs equal 1 lb, how many duck eggs does the family need to equal 6 lb? ____ eggs

40 lb of deer + 8 lb of Indian ricegrass seed + 5 lb of pinon nuts + 25 lb of cattail roots + 6 lb of eggs = 84 lb of food



Desert Decoder

Ka-mu: Learn about the natural uniqueness of the area by using your detective skills and the secret code.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
A	B	C	D	E	F	G	H	I	K	L	M	N	O	R	S	T	U	V	W	Y

Once covered by a massive __ __ __ __ and then a __ __ __ __ __ __ environment, this area is now a
11, 1, 10, 5 12, 1, 15, 16, 8, 21

__ __ __ __ __ __. A desert is an area that usually gets less than __ __ __ inches of rain per year. The
4, 5, 16, 5, 15, 17 17, 5, 13

Grimes Point Archaeological Area and Hidden Cave are in the western __ __ __ __ __
7, 15, 5, 1, 17

__ __ __ __ __ Desert, which is the largest desert in the United States. The temperature can be very hot,
2, 1, 16, 9, 13

more than 115° Fahrenheit in the __ __ __ __ __ __ , or sometimes quite cold, minus 30° Fahrenheit in the
16, 18, 12, 12, 5, 15

winter. The Great Basin Desert covers most of __ __ __ __ __ __ and parts of Utah, California, Oregon,
13, 5, 19, 1, 4, 1

and Idaho. Since the Great Basin Desert is so large and includes a range of __ __ __ __ __ __ __ __ __ __ ,
5, 11, 5, 19, 1, 17, 9, 14, 13, 16

it has an extremely diverse population of plants and animals—more than 800 plant species and more than 60 __ __ __ __ __ __ species. This desert gets most of its water from __ __ __ __ __ __ __ __ .
1, 13, 9, 12, 1, 11 16, 13, 14, 20, 6, 1, 11, 11

Water from the Great Basin Desert has no outlet to the __ __ __ __ __ and instead deposits water into
14, 3, 5, 1, 13

many __ __ __ __ __ __ that do not reach the ocean. The Great Basin Desert is considered a __ __ __ __
15, 9, 19, 5, 15, 16 3, 14, 11, 4

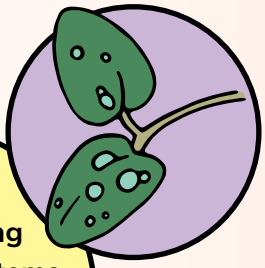
desert because it is at a higher elevation than other deserts, including the Mojave and Sonoran Deserts, which __ __ __ __ __ __ it on the south.
2, 14, 15, 4, 5, 15

Desert Plant Adaptations

Ka-mu: Did you know that to survive, different plant types need different conditions—specific temperatures, amounts of sunshine and shade, and amounts of water. This is why palm trees are not in Alaska and why aspen trees are not in Florida. This page will tell you how the plants in the Great Basin Desert survive there.

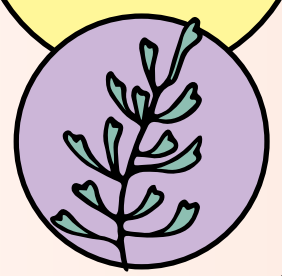
Plants have adapted over time to the changing Great Basin landscape. These adaptations help the plants survive in desert conditions. It is quite amazing that more than 800 plant species live in the harsh environment of the Great Basin Desert.

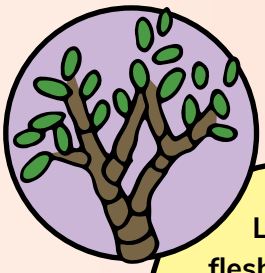
The following are some common ways plants have adapted to living in the Great Basin Desert.



A thick, waxy covering on leaves and stems helps plants lose less water and stay cooler.

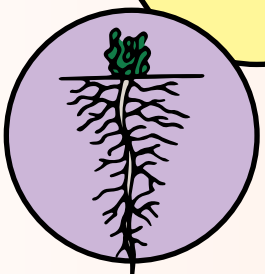
Small leaves absorb less heat than large leaves, keeping the plant cooler.



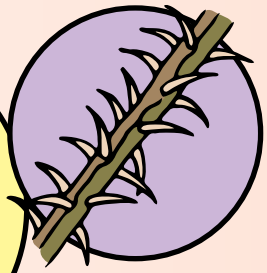


Large, fleshy stems mean plants can store more water.

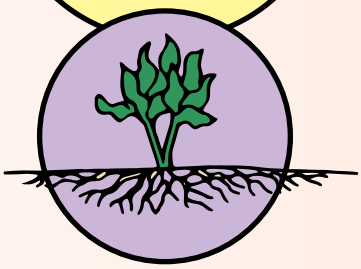
Deep tap roots help plants reach groundwater.



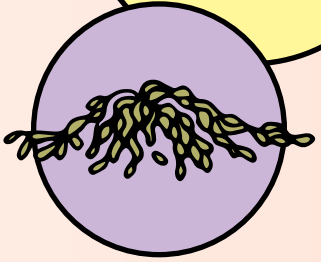
Thorns and spiky or hairy leaves protect plants from extreme temperatures, wind, and animals.



Widespread, shallow roots help plants absorb the maximum amount of precipitation.

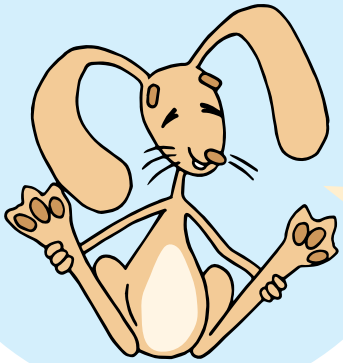


Some plants lie dormant, or rest, saving energy until it rains or snows.



Directions: The desert can be quite vibrant with color. Add color to the plants that live in the Great Basin Desert on the next page.


littleleaf horsebrush
Great Basin popcornflower
greasewood
shadscale saltbush
Bailey's greasewood
smoothstem blazingstar
desert dandelion
Shockley's desert-thorn
cobwebby thistle
Indian parsley
desert globemallow
Indian ricegrass
rubber rabbitbrush
yellow spiderflower
carveseed
Indian paintbrush
desert princesplume
winged four o'clock
bud sagebrush
sand verbena



Desert Wildlife Adaptations

Ka-mu: Many people think wildlife cannot live in the desert. This is not true! I am a jackrabbit, and I live in the Great Basin Desert. When I am hot, my large ears help me cool off. The soles of my feet are covered with fur, which protects them from the heat of the ground. My fur is also a light color, which absorbs less heat than dark fur. Read on to learn what other animals do to survive here.

In addition to plants, the Great Basin Desert is home to many animals that are adapted to the environment. The two main ways animals adapt to the desert is by coping with temperature extremes and living with limited amounts of water. Animals also have physical adaptations. If you walk quietly and look carefully, you may spy some of the desert inhabitants. Remember not to feed or pet any wild animal. For their safety and yours, always observe wildlife from a distance.

Some other ways animals have adapted their behavior to live in the desert include:

- Avoid hot temperatures by being active at night or at dawn and dusk.
- Stay in the shade of plants and rocks to be cooler.
- Burrow in the ground to stay cooler.

Directions: Draw a line from the animal to its special adaptation.

When desert temperatures get too hot or when flower nectar becomes low, this tiny bird moves up to higher elevations or more temperate climates.

This small mammal lives in a burrow during the day to avoid extreme heat. It also consumes water from its food, which is stored in cool areas collecting moisture.

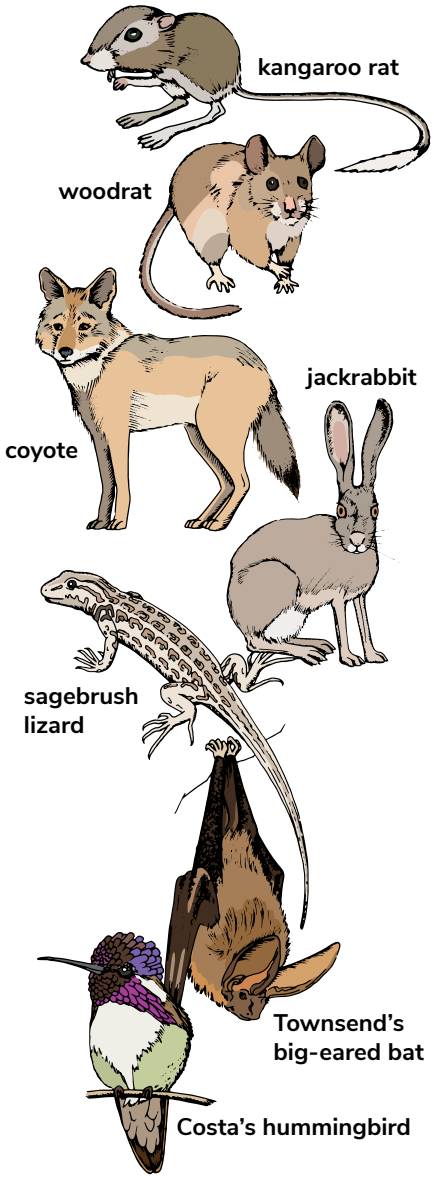
This animal has big ears with numerous blood vessels that dilate, radiating heat to keep it cool.

This small mammal is also known as a pack rat and builds large and complex dens made out of prickly pear cactus, sticks, debris, and trash left by people. Each shelter includes an underground nest to stay out of daytime heat.

This predator loses its thick winter coat in the spring and has a thin summer coat.

This reptile likes the heat, but if it gets too hot, it goes inside a burrow. This animal survives the cold desert winters by hibernating to conserve energy.

This flying mammal finds shelter in a cave throughout the day and hibernates in the winter.



BUREAU OF LAND MANAGEMENT

JUNIOR RANGER

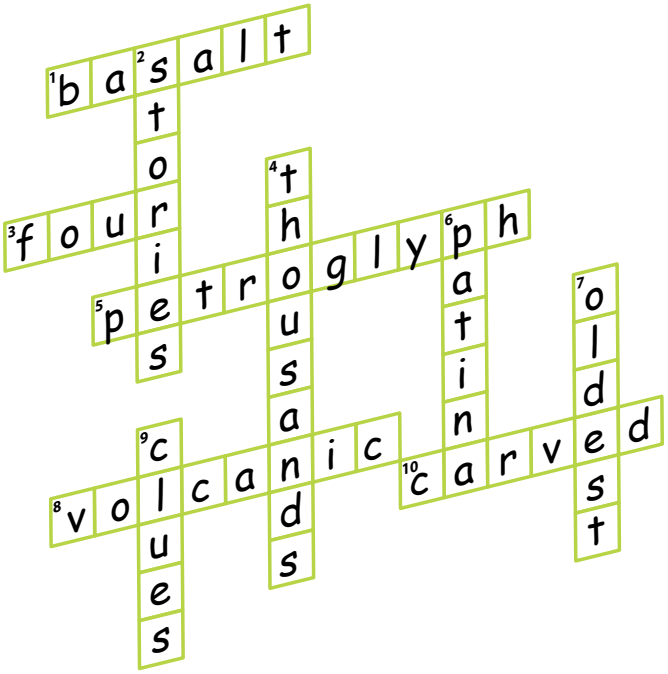
As a Bureau of Land Management Junior Ranger, I promise to:

- Do all I can to help preserve and protect the natural and cultural resources on our public lands.
- Be aware of how my actions can affect other living things and the evidence of our past.
- Keep learning about our important heritage.
- Share what I have learned with others.

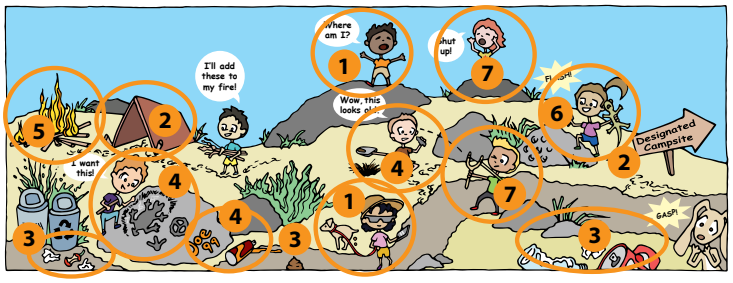
Ranger Signature _____ **Date** _____

Answer Key

Grimes Point Crossword



Stewardship: Protecting Our Past



Geological Transformation Over Time

E	E	I	P	R	F	W	A	M	R	L	J	L	O	R	E	T	B	J	O
D	V	V	Y	L	E	O	B	R	A	Y	A	F	O	V	L	M	A	H	A
V	V	B	R	T	A	O	T	X	T	N	E	E	A	S		P	S	T	Q
N	A	X	L	A	U	N	L	W	G	I	M	C	Y	K	A	P	A	R	Z
S	L	A	S	L	C	E	T	U	T	B	F	C	O	I	T	R	L	O	E
P	N	K	D	K	O	H	A	S	O	P	F	A	L	T		E	T	V	K
D	P	E	T	R	O	G	L	Y	P	H	D	C	S	S	A	A	I	Q	Q
A	R	C	H	A	E	O	L	O	G	Y	U	L	A	T	C	D	N	I	I
S	C	U	L	T	U	R	A	L	I	Z	N	A	N	V	E	C	N	R	I
P	L	L	A	F	W	O	N	S	Q	E	E	K	I	N	T	J	O	C	H
R	A	Q	M	L	E	T	A	V	A	C	X	F	C	K	D	T	I	E	S
E	L	T	T	R	A	D	I	T	I	O	N	E	C	W	E	R	M	T	D
H	D	G	R	D	V	I	L	C	S	B	X	G	Q	C	O	V	I	U	R
I	R	D	K	M	E	R	C	S	Y	G	F	K	T	T	M	M	M		A
S	E	H	C	A	C	S	E	E	O	J	N	T	S	B	Q	A	R	A	W
T	R	U	X	I	R	H	E	H	R	I	J		T	H	U	N	T	P	E
O	G	J	R	C	F	N	A	R	T	S	H	R	S	I	O	W	U	Y	T
R	H	D	Z	E	B	T	E	A	T	A	Z	E	W	W	C	N	T	C	S
I	Z	P	J	V	J	E	P	E	I	O	G	H	F	P	D	I	J	Y	C
C	K	E	F	I	L	D	L	I	W	E	K	H	S	R	A	M	M	N	O

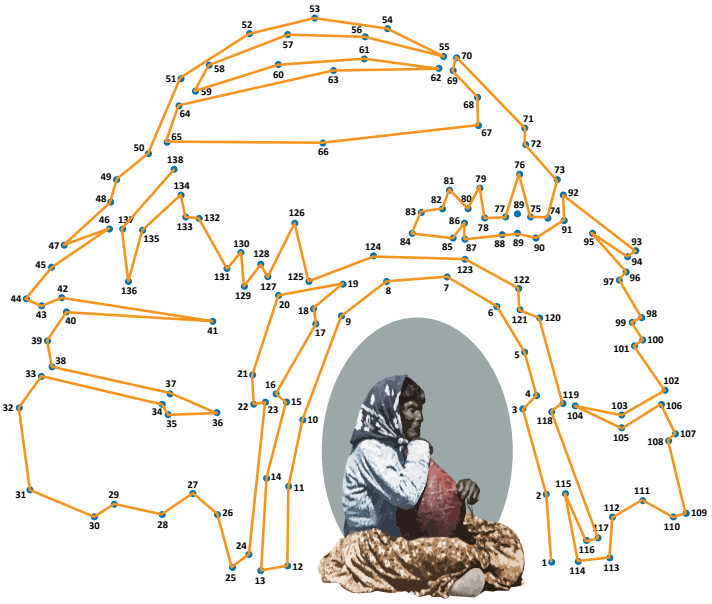
Hidden Cave: The Age of Artifacts

A: Sediment	500 years ago
B: Netting for catching fish, basket fragment, bone awl, stone arrow point	6,900 years ago
C: Mazama ash, animal bones	7,500 years ago
D: sand and gravel, fish fossils, plant fossils	10,000 years ago

Intro to Archaeology

Egyptologist	Underwater archaeologist	Aerial (satellite) archaeologist	Industrial archaeologist	Zooarchaeologist
hieroglyphics	coins	geoglyph	bridge	cat
mummy	shipwreck	trails	railroad	horse
pyramid	jewelry	city	cabin	dog

Who are the Cattail Eaters?



Hunting and Gathering: The Original Supermarket

1. 12 lb/day and 84 lb/week
2. 1 deer and 40 lb
3. 8 lb
4. 150 cones
5. 125 roots
6. 36 eggs

Desert Decoder

Once covered by a massive **LAKE** and then a **MARSHY** environment, this area is now a **DESERT**. A desert is an area that usually gets less than **TEN** inches of rain per year. The Grimes Point Archaeological Area and Hidden Cave are in the western **GREAT BASIN** Desert, which is the largest desert in the United States. The temperature can be very hot, more than 115° Fahrenheit in the **SUMMER**, or sometimes quite cold, minus 30° Fahrenheit in the winter. The Great Basin Desert covers most of **NEVADA** and parts of Utah, California, Oregon, and Idaho. Since the Great Basin Desert is so large and includes a range of **ELEVATIONS**, it has an extremely diverse population of plants and animals—more than 800 plant species and more than 60 **ANIMAL** species. This desert gets most of its water from **SNOWFALL**. Water from the Great Basin Desert has no outlet to the **OCEAN** and instead deposits water into many **RIVERS** that do not reach the ocean. The Great Basin Desert is considered a **COLD** desert because it is at a higher elevation than other deserts, which **BORDER** it on the south.

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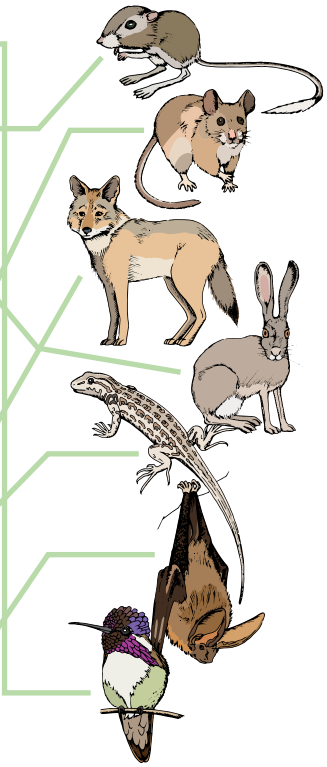

Resources

Cultural resources are fragile and irreplaceable. They are a very important part of our nation's heritage. Management of cultural resources on public lands is mostly determined by the Federal Land Policy and Management Act of 1976 (FLPMA). Consistent with FLPMA, the BLM follows the same multiple use principles and planning and decisionmaking processes that are followed in managing other resources on public lands.

The BLM manages cultural resources as mandated by other federal laws and policies as well, like the Archaeological Resources Protection Act and Section 106 of the National Historic Preservation Act of 1966.

Places Managed by the BLM

BLM Stillwater Field Office
5665 Morgan Mill Rd.
Carson City, NV 89701
https://blm.gov/office/stillwater-field-office

Hidden Cave and Grimes Point Archaeological Area
https://www.blm.gov/visit/grimes-pointhidden-cave-archaeological-site

Sand Mountain Recreation Area
https://www.blm.gov/visit/sand-mountain-recreation-area

BLM Archaeology
https://www.blm.gov/programs/cultural-resources/archaeology