



# Dominguez-Escalante NCA

## Junior Ranger Program

Use this printable guide to take notes while you're out exploring!

### Introduction

Welcome to Dominguez-Escalante National Conservation Area (DENCA). It covers a whopping 210,172 acres. That is half the state of Connecticut! It was established by Congress in 2009. The Bureau of Land Management (BLM) manages these public lands to protect sensitive resources while also allowing for traditional uses such as livestock grazing, hunting, and recreational activities. Dominguez-Escalante NCA includes the 66,280-acre Dominguez Canyon Wilderness.

The NCA is a diverse landscape with terrain ranging from dry, high desert plains to ponderosa forests, to deep red-rock canyons and sandstone bluffs edging along the nearly 30 miles of Gunnison River that flow through the NCA. You will come across breathtaking views, as well as rare plants and geologic features. Many animals call this place home, such as desert bighorn sheep, deer, elk, mountain lion, black bear, wild turkey, golden eagle, and the collared lizard. Keep an eye out for them!

More than nature can be found in Dominguez-Escalante. The NCA protects many petroglyphs that attest to the thousands of years that Native Americans, more specifically the Utes (known to themselves as **Nuuchu**) have used and still use the area. Traces of the early miners and settlers who lived and worked in the area are also evident.

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#### **Fun Fact!**

Do you know how Dominguez-Escalante National Conservation Area got its name? Two Spanish priests named Atanasio Domínguez and Silvestre Vélez de Escalante traveled through this area in 1776! They were looking for the best way to get to the new missions in Monterrey, California from Santa Fe, New Mexico. It was a long and difficult journey and ultimately, they had to turn back. However, the journals and maps they created on their travels helped other settlers who came after them understand this landscape.



COLORADO CANYONS  
ASSOCIATION

FOSTERING COMMUNITY STEWARDSHIP OF OUR NATIONAL CONSERVATION LANDS

## Instructions

### To get a badge:

The number of questions you will need to complete depends on how old you are. For anyone under 10 years old, that number is your age. For example, if you are 8 years old, you will need to answer 8 questions. If you are 10 or over, you must complete 10 questions total. There are 8 questions which can be completed anywhere within Dominguez-Escalante NCA. There are also suggested trails and recreation sites, which each have **3-6** questions specific to that location. You can decide which locations look best for you! A QR code with the location is paired with each site. It is highly recommended you read

→ **FILL THIS IN :** I am \_\_\_\_ years old, so I need to complete \_\_\_\_ questions.

### Once you have completed all your questions you can:

1. Head over to [coloradocanyons.org](http://coloradocanyons.org), take the Junior Ranger Pledge, and certify that you've completed the program!
2. Visit the Montrose Public Lands Center, Delta Library, or Grand Junction BLM Field Office to pick up your badge.

### Materials needed:

- Notebook/paper
- Writing utensils
- Colored pens/pencils or crayons

### Useful Extras (download while you have Wi-Fi or cell service)



COTREX: Navigation app and website, linked throughout this program.



Seek: Helps identify plants, insects, fungi, and animals.



Merlin: Bird identification app with photos, maps, and sounds.



Rock'd: Explore the geology around you in depth.



## Leave No Trace

Before heading out, it is important to go over the 7 Leave No Trace principles, created to keep you safe and to protect these special places.

### 1. Know Before You Go

Being out in nature is rewarding, but it can be unforgiving for those who are unprepared. Many places in the NCA are remote, meaning cell service can be weak or non-existent. Be sure you have everything you need for a fun and comfortable day and that you have re-researched the places you are going to visit. Let someone know where you are going and always check the weather before leaving.



### 2. Stay on the Trail

Although tempting to explore every inch of the NCAs, it is in everyone's best interest to stay on designated trails and routes. You will be safer this way. Plus, plants and sensitive soil will thank you!

### 3. Trash Your Trash

Most times, a trash can will not be readily available. It is important to take any trash out of the NCA. Bonus points for picking up after someone else!



### 4. Leave What You Find

The NCAs hold a lot of stories and history. If you think you have found something significant, such as a fossil or pieces of pottery, let the BLM know! Take as many pictures as you would like! But removing items like this means you are taking a piece of a story that we could all learn and benefit from.

### 5. Be Careful with Fire

Wildfires are a serious threat in Western Colorado. Understand the rules for fire usage to avoid injury to yourself and the environment.

### 6. Respect Wildlife

Many animals call the NCAs home. Be sure to give them space and be kind if you are lucky to spot any critters. Do you know the rule of thumb? If you hold out your thumb and you can cover the animal, you are at a great distance!



### 7. Be Kind to Other Visitors

Public lands belong to everyone. When you come across someone else enjoying public lands, give them a wave. We are all outside enjoying the National Conservation Areas for different reasons, let's all respect the experiences happening out here!

## Test Your 'LNT' Knowledge! Are these scenarios okay, or no way?

Answers on the bottom of the page.

1. You spot a Desert Bighorn Sheep in Escalante Canyon grazing! It looks super cool so you decide to get as close as you can to it to, snap a picture, and show all your friends at school. Okay or no way? \_\_\_\_\_
2. You learned about sensitive soil for the first time last week and while at the Upper Big Dominguez Campground, you get to see some from the trail! Your friend who does not know much about the area starts to walk on it. You tell them to follow an existing trail because the soil is fragile and can take years to recover. Okay or no way? \_\_\_\_\_
3. You and your family are camping at the Potholes Campground in Escalante Canyon and make a fire in the metal fire ring to sit around at dinner. Before going to bed, you put your trash and leftover food into the fire and decide to let the fire die out on its own. Okay or no way? \_\_\_\_\_

## General Questions

*These questions can be answered from any spot inside Dominguez-Escalante NCA!*

1. Dominguez-Escalante NCA is full of dramatic cliffs and rocky slopes. Some of the major geologic formations found here are what is left of ancient mountains, prehistoric sand dunes, and rocks from when this part of the country was covered in water hundreds of million years ago. Make a sketch of a cliff or canyon wall. Afterwards draw lines where you see a border between different types of rock. How many layers did you draw?



2. Desert Bighorn Sheep live throughout Dominguez-Escalante NCA on steep, rocky slopes. They are excellent at balancing on their small hooves and can move quickly over difficult terrain. All bighorn sheep have horns, although the males are bigger. Female bighorn sheep's horns are only a few inches long and are mostly straight, while males' horns start to curve and grow into large spirals when they are about a year old.



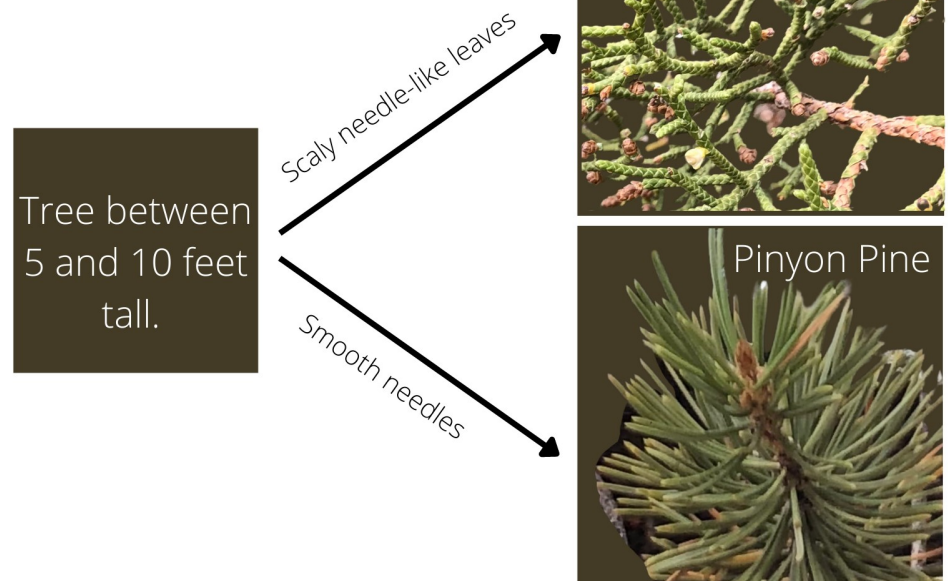
Did you see any bighorn sheep while you were in Dominguez-Escalante NCA or signs of them?

If yes, do you think they were male or female? Look at their horns to tell.

3. Utah Junipers are a widespread and important tree found throughout the National Conservation Area. When you are identifying living things and do not have access to the internet, a dichotomous key can be a very helpful tool. "Dichotomous" is a word that means "split into two". At each step, you will come across a question with two possible outcomes. You keep going until your identification is made. A **dichotomous key** is an important scientific tool to identify different **organisms** based on observable traits. See if you can identify a Utah Juniper by using the simplified dichotomous key below.

Were you able to identify a Utah Juniper using the key?

What are some advantages and disadvantages of using a dichotomous key?



4. There are several species of lizards that are common to see here, including the Plateau Fence Lizard, Common Sagebrush Lizard, Eastern Collared Lizard, and the Whiptail Lizard. Lizards are a type of reptile, and they are **ectothermic** or “cold blooded”: Reptiles cannot make their own body heat like people do, so they need to get heat from outside sources like the sun. Reptiles must raise their body temperature to get enough energy to run and hunt. That is why you often see lizards and other reptiles basking in the sun.



Humans are mammals, so our bodies are very different. We are **endothermic**, or “warm blooded,” which means we make our own body heat. We sweat when it is hot outside to cool off, and we might shiver if it is cold outside to make heat. Overall, we can keep our temperature stable. However, not all mammals can sweat. Dogs can only sweat through their feet, so they also pant to cool off. Panting releases heat the same way sweating does, through **evaporation** (when a liquid becomes a gas).

Find out the temperature outside and your own body temperature. If you do not have a thermometer, the normal range for human body temperature is 95.9-99.6° F.

What is higher, your body temperature or the air temperature? \_\_\_\_\_

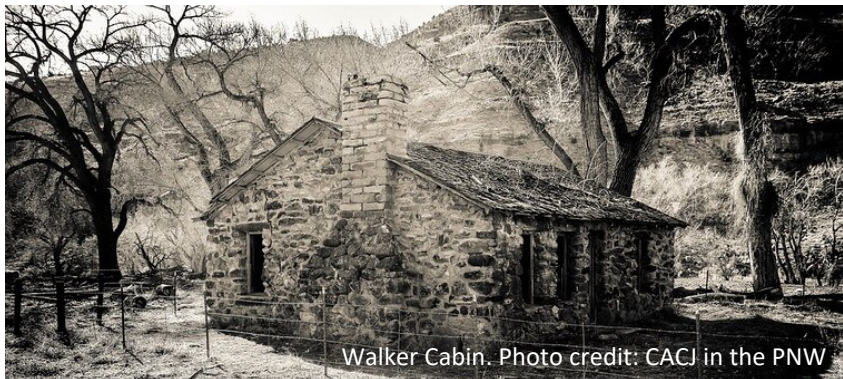
What do you think would happen if you sat outside for 10 minutes in the open sun? What about in the shade of a rock?



5. Many different people have lived in Dominguez-Escalante NCA. There is an abundance of evidence showing us that the Ute people thrived in what is now called the Dominguez-Escalante NCA. Ute people moved seasonally throughout the year, going from high mountains in the summer to warmer valleys and low areas in the winter to avoid extreme heat and cold. They constructed wickiups or ***nuu ivi kahn***, a word that means Ute stick home (made of broken timber and brush) or found rock shelters. Driving through Escalante Canyon you can also find evidence of old cabins, such as the historic Walker Cabin built in 1911. Many ranchers or farmers lived year-round in one place and grew or purchased their food. In fact, the climate of the area was prime for fruit trees and today, there are still commercial orchards on private land within



Photo courtesy of Western History/Genealogy Department, Denver Public Library



Walker Cabin. Photo credit: CACJ in the PNW

the NCA. Along Escalante Canyon Road and other roads within the NCA we see modern houses like what you or your friends might live in.

Think back to any time in the past; if you were to live in Dominguez-Escalante, what would your dwelling look like? Would you prefer to move with the seasons or have a piece of land? Draw or describe your dwelling below.

6. The North Branch of the Old Spanish Trail, and later the Salt Lake Wagon Road, snakes its way through Dominguez-Escalante NCA. Even before Europeans used this route, the Utes were traveling along it to move around this area. This trail was the fastest way to get to California from Santa Fe, New Mexico, but it was also an incredibly difficult journey. The rough land discouraged the use of the wagon. To work around this, travelers equipped mules with an **aparejo**, or a pack saddle. Imagine you were travelling through this landscape with a pack of mules, transporting goods to California. Using the space below, write a letter to your family or friends describing your journey. What would be some of the challenges that you would run into?

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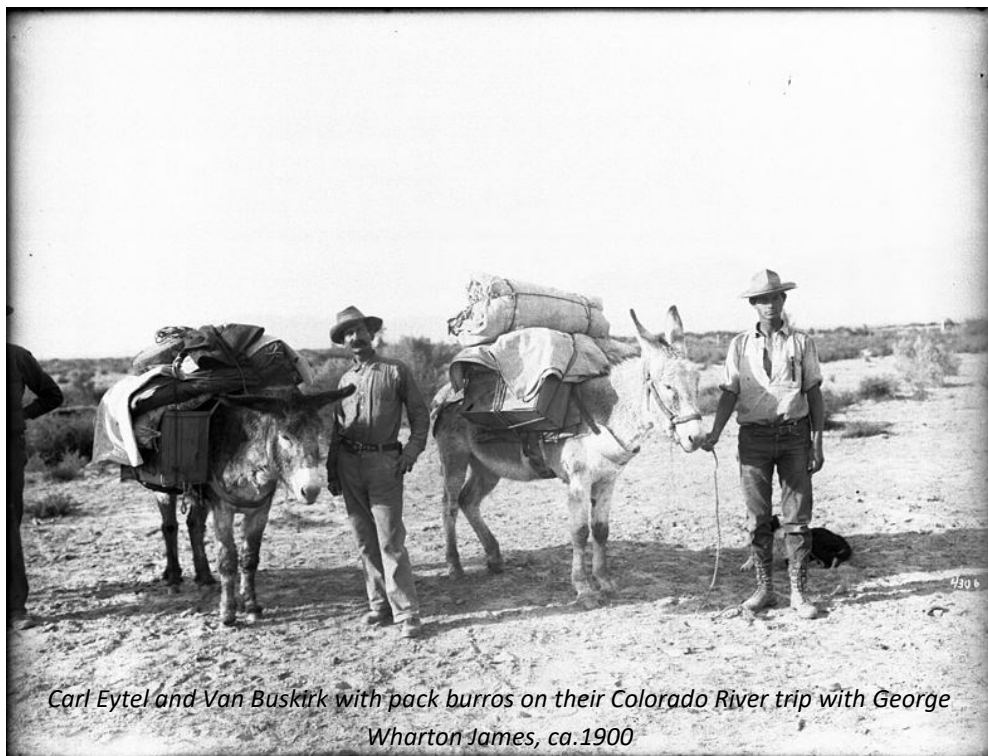
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7. Read the definitions below and then the following paragraph. See if you can find which definition fits the plant Cheatgrass!

**Native:** Native plants are plants that grow in a certain habitat and have evolved with the climate and landscape. They provide food, shelter, and many other great benefits for the other organisms who live in the area.

**Invasive:** Plants that come from a different part of the world and were brought on purpose or by accident. It can quickly take over an environment and takes advantage of the resources available in an area. It can even affect people's businesses and cause them to lose money.

In mid-summer, cheatgrass turns a reddish-purple color before it dries out and is light tan. It is not poisonous and does not pose an immediate threat to humans. But it has the potential to cause a lot of harm to humans via wildfires; it is highly flammable and is widespread in many desert environments. Its name “cheatgrass” gives us more clues about its impact; it cheats other plants by taking up nutrients and water from the soil before other plants can. This plant is very problematic.



What definition do you think best matches cheat grass: native or invasive?

## Escalante Boat Launch

*This site provides space for people to prepare for a float down the Gunnison River. There are many campsites along the way and the stretch is relatively flat; rafters will experience class I and II rapids.*

1. Find the free self-issue permit station at the boat launch. It is here so people can register which campsites they will use, and it gives BLM Rangers an idea of how many people are using this boat launch for future planning. Grab a permit.

How many launch and takeout locations are listed on the front? \_\_\_\_\_

Look on the back under “Conditions of Use”. How many people can be in a group?

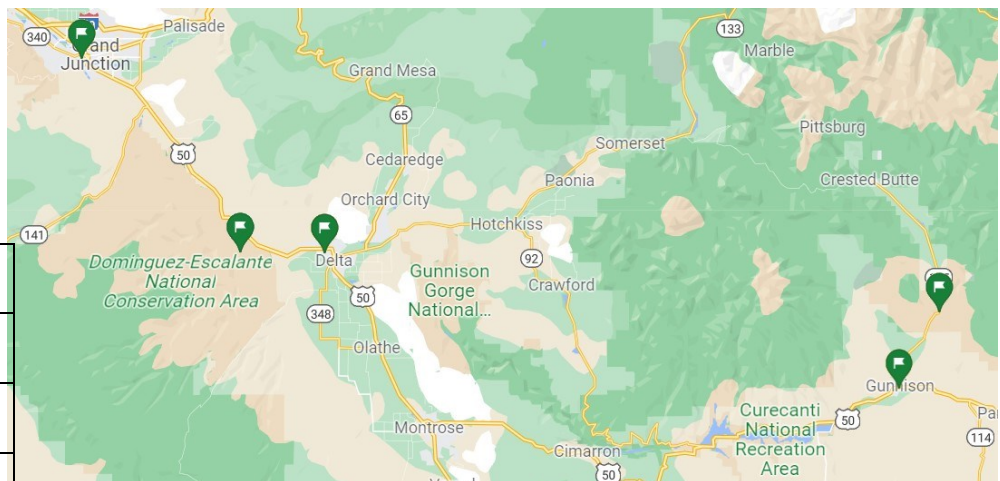
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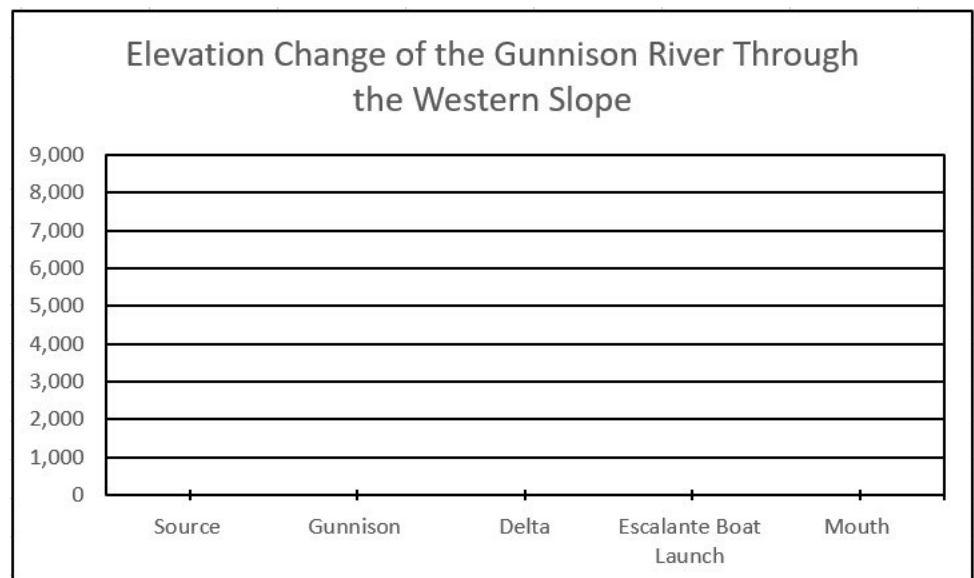
2. The Escalante Boat Launch is a place where people can release their rafts, canoes, and other watercrafts into the Gunnison River for a day of fun out on the water.

Unfortunately, people also release many other things into the river they should not - mainly, garbage. River pollution is no joke. What Leave No Trace principle are people not following when being careless with their trash on the river? (Alternative: Which Leave No Trace principles would be the most important to remember while on a river trip?)

3. The Gunnison River stretches 180 miles across the Western Slope and is a very important water source. Throughout time, communities surrounding the river have relied on the river for food, water, and irrigation. These communities are a part of the Gunnison River **watershed**. A watershed is a land area that drains rainfall and snowmelt and sends them to creeks, streams, and rivers. The water eventually ends travels to an outflow source, like the ocean, groundwater, or in this case a bigger river! Look at the map below which highlights locations in the watershed. Create a graph using the data in the table that illustrates the elevation changes the river undergoes, starting at the source east of Gunnison and ending at the mouth, where it meets the Colorado River in Grand Junction.



Source	8,008 ft
Gunnison	7,703 ft
Delta	4,953 ft
Escalante Boat Launch	4,810 ft
Mouth	4,553 ft



5. Personal Floatation Devices, or PFDs, are lifesaving and necessary when out or near moving water. River swimming conditions are very different than those of a lake, pool, or even the ocean. The water temperature in the Gunnison does not get much warmer than 70° F for most of the year, and there are rapids along its path that could sweep you away — quicker than you think. The United States Coast Guard reported that 84.5% of people who drowned while boating recreationally in 2017 were not wearing a life vest. They estimated over 80% of those people could have been saved if they were wearing a PFD. Imagine you were about to launch from the Escalante Boat ramp to float the Gunnison River and you saw your friend in their raft without a PFD. You bring it to their attention, but they say they are a strong and confident swimmer; they do not need one. How could you convince your friend that they need to put on their PFD?

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6. Near the Escalante Boat Ramp are quite a few panels of **petroglyphs**. Petra means stone and glyph means carve in Greek. These petroglyphs were created by Indigenous people who have lived here for thousands of years. Certain themes can be seen in petroglyphs, such as animals or people. Others are more difficult to figure out. Only those responsible for making rock art really know what they mean.

You may also see some bullet holes that surround the petroglyphs. This was done by modern visitors and is an example of vandalism. Please do not touch, carve, or disturb rocks on which they sit. The well-preserved petroglyphs are a cultural resource within DENCA.

Even more importantly, this is one of many connections for the Ute people living today to their past. Which Leave No Trace principle does this relate to? (Hint: Its best to *leave petroglyphs alone, only take photos.*)



## Escalante Canyon to Potholes Campground

*The road through Escalante Canyon provides easy vehicle and viewing access to historic cabins and trails, rock walls with early settler and Native American inscriptions, and spectacular geologic formations. You will eventually arrive at the Potholes Recreation Area, popular with extreme kayakers in the spring and picnickers in the summer. It is a great place to spend the day or camp out under the stars!*



1. Do not speed! Escalante Canyon is shared by many- both private ranches and public land border the road. Cows wander the road through open pastures, and other wildlife can be seen on the road, too. As you drive through Escalante Canyon, count how many cars you pass. Are there any other modes of transportation you encounter as you drive along?



- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

2. At the Potholes Campground you will find an informational kiosk. On this kiosk you can see the way the water is moving - clockwise or counterclockwise - and this is called a **current**. However, these currents can change quickly. Thunderstorms from higher elevations can cause a flash flood that moves through the narrow canyon and floods the potholes. Flash floods are very common in the canyons of Western Colorado and Utah; how do you think you could prevent yourself from getting caught in one? Read the kiosks for a hint!



3. Erosion and weathering are two processes you can easily observe in the potholes.

**Weathering** is when rock is broken down, and **erosion** is the name for when that rock is carried away.

The rocks at the pothole site and along Escalante Creek are made up of nearly 2-billion-year-old Precambrian rock. Although this dark-colored rock is extremely old and tough, the force of water over time is strong enough to break it down. When big storms and flash floods come through they create a very violent flow of water; this is called **turbulence**. Turbulence creates **eddies** which is a circular movement of water. This swirling water breaks down the rock it touches into a variety of sizes, from small gravel all the way up to boulders larger than bowling balls! These loose rocks keep spinning in the circular currents and help erode deep cylinders into this hard, ancient rock. These cylindrical potholes are still actively downcutting today and create currents that can easily trap swimmers.

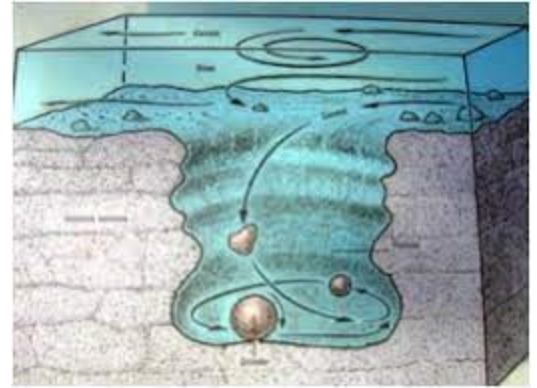


Photo credit: Geo.mtu.edu

Fill in the blanks below using the information you have learned!

How rocks change due to mechanical, organic, or chemical processes = \_\_\_\_\_

- Mechanical: water freezes and thaws in cracks
- Organic: plants help to break up or dissolve rock
- Chemical: breakdown of rock with water because of chemical reactions

How rocks move, happens after weathering = \_\_\_\_\_

- Wind, ice, water, gravity
- Weakest rocks undergo this the most

4. Potholes Campground is a great place to camp out in this NCA. A lot of families use this area to unwind from the busy world! But with use comes misuse– not everyone follows the third principle of Leave No Trace. See if you could help make the site more enjoyable for yourself and others by picking up three pieces of trash and packing it out (which means taking it out of the NCA with you). What type of trash did you pick up?



Photo credit: John Breitsch

5. The Piñon (or Pinyon) Pine is a tree that is important in this landscape due to the production of pine nuts found in its cone. Native people depended on the pine nut because it was a great source of fat and protein. A bird that zooms around this area also eats this nut; the appropriately named Pinyon Jay! The Pinyon Jay and Pinyon Pine have a **mutualistic** relationship, meaning both groups benefit from each other. Pinyon Jays rely on this nut to get their flocks through

winter. These birds have a busy summer harvesting and burying nuts in little groups called **caches**. The Pinyon Jay has a great memory and can remember where they hid their stash by using landmarks, but because of the number of nuts they bury it is not possible for them to go back to every cache. By burying so many nuts, new trees end up growing throughout the landscape. Win-win!

Pinyon Jays are a medium-sized blue bird with a long, sharp black beak. The head and back are a starker shade of blue than the belly, which is more of a dusty gray blue. The chin is also a light gray color. Pinyon jays frequently travel in large, noisy groups and their call is a series of nasal, crow-like caws (if internet is available, scan the QR code to hear samples). Select an area of pinyon pines to quietly observe for 5 minutes. How many pinyon jays did you see or hear?



## Lower Dominguez

*Big Dominguez canyon offers recreational activities and opportunities for solitude because it is a wilderness area. This is an area that has remained natural and undeveloped. Just like other parts of the National Conservation Area, following the 7 Leave No Trace Principles are very important to keep the wilderness protected. Follow the trailhead through the gates to the south, hike along the train tracks until you come across the second bridge and enjoy the views!*



1. Delta County gets 9 inches of rain per year. For comparison, the US averages 38 inches of rain per year. After crossing the bridge, the trail follows the Gunnison River south to the mouth of Big Dominguez Canyon. As you walk along the trail, to the right you will notice a manmade irrigation ditch that is still functional today. Water in the ditch is diverted from Big Dominguez Creek, flowing north to irrigate ranch pastures at Bridgeport. Without these human interventions, do you think this land could sustain some of our activities today, like ranching? Why or why not?

2. The railroad through Dominguez-Escalante NCA was first laid down in the 1880s. This “narrow-gauge” track was smaller than the standard, which was needed here at the time because of the rugged mountain and canyon landscape. The Bridgeport station was in operation between 1883 and 1961, hauling passengers and freight north to Grand Junction and south to Delta and Montrose. People lived very spread out back then, so the train provided a convenient method of transportation. In the 1980s the line was upgraded to allow for transporting coal out of the North Fork Valley.

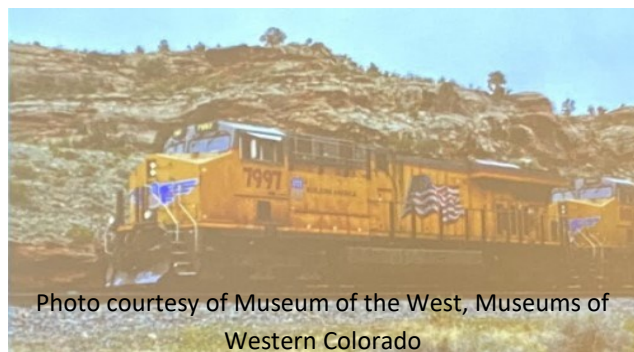


Photo courtesy of Museum of the West, Museums of Western Colorado

Trains are still active here, so you should be very cautious when walking near or crossing the track. Never walk on the track itself and only use the designated crossing.

The train tracks here run along a river, what is the name of the river?

3. The Big Dominguez trail provides access to the Dominguez Canyon Wilderness, a special designation of land within the NCA. Wilderness areas are special because they are the most natural type of public land we have- to be named a wilderness area, a place needs to have almost no evidence of human activity and provide opportunities for people to

*“A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.”*

- Howard Zahniser, lead author of the Wilderness Act of 1964

freely explore and connect with nature. There are rules protecting wilderness to keep it this way, like the rule prohibiting mechanized and motorized equipment. This means no cars, no bicycles, and no power tools! Just like there are special areas designed for people to ride bikes and ATVs, there are special places designed for other activities too.

Reflect — Why do you think we want to keep places wild?

4. Imagine you are a scientist studying fossils! 155 million years ago, a warm and wet environment was found across most of North America. The rocks from this time are known as the Morrison Formation, which preserve not only traces of rivers and floodplains but also dinosaurs like Stegosaurus, Allosaurus, and Brontosaurus. The Morrison Formation is easily recognized by the bright, multi-colored slopes it forms and is found throughout the National Conservation Area. Can you see it from where you are standing?

***Fun Fact!***

Did you know the stegosaurus is the state dinosaur of Colorado? Not many states have an official dinosaur!

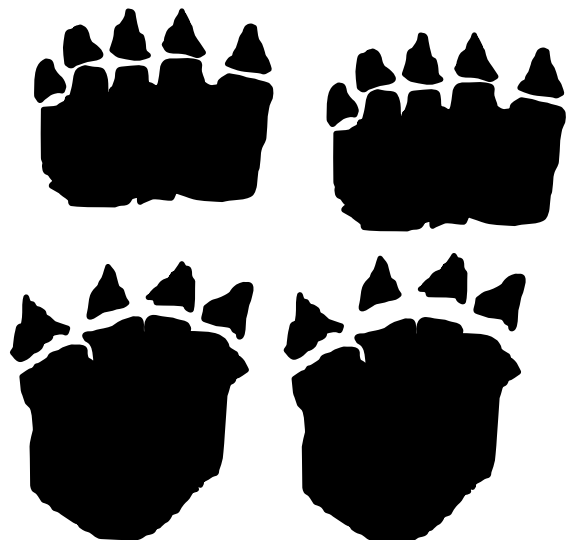
You come across two different sets of footprints in the Morrison Formation. You must identify each set based on the information you know:

- Stegosauruses were herbivores (plant-eaters). These herbivores were very large animals whose feet and legs needed to be very sturdy—both to support their hefty weight and to carry them as they foraged for large amounts of plants.
- Allosauruses were predators (animal-eaters). They walked and ran on powerful hind legs equipped with bird-like feet and claws.

Which dinosaur goes with each set of footprints?

A) \_\_\_\_\_

B) \_\_\_\_\_





## Cactus Park

*This area provides rich opportunities for motorized vehicle enthusiasts. You can also hike, bike, and ride horses here. Cactus Park houses part of the 142-mile Tabeguache Mountain Bike Trail. There is wilderness access in Cactus Park too.*



### Helpful Acronyms

OHV = Off Highway Vehicle

ATV = All-Terrain Vehicle

UTV = Utility Task Vehicle

1. Part of OHV etiquette is to let other riders know how many riders are in your party when passing them. For example, if you are riding with 4 friends and you pass another group, you should let them know you have 4 more people coming behind you that will pass by them by holding up 4 fingers. If you are the last one in your party, you make a fist with your hand. This helps riders share the trail safely.



#### **Two Riders Behind Me**

Two fingers means you have two riders behind you.



#### **One Rider Behind Me**

One finger means you have one rider behind you.



#### **I'm the Last Rider**

A closed fist means you're the last vehicle in your group.

*Courtesy of Stay the Trail*

What was the largest group of people you saw riding? How many people, and how many vehicles (ATVs, UTVs, dirt bikes, etc.)?

2. You are an OHV land planner! Look around the Cactus Park OHV staging area as inspiration. Draw out an OHV area with trails, a parking lot, and protected areas. Include trails with different difficulty levels, where would you place them in relation to the staging area? How would you balance the needs of people, plants, animals, and other living things so we can all have fun while protecting the land?

3. It is necessary to wash your machines, so you get dirt and plant debris out of there! That way, you do not spread invasive plant species. An invasive species is something non-native to the area, brought over by humans, can quickly spread (learn more on pg. 9). When it begins to grow where it does not naturally belong, it may not leave room for native plants to grow, therefore harming the natural ecosystem. Why is it important to remove all the mud and debris from our OHVs? What are some other ways invasive plant species can be spread by humans? (hint: think about where mud sticks on bikes!)

4. Some place names in the area come from Ute words and names; you travel through Unaweep Canyon along the Unaweep-Tabeguache Scenic Byway to get to Cactus Park in DENCA, which is part of the Uncompahgre Plateau.

◇ Uncompahgre means “where the red water is.”

◇ Unaweep translates to “canyon with two mouths,” or “parting of the waters.”

Tabeguache (pronounced TAB-a-wash) is a Ute word said to mean “People of Sun Mountain,” referring to what is now known as Pike’s Peak near Colorado Springs. Chief Ouray, one of the most famous Ute chiefs, was part of the Tabeguache Band. Find the poster kiosk next to the bathroom at the main staging area and locate the Tabeguache Trail on the map. Using the map key, about how long is this section of the trail?

\_\_\_\_\_ miles

5. Desert ecosystems are delicate. Fragile soils and plants are found throughout the NCA, so land managers create rules to make sure these organisms have a good chance of survival and will not be too disturbed by people recreating.

The first sign you encounter after turning off Highway 141 into Cactus Park, on the right side of the road, describes rules for travel. Select which methods of travel must remain on existing routes:



## Upper Big Dominguez

*The Upper Big Dominguez Campground has tables and firepits for a fun camping adventure. The Dominguez Creek flows through this area and adds to the beautiful scenery. You can access the wilderness from the trailhead and hike many miles.*



1. There is an old sign when you turn left off Divide Rd onto 24 4/10 Rd to head towards the campground. What was this area called in the past?

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2. When out on a patrol, rangers are always monitoring the use and resource condition to ensure areas stay nice and are not getting too overcrowded. Rangers take notes of how many people use recreation sites, what kind of use is taking place, how busy a place is, and if anything is damaged or dirty. There are two campsites across from the trailhead and several more across the stream. How many are currently being used? What kind of camping set ups do people have (tents, RVs, etc.)?



3. Trees that spread their seeds using cones are called **coniferous**. These types of trees are also known as **evergreens**, because they typically have needle-shaped leaves that remain on the tree year-round. Three of the evergreen tree species around this area are the Ponderosa Pine, Pinyon Pine, and Douglas Fir.



Ponderosa pinecones can be 2.5-6 inches long and have little spikes on the ends of the scales. If you roll one between your hands, you will feel the spikes.



Pinyon pinecones are much smaller and rounder. The open cones look sort of like flowers.



Douglas fir cones are also small, between 2 and 4 inches long. Look for small scales that are said to look like the back legs and tail of a mouse poking out.

Find a cone and identify it based on this information. What did you find?

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## Glossary

**Aparejo** - a packsaddle to carry heavy and bulky loads, usually on mules

**Cache** - a collection of items of the same type stored in a hidden place

**Coniferous** - a tree that bears cones and needle-like or scale-like leaves that are typically evergreen

**Current** - a body of water or air moving in a definite direction

**Dichotomous Key** - a tool created by scientists to help identify objects and organisms

**Ectothermic** - an animal that is dependent on external (outside) sources of body heat

**Eddy** - a circular movement of water, against a main current, causing a small whirlpool

**Endothermic** - an animal that can make its own body heat

**Erosion** - the movement of rock caused by ice, wind, water, and gravity

**Evaporation** - the process of turning from liquid into gas

**Evergreen** - relating to a plant that has green leaves throughout the year

**Invasive** - a species that has become a weed pest; a plant which grows aggressively, spreads, and displaces other plants

**Mutualism** - a relationship between organisms that is beneficial to both involved

**Native** - a term to describe plants that occur naturally in a region, ecosystem, or habitat without human introduction

**Nuuchu** - the Ute's tribal name in their native language

**Nuu ivi kahn** - Ute word for stick home or wickiup

**Organism** - an individual animal, plant, or single-celled life form

**Petroglyph** - an image created by removing part of a rock surface by methods like chipping

**Turbulence** - fluid motion characterized by chaotic changes in pressure and speed of flow

**Watershed** - an area or region where all water is drained by a river, river system, or other body of water

**Weathering** - the breakdown of rocks over time due to mechanical, organic, or chemical processes.