



Junior Ranger Activity Guide



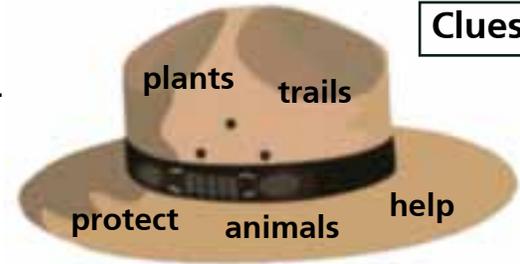
Welcome to Colorado National Monument!



At Colorado National Monument (COLM) the helpful people in green and gray uniforms are rangers. Their job is to teach the visitors about this extraordinary place and protect the animals, plants, and rocks.

Can you unscramble the bold words to find out what rangers do?

1. Teach visitors about the **lptasn** _____, **snimala** _____, and geology of the park.
2. Answer questions and **pehl** _____ visitors.
3. Patrol **rlasit** _____ and **tcporet** _____ the natural and cultural resources.



Clues

Become a Junior Ranger



Are you up to the challenge?
Here's how you can earn your badge.

Explore Colorado National Monument.
Learn why it is a special place.
Protect it today. *Protect* it for the future.

1. Find the animal picture for your age. Give your animal a name: _____
2. Look for your animal in the green bands and do those activities.
3. Get out there. Take a hike! (pg. 4)
4. **You did it!** Go to the visitor center to get your badge and certificate.



7 & under

Complete at least 3 activities
and take one hike.



8-10

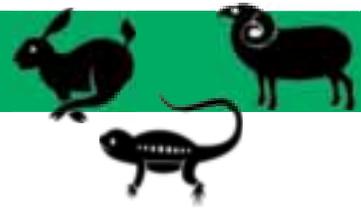
Complete at least 5 activities
and take one hike.



over 10

Complete at least 7 activities
and take two hikes.

What's Right/What's Wrong?



Put an X through the activities that are not allowed in the monument and circle the activities that help protect the park.



Match up the if/then statements to find out how you can protect this park.

Check off the things you have done to protect Colorado National Monument.

If you...

- pick flowers
- feed the animals
- walk off the trail
- take rocks
- grab a lizard by its tail
- throw rocks into the canyon

Then...

- its tail might break off
- there will be no seeds for new flowers
- you are stealing from the monument
- you may hurt animals or hikers below
- you will bust the soil crust
- the animals might get sick

- stayed on trails
- left everything where I found it
- watched animals from a safe distance
- picked up trash
- respected other visitors
- looked at rocks but didn't carve or mark on them
- What else did you do? _____



“Living” Soil



The sandy soil at Colorado National Monument is very dry and easily carried away by wind and water. Luckily we have an important **BIOLOGICAL SOIL CRUST** that creates a web that binds the soil and holds water in, allowing plants to take root. Biological means “living”... so our soil is alive, but fragile. How can you help protect it? It’s simple.

Stay on the trails!

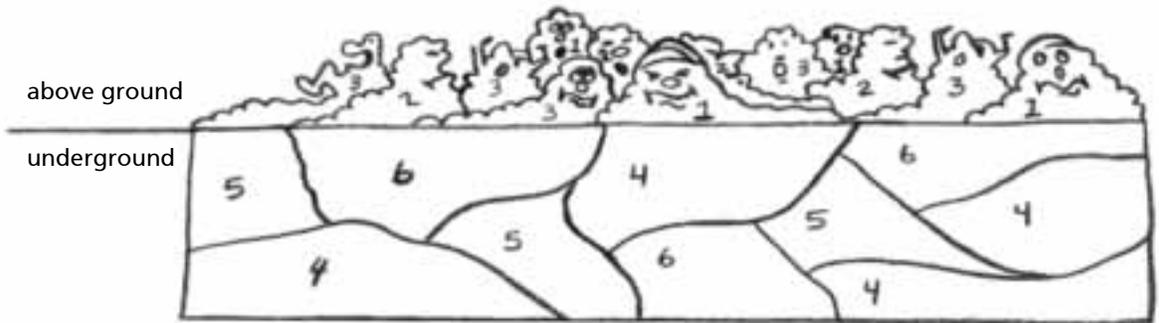
Use the key to color the layers below that make up the Biological Soil Crust. Take the bold letters from the key to fill in the blanks of the rhyme. (Use the logo for help.)



Key

- 1 mosses -green
- 2 lichens- black
- 3 algae-brown
- 4 cyanobacteria-tan
- 5 fungi-yellow
- 6 bacteria-orange

Don't ___ s ___ the ___ u ___ !



Wildlife Watch

As you watch the amazing animals at Colorado National Monument, remember that this is their home. Please be a respectful guest and *a*lways keep a safe distance.

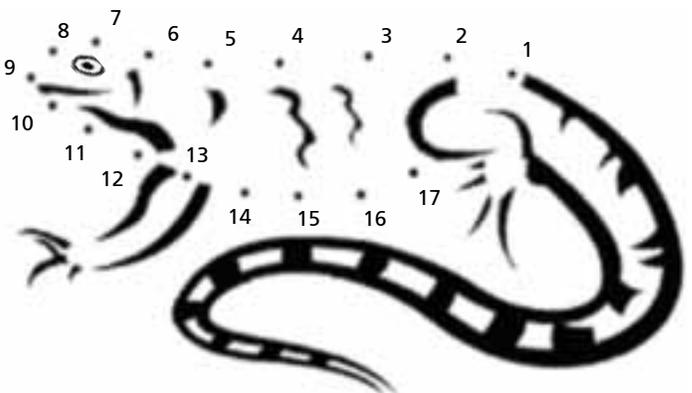
Guess what animal you will often see at Colorado National Monument.

I have eyes on the side of my head to see in all directions.

I have hard scales that protect me from the sun, wind, and predators.

I use my tail to grasp objects and to store fat for the winter.

I am cold-blooded, so I sunbathe to keep warm.



I am a ___ Z ___ !



Take a Hike!



Hiker's Checklist

- 1. Plan your hike using your park map.
- 2. To make your hike safe, **draw a line** from the items you will need to your backpack. **Cross out** the items you won't need. Write your name on your backpack.

umbrella map raincoat water first aid kit compass soda bathing suit healthy snacks

flashlight radio

junk food sunscreen whistle video games hat sturdy shoes sunglasses

- 3. Color in the water bottle to show how many quarts your group will use.

6—
5—
4—
3—
2—
1—

1 quart x _____ (# of people) = _____ quarts total

- 4. Load your pack and let someone know your plan before you go.
- 5. Fill out the trail report for one of your hikes.

Trail Report

Describe or draw what you liked most about this hike.

Trail name: _____

Date: _____ Time: _____

Distance: _____

Weather: _____

Terrain (rocky, sandy, steep, etc.): _____

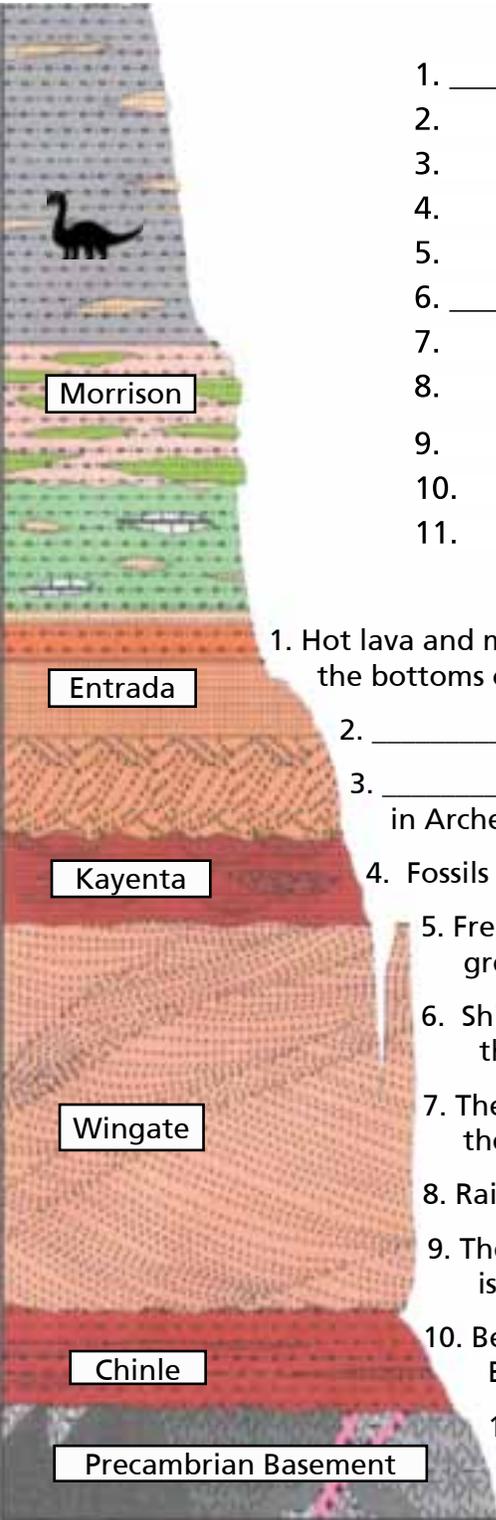


Layers Through Time

Just like us, rocks are all different ages. The **stratigraphic column** at the left shows the different rock layers within the monument. The oldest rocks are found at the bottoms of the canyons while the youngest rocks are located at the tops of the canyons.

Use the numbered clues below to fill in the blanks. The boxed word tells you the most common type of rock found in Colorado National Monument. (Use the visitor center exhibits for help.)

Rock Layers



Clues



1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____

- Hot lava and magma cooled to form _____ rocks found at the bottoms of the canyons.
- _____ + pressure = metamorphic rocks.
- _____ forms the salmon-colored *slickrock* that is famous in Arches National Park.
- Fossils of _____ are preserved in the Morrison Formation.
- Free-standing rock formations are called _____, from the greek word meaning *one-stone*. (Did you see the Kissing Couple?)
- Shifting desert winds deposited the _____ Sandstone that formed the towering canyon walls.
- The _____ Formation is a chili-red rock layer found below the Wingate Sandstone.
- Rain breaks down the glue in rocks creating _____ pits.
- The dark brown, purple, or black coating on the canyon walls is called desert _____.
- Better known as rust, _____ oxide gives the Wingate and Entrada their red, orange, and brown colors.
- The _____ caprock on top of Independence Monument keeps the monolith from eroding as quickly as the rock wall that once surrounded it.

The Wear-Away Forces



Weathering and **erosion** are the two never-ending forces that wear away the land and carve canyons and rock formations.

<u>Weathering</u> Water, ice, heat, wind, or roots break rocks into smaller pieces.	<u>Erosion</u> Water, wind, or ice move the pieces of rock from one place to another place.
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The agents of erosion and weathering are hidden in the boxes. To discover them, follow the directions.

1. Cross out all the words that rhyme with need.
2. Put an **X** on all the words ending in t.
3. Circle all the landforms.
4. Fill in the blanks below with the remaining words.

right	seed	thawing	left	cliff	gravity
mountain	freezing	feed	sun	night	pet
valley	rain	mesa	streams	read	meat
wind	out	roots	bead	canyon	floods
plateau	snow	ice	eat	monolith	humans

Put a W next to the weathering agents and an E next to the agents of erosion.

- | | | |
|----------|----------|-----------|
| 1. _____ | 5. _____ | 9. _____ |
| 2. _____ | 6. _____ | 10. _____ |
| 3. _____ | 7. _____ | 11. _____ |
| 4. _____ | 8. _____ | 12. _____ |

Making a Monolith



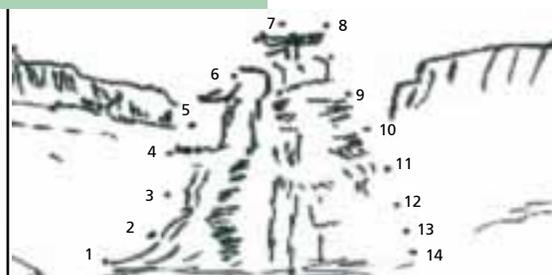
Connect the dots to see how Independence Monument formed.



At one time a solid rock wall separated Monument and Wedding Canyons.



Over time, weathering weakened the wall causing cracks to form. Then, erosion by flash floods carried pieces of rock down the canyon.



The strong Kayenta caprock on top of Independence Monument protected it like a roof on a house. Without this roof, the rock wall surrounding it eroded away.



Wild Ways

Start

I pant like a dog to stay cool.

Lizard



Desert Bighorn Sheep



Desert Cottontail



Bushy-tailed Woodrat

My big ears release heat to help me regulate body temperature.

Use the clues to choose which tracks to follow out of the canyon.
(If you choose the wrong tracks they will fade away.)

I have a seat patch that helps me absorb water from the soil.

Red-spotted Toad



Black-tailed Jackrabbit



I am an omnivore, so I eat plants and animals.

Striped Skunk



Bobcat



I eat only plants. I am an herbivore.

Mule Deer



Coyote



I am a fierce predator and defend my territory. I hunt at night, stalking my prey.

Gray Fox



Mountain Lion



To keep cool in the summer I cover my head with saliva (spit) and use my tail as an umbrella to shade me from the sun.

Porcupine



White-tailed Antelope Squirrel



I skydive from canyon rims as fast as 200 mph to capture prey, usually smaller birds or rodents.

Peregrine Falcon



Swift



I eat carrion (dead animals). I am a scavenger.

Turkey Vulture



Chipmunk



Finish

Yahoo!
You made it out of the canyon.

Meet the Plants



Hot summers, cold winters, strong winds, little water, and a scorching sun make the desert a harsh place for plants. How do these hardy plants survive and grow? They have developed **adaptations** that help them stay cool and capture and conserve water.

Use the native plant gardens around the visitor center to find and draw five of the plants listed below.

<p>Indian Paintbrush</p>  <p>You can rub my soft leaves if you want. They have tiny hairs to catch water and reflect light.</p>	<p>Utah Juniper</p> <p>I am much wiser than the Pinyon Pine. Instead of needles, I have scaly leaves that reduce water loss.</p>	<p>Yucca</p> <p>Come look, but don't touch! My sharp leaves grow in a spiral to help water flow to my base.</p>	<p>Mormon Tea</p> <p>The other plants tease me because I have no leaves. I don't need leaves; I make food in my stems.</p>
<p>Prickly Pear Cactus</p> <p>It's nice to meet you, but don't shake my hand! My sharp spines shade me and direct water to my roots.</p>	<p>Big Sagebrush</p> <p>I'm the stinky one in the garden. The smelly oil in my leaves keeps hungry animals away.</p>	<p>Showy Four-O'clock</p> <p>I'm a bit shy, so I only open my beautiful purple blossoms in the shade.</p>	<p>Pinyon Pine</p> <p>You might think my needles are waving at you. Actually, I point them up to expose less area to the hot sun.</p>
<p>Single Leaf Ash</p> <p>The other plants say I sure do shine, but the waxy coating on my leaves keeps water in and reflects light.</p>	<p>Cliffrose</p> <p>The broadleaf plants make fun of my tiny leaves, but they help me. I use less energy and water than the other plants.</p>	<p>Utah Juniper</p>  <p>The Pinyon Pines are jealous of my pretty waxy berries. They protect my seeds and allow less water to escape than their cones.</p>	<p>Fish-hook Cactus</p> <p>Look closely at the accordion-like pleats under my spines. They allow me to swell when I am full of water and shrink when I get thirsty.</p>



What's in a Name?

Rim Rock Drive is a road unlike any other. Its 23 miles curve around the canyon rims to connect two points that are only eight miles apart (as the crow flies)! Men working for the **Civilian Conservation Corps (CCC)** came from all over the country in 1933 to toil on this project, the grand idea of John Otto. They were paid \$1 a day for the back-breaking job of carving out the road using shovels, picks, and hand-hammered drills.

Use your park map.

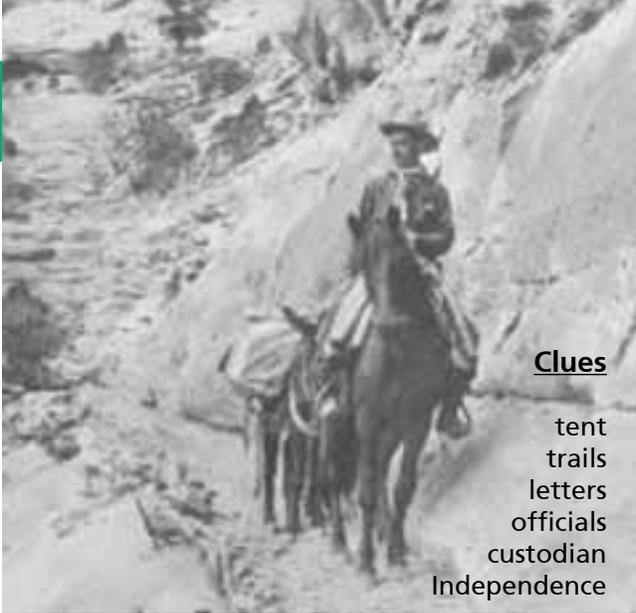
1. Solve the riddles.
2. Find the highest elevation along the road and mark it with a star.
3. Label the trails and circle the ones you hiked.
4. Put an X on places you visited.

Clues

- Bathtub
- Mushroom
- Saddlehorn
- Liberty
- Dogs
- Balanced
- Ovens
- Fallen
- Artists
- Devils

Legend

Road
 Trail



Man With a Plan



In 1907 **John Otto** wrote, "I came here last year and found these canyons, and they felt like the heart of the world to me. I'm going to stay... and promote this place, because it should be a national park." He loved these canyons and refused to give up on his dream of protecting them for people, like you, to enjoy.

Clues

- tent
- trails
- letters
- officials
- custodian
- Independence

Crack the code to learn more about John Otto, the man with a plan. (Use the clues if you get stuck.)

⌚	✍️	🔔	🌐	✈️	😊	✂️	💧	🕯️	💍	♠️	⌘	📎	🕸️	⚙️	🔑	⚡	🔍	🚲	🚌	🚫	✓	👁️	👤	📌	🌸
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

1. He wrote many _____ to government _____ asking them to set the area aside as a national park.



2. After the monument was established in 1911, Otto was paid \$1 a month to take care of the park as its first _____.



3. He lived in a _____ and built over 20 miles of _____ by himself.



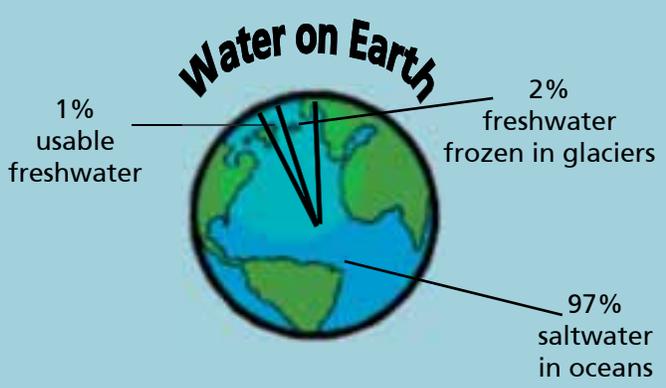
4. Otto carved steps to climb to the top of _____ Monument.



Making a Difference



John Otto showed us that one man, with a dream and hard work, can make a big difference. Think how **YOU** can make a difference today by conserving water, the most precious resource in the desert. List three ways you will conserve water.



1. _____
2. _____
3. _____



Living Off the Land

Long before the wagon trains made their way out west, native people like the Fremont and Ute Indians occupied this arid region. This dry desert is a harsh place to live, but Indians were masters at using plants for food, medicine, clothing, tools, shelter, and **everything** else imaginable. If you think science class is hard, imagine all the difficult lessons Indian children had to learn about their environment to survive!

Unscramble the plant names in the sentences below, then find them in the puzzle.

Clues

pine yucca sumac pinyon willow juniper
Mormon ricegrass sagebrush globemallow

1. In the spring, Ute Indians made baskets from the soft wood of three-leaf **usamc** _ _ m _ _.
2. **noMrmo** _ _ r _ _ _ tea (ephedra) roots were boiled to make a drink to treat colds.
3. Rope was made from the inner bark of Utah **njpirue** _ u _ _ _ _ _ trees.
4. Ute Indians used sap from pinyon **nepi** _ _ _ _ trees as a glue to repair sandals.
5. Indian **ecgrsirs**a _ _ _ _ _ g _ _ s _ seeds were ground into flour or boiled to make hot cereal.
6. **cycua** _ _ c _ _ fruits and flowers were eaten raw, and the roots were used to make soap.
7. Ute Indians harvested **inpyno** _ _ n _ _ _ pine nuts in the fall to eat during the winter.
8. Infections were treated with mashed up **loblmealgow** g _ _ _ _ m _ _ _ _ _ leaves.
9. **ilwolw** _ _ l _ _ _ branches were perfect for making bows and arrows.
10. Ute Indians wove **basgerhus** _ _ g _ _ _ _ _ h bark into cloth.





Protecting This Land Forever



The National Park Service (NPS) protects close to 400 sites. Each site preserves and protects important natural and cultural resources. The **arrowhead** is the official symbol. Each picture inside the arrowhead represents resources protected by the NPS.

Fill in the blanks to find out what each symbol stands for.



The **mountain** is the symbol for the beautiful _____.

alfromnds



The **lake** depicts the _____ resources and opportunities for recreation.

tawre



The **bison** symbolizes the animals, or _____.

ldwifeli



The **tree** represents the vegetation, or _____.

lpatns



The shape of the **arrowhead** stands for the artifacts of native cultures and the cultural _____ of the United States.

itohsry



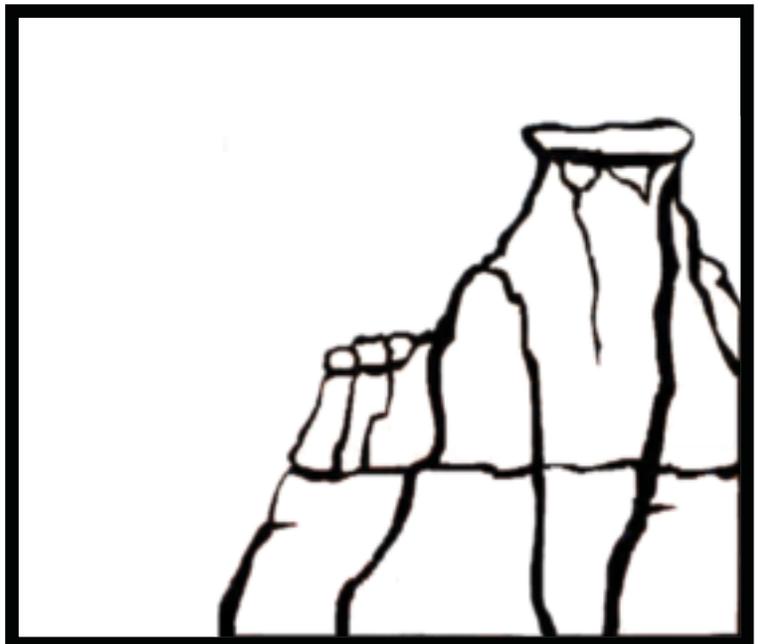
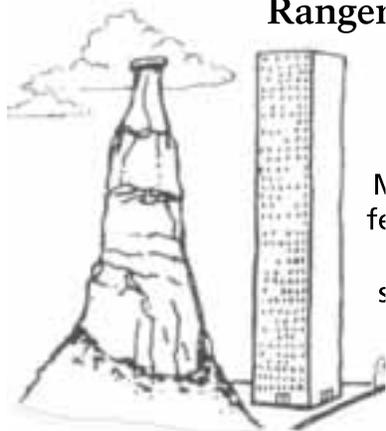
Create Your Own Patch



Use the box on the right to design a patch that represents Colorado National Monument and the extraordinary examples of erosion the monument protects.

Ranger Wisdom

Did you know that Independence Monument is 450 feet tall? That's as tall as a 37 story skyscraper!



Glossary

adaptation: change in an organism's structure or behavior that helps it survive in its environment

algae: simple plants without true roots, leaves, or stems

artifact: archeological or historic object made by humans

bacteria: single-celled microscopic organisms

CCC (Civilian Conservation Corps): program during the Great Depression that gave young men jobs

conserve: to use or manage wisely; preserve; use less

cultural: the shared values and knowledge of a society

cyanobacteria: blue-green algae with filaments (strings) that hold sand grains together and soak up water when it rains

fungi: plants that break down other dead plants or animals

lichen: a fungus and an algae living in harmony to provide for each other (often seen living on rocks)

mesa: a flat-topped mountain

monolith: a free standing rock formation

mosses: tiny, leafy stemmed, flowerless plants

natural: from the Earth (not man-made)

plateau: a flat area of land that is at a higher elevation than the land around it

Precambrian: earliest era in the history of the Earth

resources: natural or cultural objects or areas protected because of their value to a society

sandstone: rock made from layers of sand that have hardened due to pressure over long periods of time

sedimentary: rock made from layers of sediment (smaller pieces of other rocks, sand, clay, gravel, etc.)

stratigraphic column: a visual model that represents rock layers

Ranger Wisdom

On July 4, 1910, John Otto climbed to the top of Independence Monument to fly the American flag, a tradition that continues today.



Ranger Wisdom

On May 24, 1911, President Taft established Colorado National Monument, making it the first national monument in Colorado.



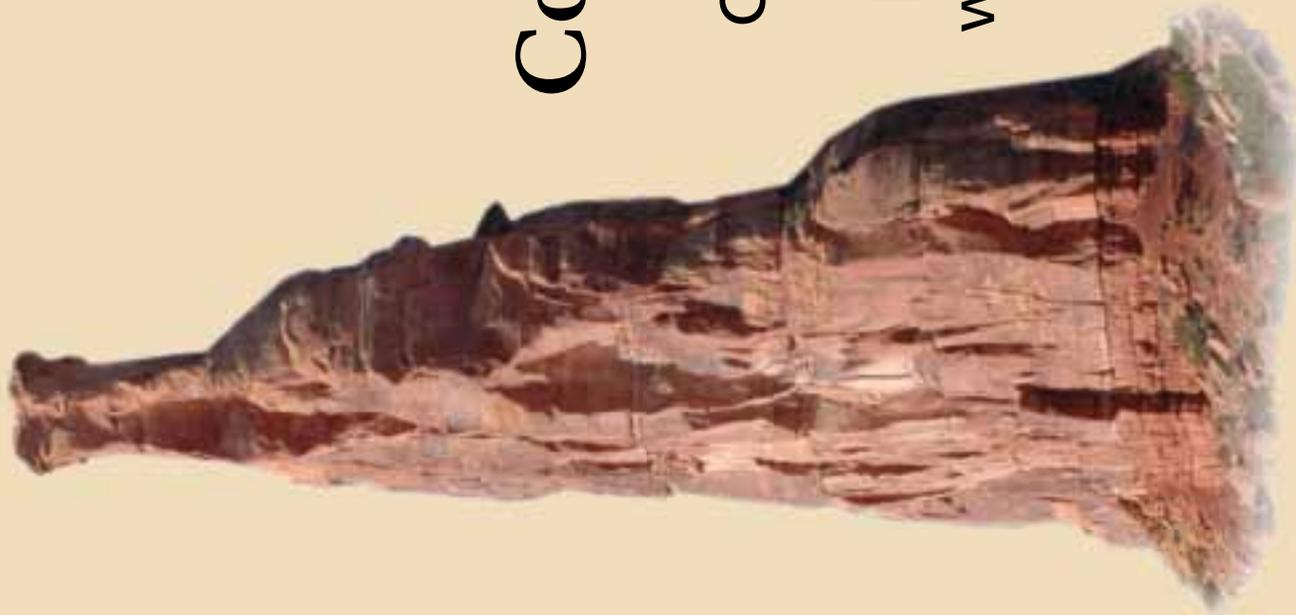
Ranger Wisdom

Did you know that Balanced Rock weighs 600 tons? That's as much as 120 African elephants!



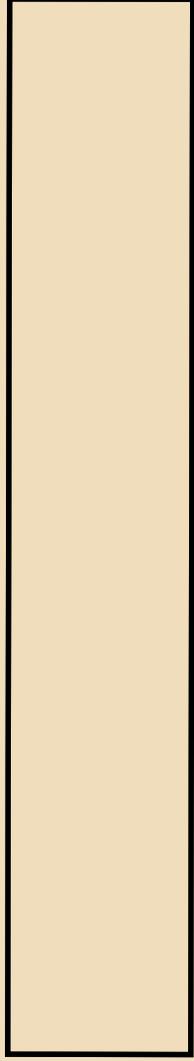
Ranger Wisdom

What makes a national monument different from a national park?... A monument is established by the declaration of a president. A national park is established by an act of Congress.



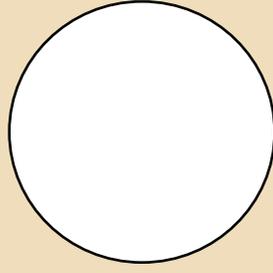
Independence Monument

Congratulations!



You are a Junior Ranger at Colorado National Monument.

As a Junior Ranger, I promise to protect Colorado National Monument and its rocks, plants, and animals. After I leave, I will learn about and protect the natural world where I live and all the national parks I visit.



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To learn more about the online NPS Junior Ranger program visit www.nps.gov/webrangers