City of Rocks National Reserve

Junior Ranger

Ages 10 & up: finish 12 activities
Ages 9 and under: finish 6 activities

JUNIOR RANGER
EXPLORE • LEARN • PROTECT

Explore
Learn
Protect

National Park Service in partnership with Idaho Department of Parks and Recreation

Welcome to City of Rocks National Reserve!

Use this Junior Ranger program booklet to explore trails through City of Rocks National Reserve, identify native wildflowers, understand these unique geological formations, recognize common wildlife and their tracks, and learn about the history of the California Trail!

When you become a Junior Ranger you have an opportunity to help rangers preserve the history of the park and its natural wonders.

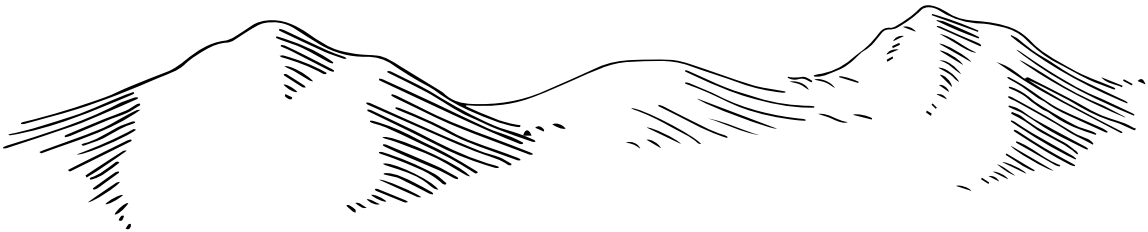
To complete the Junior Ranger program:

- Complete activities in this booklet based on your age and abilities
- Stop by the Visitor Center for a ranger to review your work
- Take the Junior Ranger oath and receive a badge!

Things to Do at City of Rocks:

- Watch the welcome video at the Visitor Center
- Stop and walk around at Camp Rock and Register Rock to learn about California Trail history
- Take a hike or ride your bike on the many miles of trails
- Camp with your family under the stars
- Search for wildflowers during spring and summer
- Learn about geology and see fascinating features in the park
- Attend a ranger-led program or hike
- Go fishing at the Castle Rocks State Park fishing pond
- Scramble on rocks or go rock climbing with proper equipment and an experienced adult

Draw your family camping or exploring City of Rocks!



Find the most common flowers!

How many times can you identify the different wildflowers below while exploring City of Rocks?

Mark a tally under each flower every time you see it, if you see it over 30x circle the picture!

Penstemon

1 _____

Stonecrop

2 _____

Buckwheat

3 _____

Flax

4 _____

Arrowleaf balsamroot

5 _____

Columbine

6 _____

Lupine

7 _____

Geranium

8 _____

Paintbrush

9 _____

Salsify

10 _____

Fleabane

11 _____

Wild onion

12 _____

Larkspur

13 _____

Wild mint

14 _____

Cactus flower

15 _____

Pollination and Parts of a Flower

Pollination is the movement of pollen within flowers or from one flower to another that allows for fertilization and the production of seeds and fruit. The center part of the flower holds the reproductive organs, the ***stamen*** and ***pistil***. The stamen produces pollen, which is picked up by pollinators such as bees, hummingbirds, butterflies, and more. When those pollinators visit another flower, pollen dust may come in contact with the pistil. The pollen travels down the pistil to the base of the flower where it fertilizes ovum, or eggs, to produce a fruit or seed. Bright, colorful, showy ***petals*** attract insects that pollinate flowers. ***Leaves*** turn light from the sun into food for the plant. A tall, strong ***stem*** holds up the flower and moves nutrients throughout the plant. Roots collect water and nutrients from the ground. Each part, no matter how small, plays an important role in the plant's life.

1. _____

2. _____

3. _____

4. _____

5. _____

Bonus: What is the part of the flower underground that draws up water and nutrients?

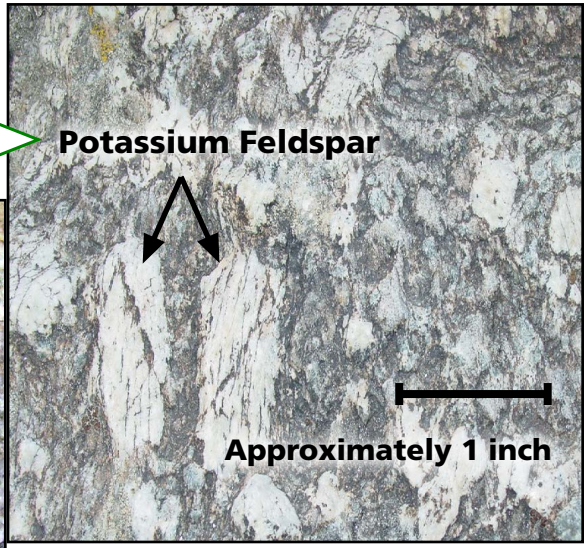
_____

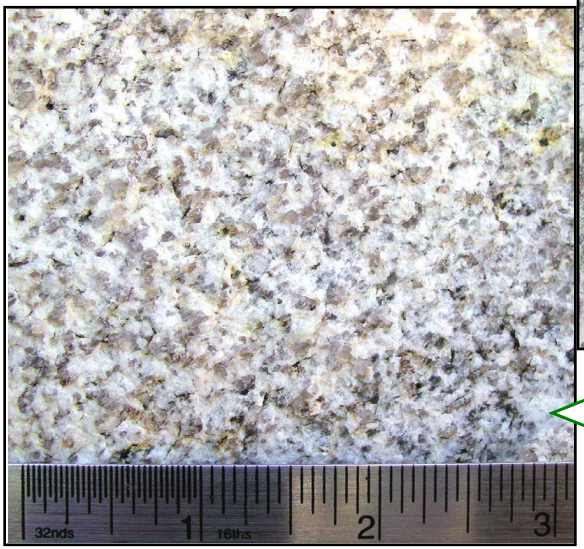
2 different types of granite!

The reserve contains two different types of granite that look almost identical far away, but they are actually separated by billions of years. **The Green Creek Complex (GCC)** granite is 2.5 billion years old and is some of the oldest exposed rock west of the Mississippi, whereas the **Almo Pluton** granite is only 28 million years old.

The two granite types are easily identified up close by observing the difference in the mineral grain size and the color of the granite. The GCC is much darker gray and has larger white crystals (potassium feldspar) while the Almo Pluton is a much lighter white color and has evenly dispersed small crystals.

Identify the type of granite in each picture — answer in the arrows!





A Rocky Scavenger Hunt!

Look for these cool features on a hike - rangers recommend the Geological Interpretive Trail which starts at Circle Creek Overlook!

vein, tafoni, joints, window, arches, panholes, grus, pickelhaube, patina, xenolith

A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

G. _____

H. _____

I. _____

City of Rocks is home to awesome and weird geology that is formed by erosion from water, wind, and salt! Salt is what forms some of our most unusual geological formations and it comes from the Great Salt Lake! The salt mixes with water and blows onto the rocks. When salt dries, it expands, and erodes the rock away!

- In some places, other types of rocks became stuck in the granite as it cooled; this is called a **xenolith** (Greek for "foreign stone").
- A special name for broken down granite sediments (sand or gravel) is **grus**.
- Fractures caused by the movement of rocks are called **joints**.
- Water catches in small divots in the rocks and breaks down the minerals creating bowls on top of rocks called **panholes**.
- Iron minerals within the granite will oxidize (rust) which form a red **patina** on the surface of the rocks.
- Cavernous weathering creates small hollows on joint surfaces which enlarge due to salt to form **tafoni** which then continues to erode through the rock to form **window arches** (holes).
- Hot mineral-rich fluids that flow through joints and then cool and crystallize form **veins**.
- An erosional remnant of a case-hardened surface that forms a spike-like protuberance is a **pickelhaube**.

Use Your Creativity!

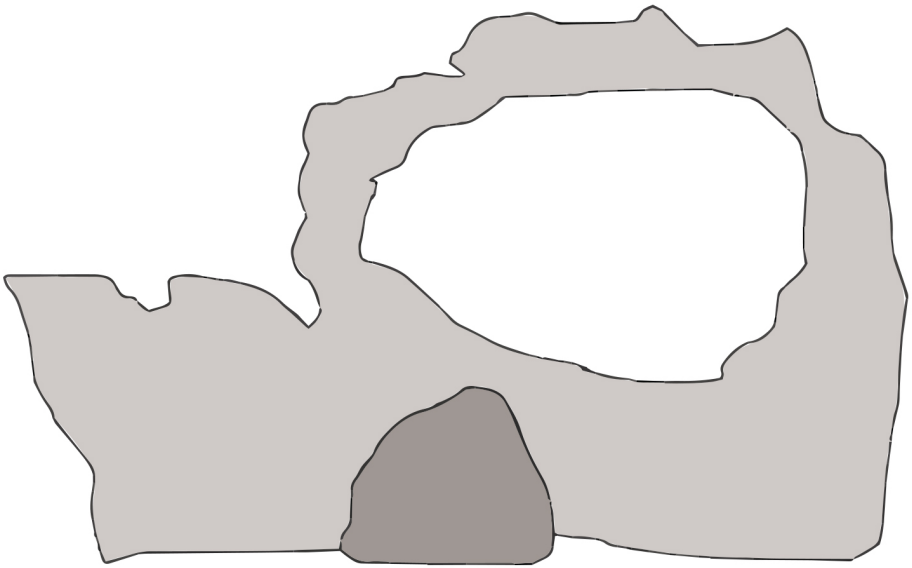
Draw, sketch, or describe your favorite flower or plant!

Your favorite rock formation you saw while hiking!

Windows and Arches

Salt and water work together to break down the granite in amazing caverns and honeycomb features known as tafoni. When tafoni breaks through to the other side, windows and arches are formed.

Draw yourself in this window arch. See it in person by campsite #37!



The BIG Word Search!

Find 8 out of 32 words listed below!

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

Owl	Moose	Grasses	Pinyon Jay
Elk	Bobcat	Squirrel	Rattlesnake
Fox	Coyote	Bacteria	Pinyon Pine
Deer	Willow	Peregrine	Grasshopper
Mice	Falcon	Pine nuts	Striped Skunk
Lynx	Grouse	Jackrabbit	Turkey Vulture
Lizard	Human	Chipmunk	Bighorn Sheep
Eagle	Granite	Pronghorn	Mountain Lion

Nature Scavenger Hunt!

Go on a hike and observe nature around you!

Complete all 5 parts by checking off at least one box for each and writing in the blank what it is!

1. Do you **SEE** something:
   flying ☐, green ☐, made from stone ☐
   What do you see? _____

2. Do you **HEAR**:
   wind blowing ☐, birds singing ☐, other people ☐
   What do you hear? _____

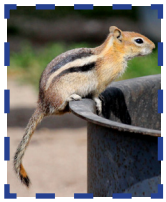
3. Do you **SMELL**:
   something good ☐, nature ☐, something stinky ☐
   What do you smell? _____

4. Do you **FEEL**:
   Pinyon pine needles ☐, granite ☐, something soft ☐
   What do you feel? _____

5. Use all your **SENSES** to find:
   a spider's web ☐, blooming flowers ☐, a lizard ☐

Match the Animals!

1. Draw lines matching the names of the animals to their picture.
2. As you see these animals in the park, put a checkmark by their name.



☐ **Sagebrush Lizard**
scaly body with lines on back, light brown/tan

☐ **Chipmunk**
long tail, dark stripes on back

☐ **Coyote**
fluffy tail, pointed ears, brown to gray coloring

☐ **Jackrabbit**
long ears with dark tips, tan/gray body

☐ **Great Horned Owl**
large owl with pointy ear tufts

☐ **Mountain Lion**
tannish fur, long tail, seldom seen

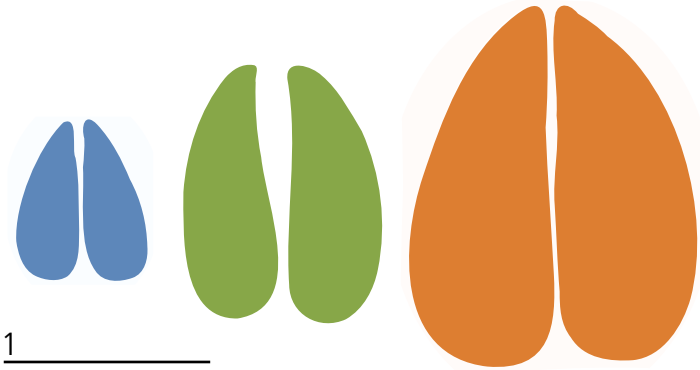
☐ **Mule Deer**
large ears, brown tannish color black tipped tail

☐ **Turkey Vulture**
black wings and body, a red featherless head

☐ **Moose**
dark brown body, long legs, large hoofed tracks

☐ **Yellow-bellied Marmot**
brown/gray coat, with a yellow belly

Name that Track



1 _____

2 _____

3 _____

Moose, Elk, and Deer

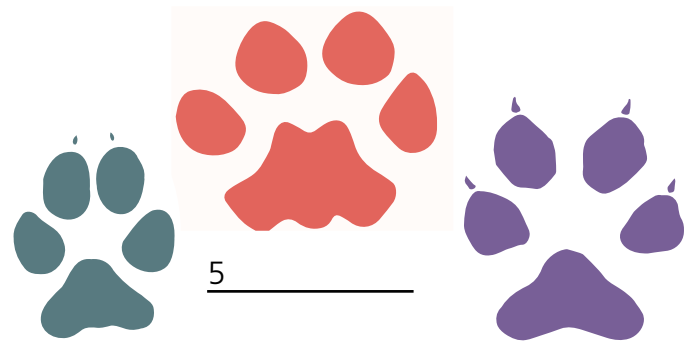
Size: Deer are mammals that belong to the family Cervidae. **Moose** are the largest of this family and their tracks can be 5 to 7 inches long. **Elk** tracks are generally 4 inches long and 3 inches wide. **Deer** tracks are much smaller, usually 2 to 3 inches long.

Shape: Members of the deer family have hooves which create pointed lobe-shaped tracks.

Dogs, Coyotes, and Mountain Lions

Size: **Coyote** tracks are similar in size to a medium-sized **dog**. **Mountain lion** tracks are very similar in size to the tracks of a large dog.

Shape: Coyote tracks are often narrow with only the two inside claw marks visible. Mountain lion tracks have an M-shaped heel pad with two lobes at the top, and three lobes at the base. Their retractable claws usually do not show. Dog tracks have two lobes at the base and one at the top. The middle claws are often pointed outward.



5 _____

4 _____

6 _____

***Bonus**: From what you learned, what animals might have made these tracks?*

A _____

B _____

Leaving Your Mark in History

For this activity go visit Camp Rock or Register Rock to experience the historical significance of City of Rocks National Reserve by seeing signatures left by emigrants who traveled on the California Trail!

Emigrants following the California Trail wrote their names with axle grease on many rocks in this area. Sometimes they wrote their whole name, other times just their initials. They would also leave the date that they were in the "Silent City." If you were an emigrant, how would you leave your mark?

1. Write your name in the granite cartoon below
   (But remember: Never write on real rocks!)

2. Write the name of one of the signatures you see while visiting Camp Rock or Register Rock

3. How many signatures can you find on Camp Rock or Register Rock that were written in the 1850's? _____

Westward Bound for Land, Freedom, Gold, and Adventure!

In the middle of the 1800s, emigrants were packing their belongings and pointing themselves west. Unlike today, this trip would take up to 6 months and required hard work, heartbreaks, and disease. They traveled westward in the hope of finding gold, land, & religious freedom.

Packing up their entire life belongings and marching into the unknown was a brave and frightening experience. Wagons and people passed through seemingly endless prairie, struggled up and down steep mountains, forded rivers, and crossed sunbaked deserts.

Imagine living in the 1800's, and were going to travel the trail, what would you take with you? List 10 things!

Packing List

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

Fun fact: In 1850, the trip cost about $300 per traveler; that is the equivalent to $6,150 today!

Leave No Trace!

What is Leave No Trace?

Leave No Trace refers to a set of outdoor ethics promoting conservation in the outdoors, and because you are in training to be a Junior Ranger part of your training is to learn, uphold, and teach others these important principles!

Leave No Trace is built on 7 key principles:

1. Plan ahead and prepare
2. Travel and camp on durable surfaces
3. Dispose of waste properly
4. Leave what you find
5. Minimize campfire impact
6. Respect wildlife
7. Be considerate to other visitors

Remember while exploring to:

- Take only pictures and leave only footprints.
- Everything that you see, no matter how small, plays an important role in the environment and in its specific ecosystem.
- Leave your surroundings the way that you found them. The next visitor has a right to enjoy the surroundings the way you did!
- Be respectful of all living things around you: other visitors, plants, wildlife, etc.
- Help leave no trace and keep the park beautiful and clean by picking up trash!

What does it mean to you to be a responsible visitor?

_____

_____

Leave No Trace

1. How does littering affect the environment?

2. How long does it take for an orange peel to breakdown?

Banana Peel - 3-4 weeks	Leather Shoes - 25-40 years
Apple Core - 2 months	Tinned Steel Can - 50 years
Cardboard - 2 months	Foamed Plastic Cups - 50 years
Cotton Glove - 3 months	Plastic Containers - 50-80 years
Orange Peels - 6 months	Aluminum Can - 200-500 years
Wool Sock - 1-5 years	Plastic Bottles - 450 years
Milk Cartons - 5 years	Disposable Diapers - 550 years
Cigarette Butts - 10-12 years	Plastic Bags - 200-1000 years

☐ Collect 5 pieces of litter you see in the Reserve and throw it away!

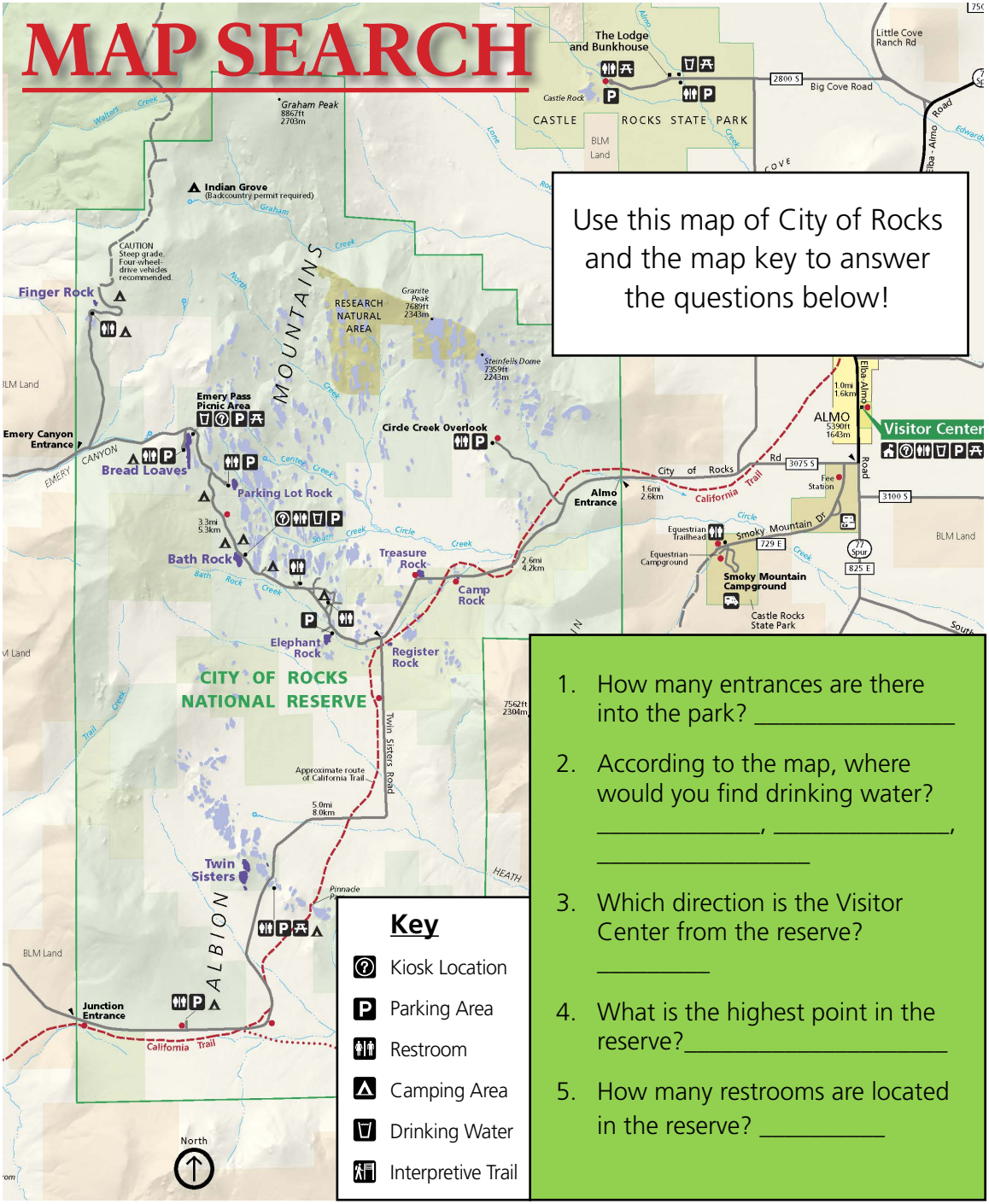
3. As a Junior Ranger, how are you going to uphold Leave No Trace Principles and help keep the reserve clean and respected?

_____

_____

_____

MAP SEARCH



Use this map of City of Rocks and the map key to answer the questions below!

Key

- Kiosk Location
- Parking Area
- Restroom
- Camping Area
- Drinking Water
- Interpretive Trail

1. How many entrances are there into the park? _____
2. According to the map, where would you find drinking water? _____, _____, _____
3. Which direction is the Visitor Center from the reserve? _____
4. What is the highest point in the reserve?_____
5. How many restrooms are located in the reserve? _____

What I love most about City of Rocks National Reserve

Take a moment and think about your visit to City of Rocks. Think about the rocks, flowers, animals, or a special memory of something else you liked and make a poem about it!

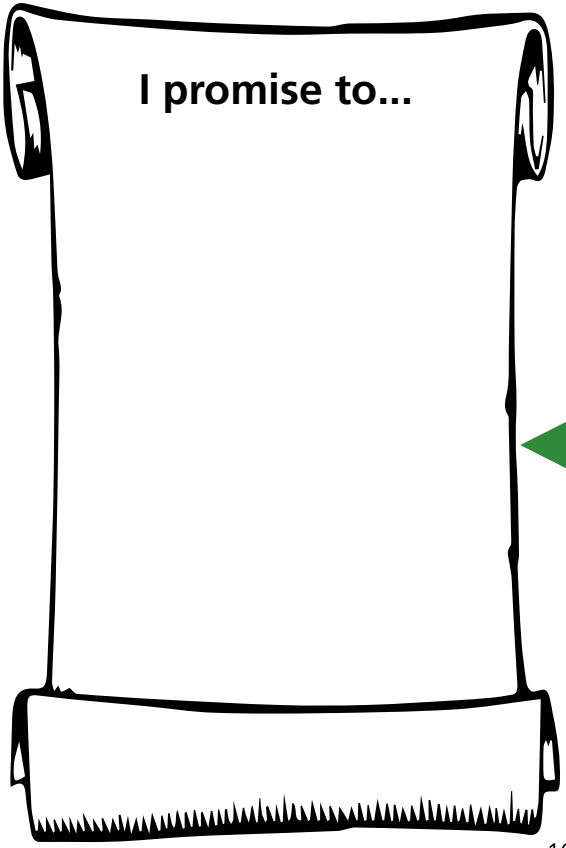
_____
Title (noun) - 1 word

_____
Description - 2 words

_____
Action - 3 words

_____
Feeling (phrase) - 4 words

_____
Title (synonym for title) - 1 word



How will I protect it?

Now think of ways you will protect City of Rocks and other special parks and places. Write a personal oath about what you will do!

Here are some words you might use:

respect	learn	plants
clean	conserve	protect
trash	rocks	explore

City of Rocks Junior Ranger

What I experienced at
City of Rocks National Reserve…

Place a check mark next to the areas you visited:

- ☐ Bath Rock
- ☐ Register Rock
- ☐ Window Arch
- ☐ Visitor Center
- ☐ Campground
- ☐ _____

Place a check mark next to other activities you did:

- ☐ Saw the Milky Way
- ☐ Hiked a trail
- ☐ Climbed a rock
- ☐ Camped
- ☐ Had a picnic
- ☐ _____

City of Rocks
Junior Ranger Stamp

THIS CERTIFIES THAT

_____

has completed the Junior Ranger Program at
CITY OF ROCKS NATIONAL RESERVE

As a Junior Ranger, I promise to explore, learn about, and protect special places like City of Rocks National Reserve.

Witnessed by: _____ Date: _____

City of Rocks National Reserve
P.O. Box 169
Almo, ID 83312

www.nps.gov/ciro

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