

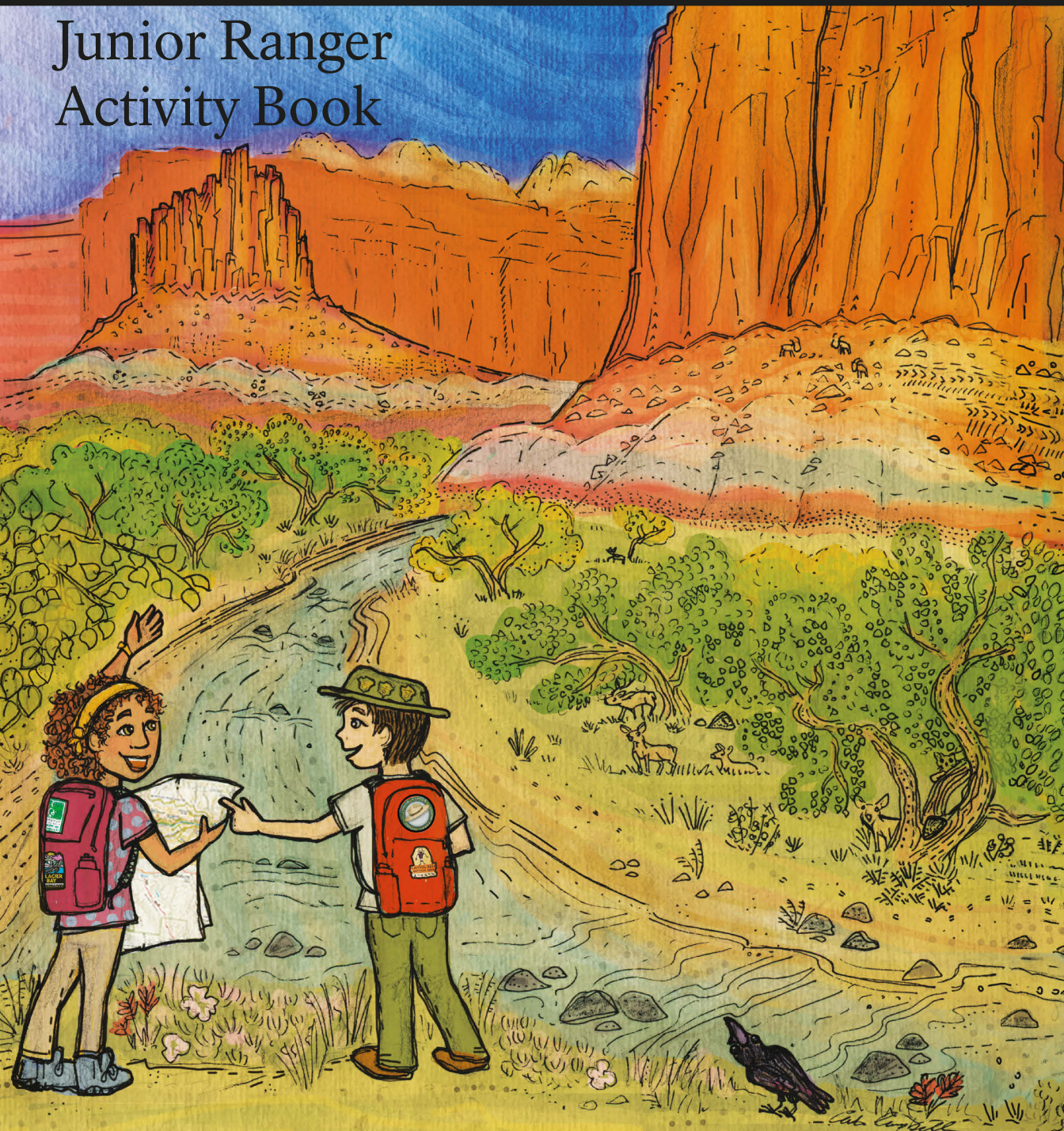
# Capitol Reef

National Park Service  
U.S. Department of the Interior



Capitol Reef National Park

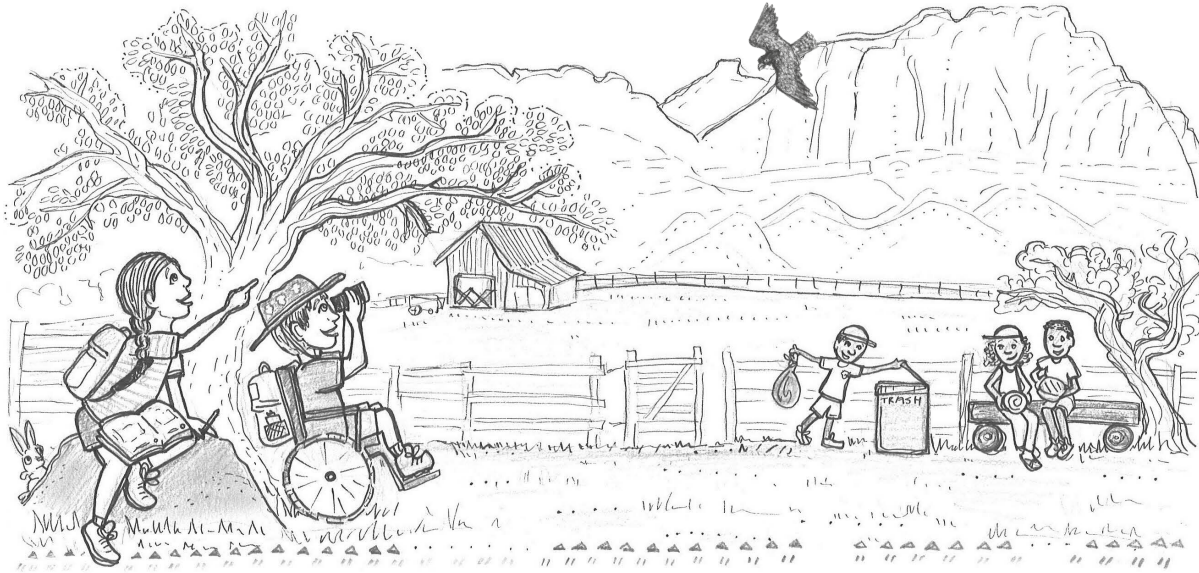
## Junior Ranger Activity Book



Name: \_\_\_\_\_ Age: \_\_\_\_\_

# What is a Junior Ranger?

The National Park Service preserves natural and cultural resources in over 400 units for this and future generations. Junior Rangers support this mission by exploring, learning about, and helping to protect these areas.



## How to Become a Junior Ranger:

Complete the required activity: Watch, Learn, and Share.

Complete additional activities based on your age.

Ages 3–5 Choose 4 activities.

Ages 6–8 Choose 6 activities.

Ages 9–11 Choose 8 activities.

Ages 12–14 Choose 10 activities.

Ages 15+ Complete all 12 activities.



Bring your completed booklet to a park employee for review to earn your badge!

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Written and designed by Emily Van Ness  
Illustrated by Caitlin Campbell  
caitlincampbellart.squarespace.com

# Watch, Learn, and Share

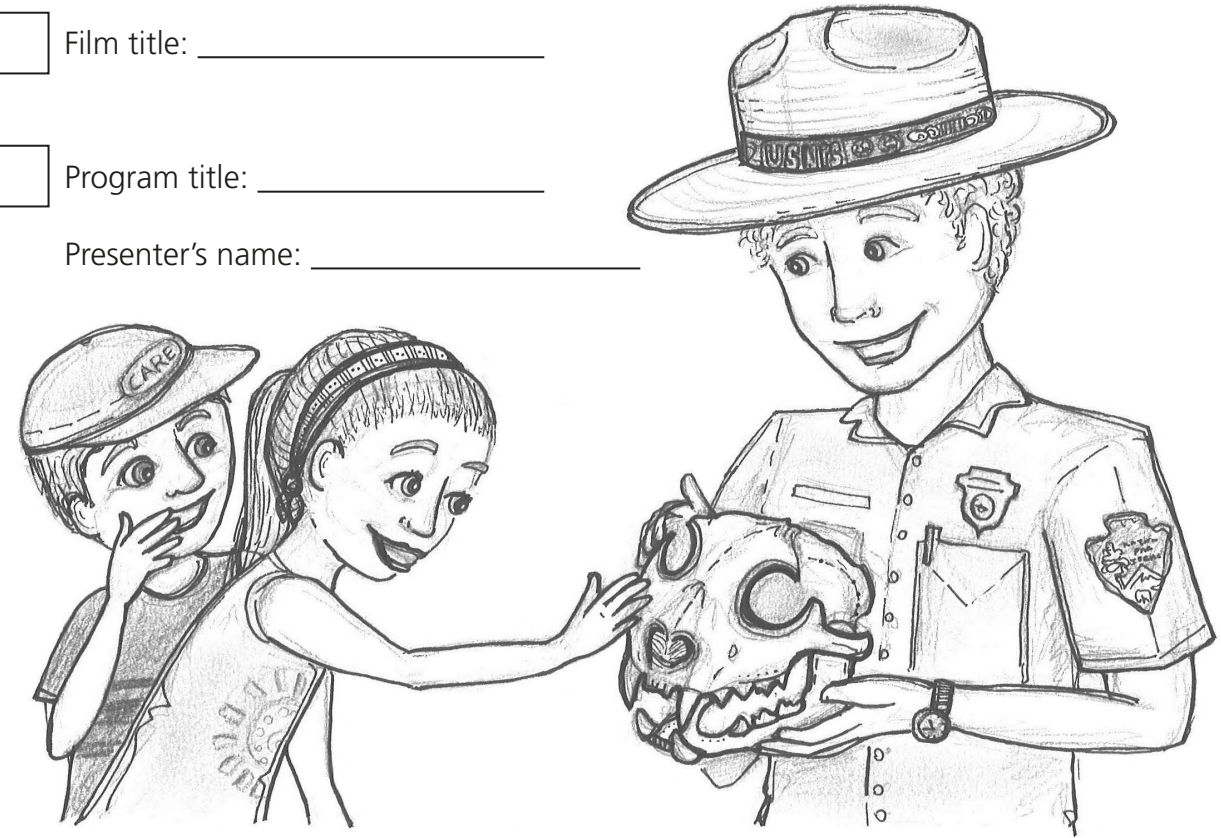
REQUIRED  
ACTIVITY

Park rangers present programs to teach visitors about the park. Attend a ranger-led program at Capitol Reef National Park. If you are unable to attend a program, watch the park film at the visitor center.

Film title: \_\_\_\_\_

Program title: \_\_\_\_\_

Presenter's name: \_\_\_\_\_



Write two things you learned about Capitol Reef National Park from the film or program.

1. \_\_\_\_\_

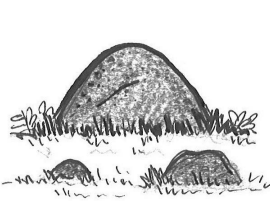
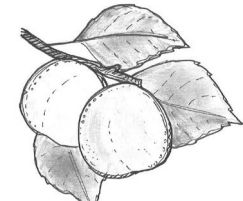
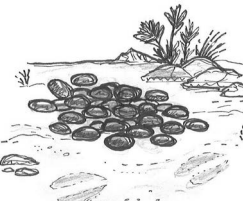
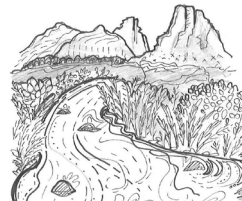

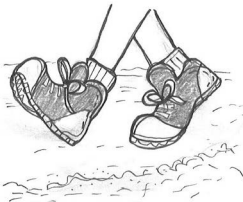


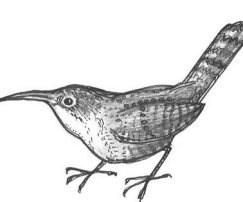

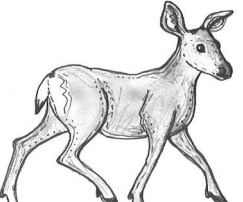

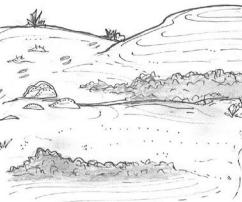
2. \_\_\_\_\_

ACTIVITY  
1

# Five Senses BINGO

Animals use their senses to help them survive. An eagle can **see** a rabbit from a mile away. A mother bat can find her baby by **smell**. Crickets have tiny hairs that help them **feel** approaching predators. Foxes can **hear** prey moving underground. **Taste** helps animals avoid poisonous foods. Use your senses to experience the park.

**Directions:** Cross out the activities you do below. Try to get four in a row, bingo!

 <b>Feel</b> a black boulder	 <b>Taste</b> ripened fruit from an orchard	 <b>See</b> animal scat	 <b>Hear</b> the river
 <b>See</b> a ranger	 <b>Hear</b> footsteps	 <b>Smell</b> a flower	<input type="checkbox"/> <b>Feel</b> something smooth Draw it!
 <b>Smell</b> the fresh air	<input type="checkbox"/> <b>Feel</b> something rough Draw it!	 <b>Hear</b> a bird	 <b>See</b> a tree
<input type="checkbox"/> <b>Hear</b> something noisy Draw it!	 <b>See</b> a deer	 <b>Feel</b> tree bark	 <b>Smell</b> the earth

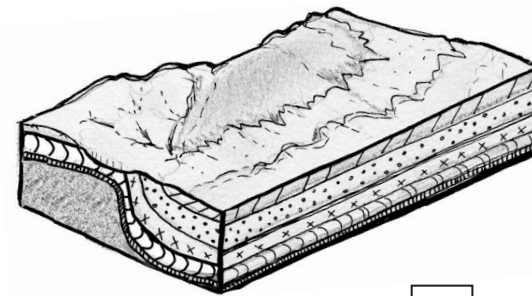
# Forming the Landscape

ACTIVITY  
2

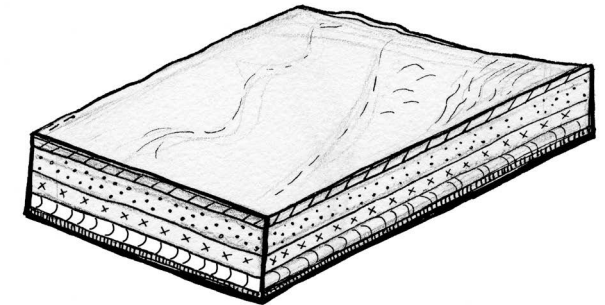
Capitol Reef National Park was created to preserve the Waterpocket Fold, a giant fold or wrinkle in the Earth's crust. This feature was formed by three major geologic processes that changed the landscape.

**Directions:** Number the three processes below in order from first to last as they occurred through time.

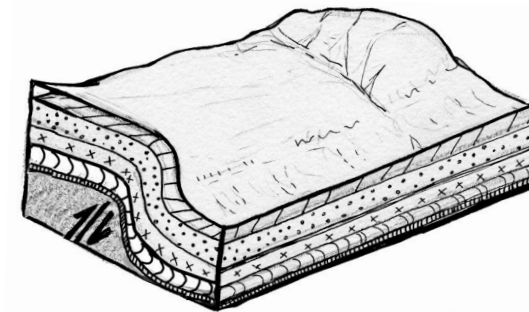
Erosion



Deposition



Uplift



At Capitol Reef, what kind of fold was formed by uplift? Hint: See activity 6.

- syncline
- anticline
- monocline

ACTIVITY  
3

# Night Sky

Enjoy the park after dark! Capitol Reef is an International Dark Sky Park and an excellent place to stargaze. People through time have wondered at the night sky and created constellation stories to help them understand and identify objects in space. Look up at the night sky. What do you see?

**Directions:** Complete the dot-to-dots to reveal four constellations.



A cluster of stars within a constellation is called an **asterism**. The Big Dipper is an asterism; it is a part of the constellation known as the Great Bear.

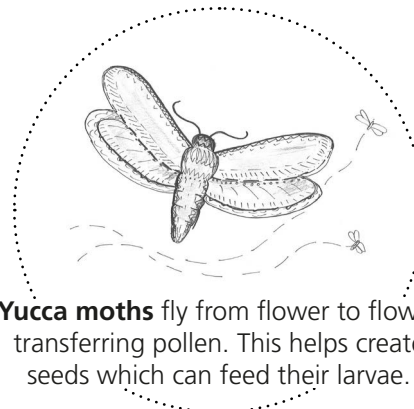
**BONUS:** Find and circle the Big Dipper in the picture above.

# Partners in Nature

Many plants and animals rely on one another to thrive. When two living things benefit from each other it is called **mutualism**.

**Directions:** Match the animal and plant partners by drawing a line between the members of each pair.

ACTIVITY  
4



**Yucca moths** fly from flower to flower transferring pollen. This helps create seeds which can feed their larvae.



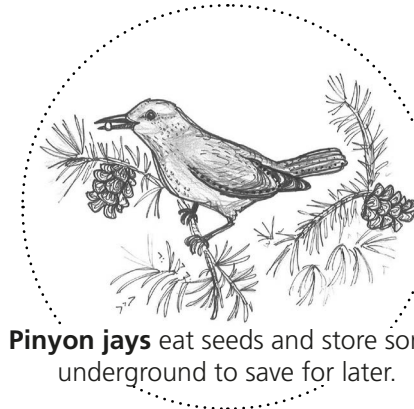
**Cottonwood trees** need protection from insects that eat their bark.



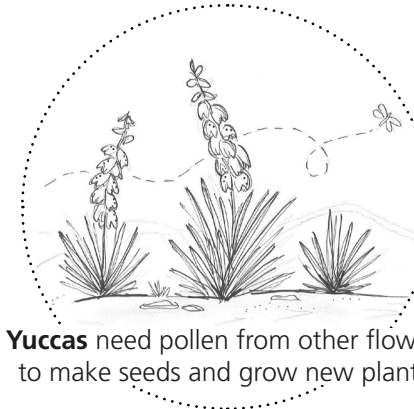
**Northern flickers** peck holes in trees and eat the insects inside.



**Pinyon pines** need their seeds spread to grow new trees.



**Pinyon jays** eat seeds and store some underground to save for later.



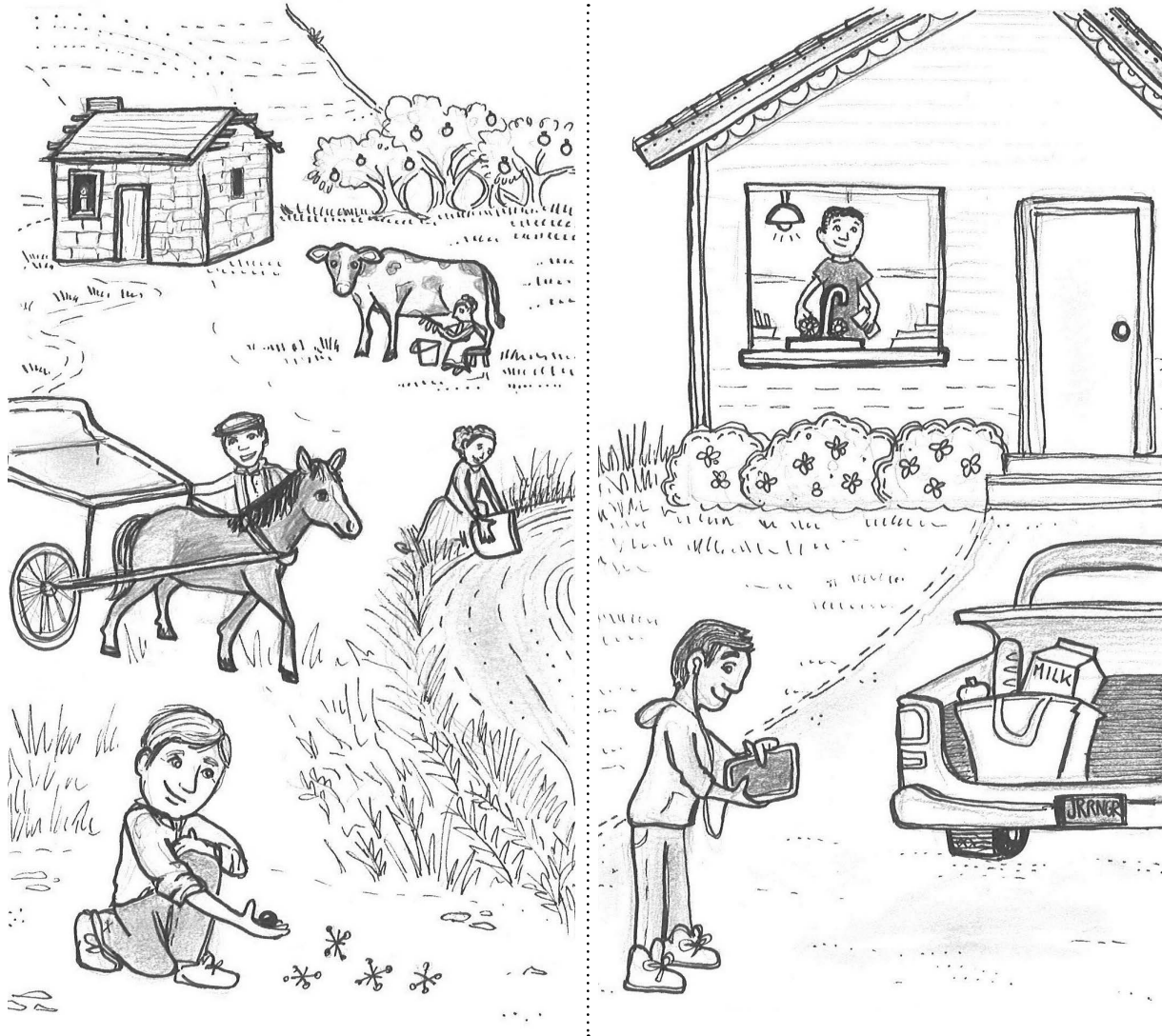
**Yuccas** need pollen from other flowers to make seeds and grow new plants.

ACTIVITY  
5

# Mormon Pioneers

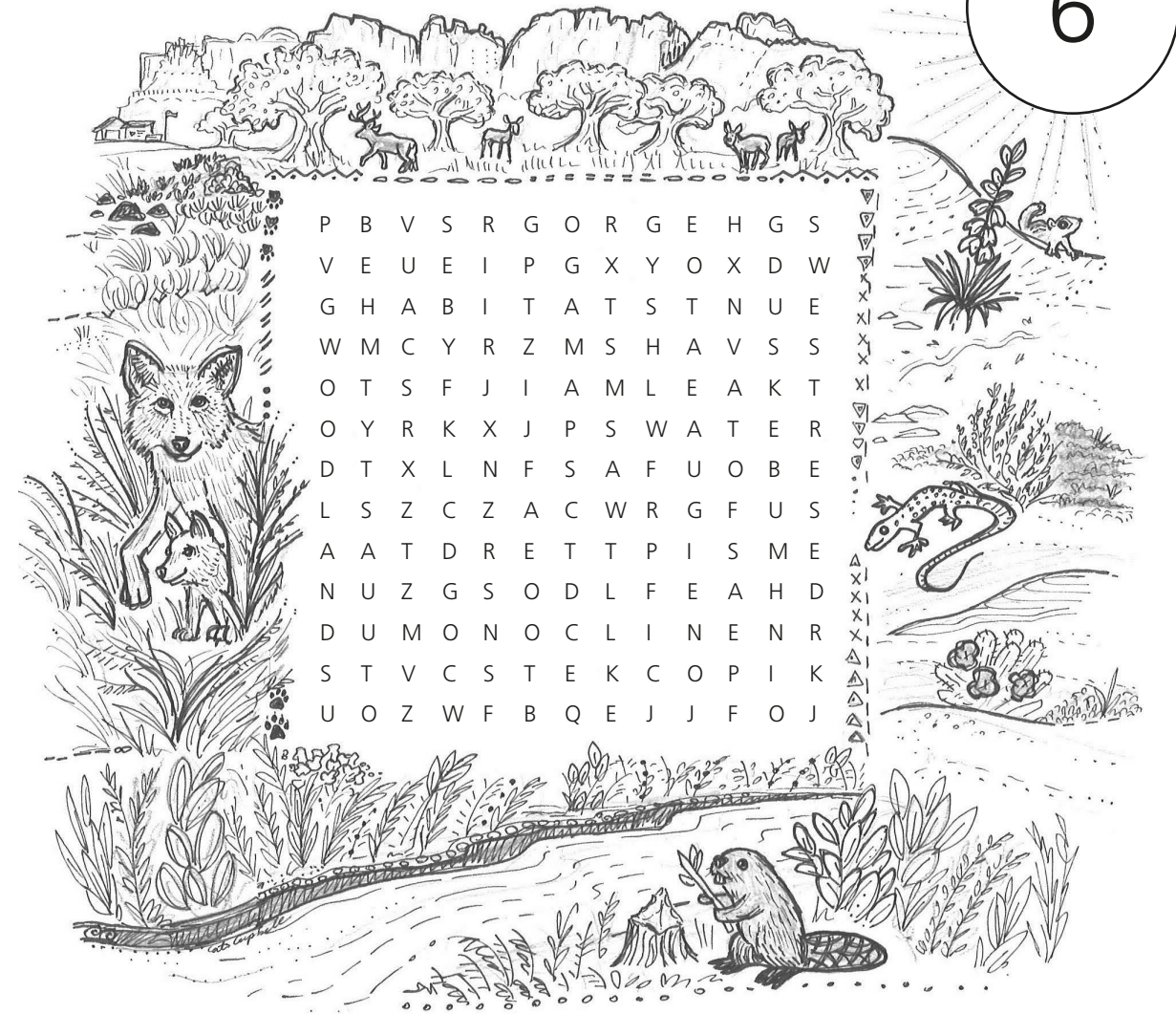
Mormon pioneer families began to settle here in the 1880's. For nearly 80 years they lived without electricity or plumbing. They sewed their own clothing, grew fruits and vegetables, and raised farm animals. The pioneers didn't have many of the items that people use today. What did they use instead?

**Directions:** Draw lines from items of the past to items of the present that serve the same purpose. Find at least five matches.



ACTIVITY  
6

# Waterpocket Word Search



**Directions:** Find and circle the ten underlined words in the word search.

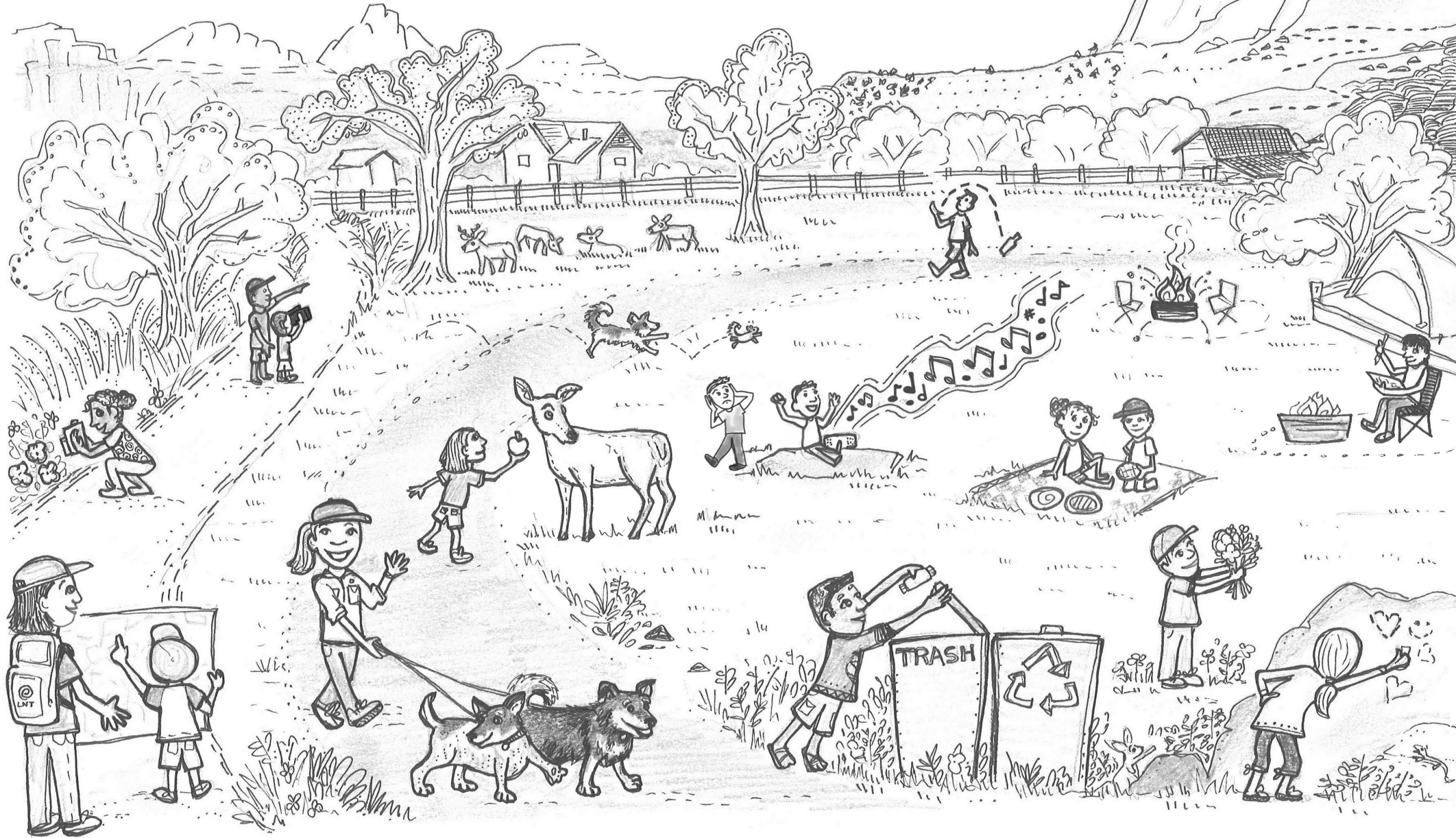
Extending for over 90 miles, the Waterpocket Fold is North America's longest exposed monocline, a one-sided fold. "Waterpocket" refers to the large bowl-shaped pockets of water in the rock, like the Tanks on the Capitol Gorge trail. The fold contains many different rock layers, which provide a variety of habitats for plants and animals. Capitol Reef's grasslands, woodlands, deserts, and riparian zones are home to over 1,000 species of plants and animals.

ACTIVITY  
7

# Leave No Trace

The Leave No Trace Center for Outdoor Ethics is an organization that protects the environment by teaching people to enjoy it responsibly. Everything in a national park is protected, including the plants, animals, rocks, and rivers. Are the visitors pictured below following park rules and Leave No Trace principles?

**Directions:** Circle seven appropriate behaviors and draw an X through seven inappropriate behaviors.



## Leave No Trace Seven Principles

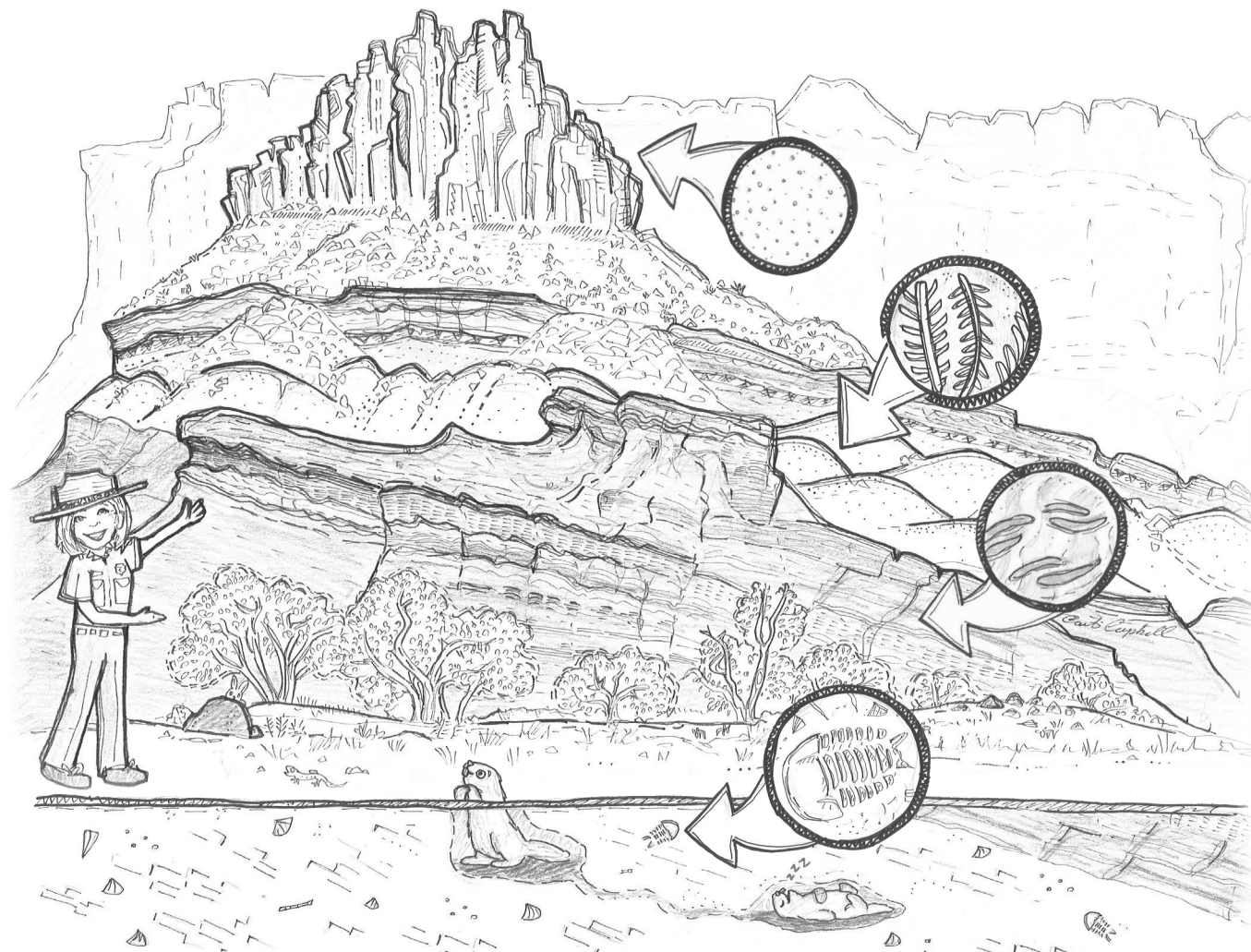
1. Plan Ahead and Prepare
2. Travel and Camp on Durable Surfaces
3. Dispose of Waste Properly
4. Leave What You Find
5. Minimize Campfire Impacts
6. Respect Wildlife
7. Be Considerate of Other Visitors

ACTIVITY  
8

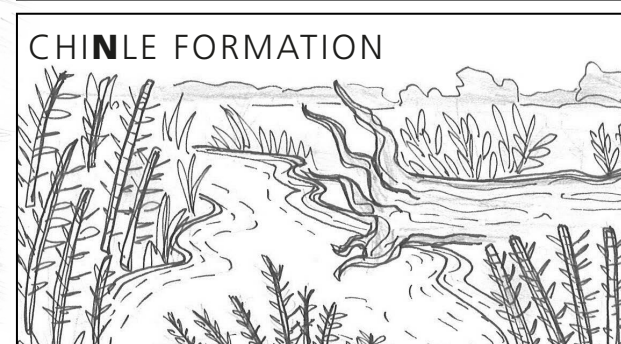
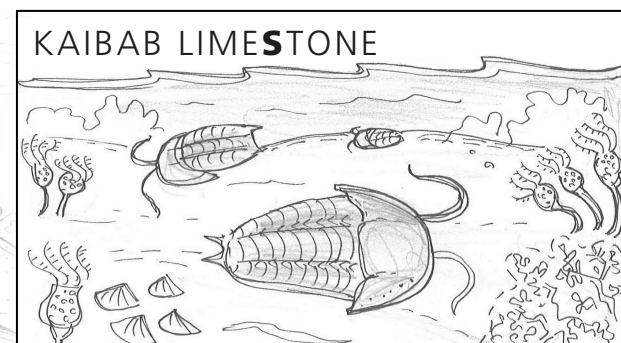
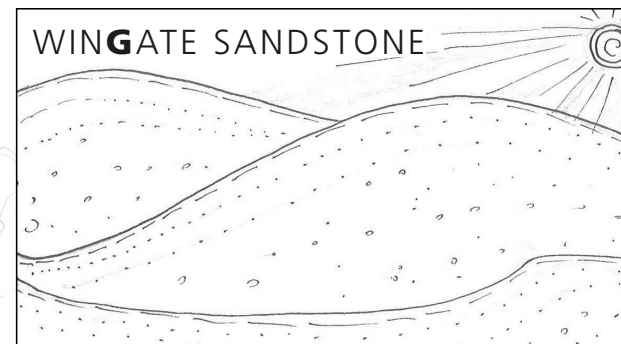
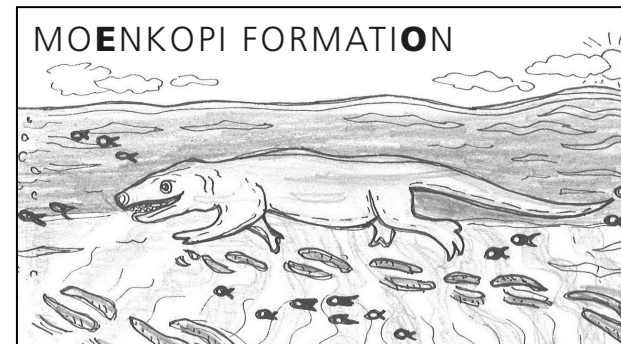
# Stories in Stone

Capitol Reef's rock layers were deposited from 275 to 74 million years ago and serve as an excellent record of the Mesozoic era. Studying rock layers helps us understand what the Earth was like long ago. Sandstones, mudstones, and limestones tell different stories of past weather conditions and environments. Fossils help us learn about the plants and animals that existed.

**Directions:** Find the Castle outside the visitor center. Use clues in the rock layers pictured below to determine what the environment was like when these layers formed. Draw a line between each rock layer and its ancient environment.



## Ancient Environments



## Rock Types

There are three main types of rocks on Earth. The layers of the Castle are **sedimentary**, made of tiny sediments deposited by erosion and cemented over time. Siltstones and mudstones typically form soft sloping layers that are easily eroded. Sandstones tend to form towering cliffs because they are harder and more resistant to weathering.

Rocks that have been altered by extreme heat and pressure are **metamorphic**. This type of rock cannot be seen in the park, but it exists deep underground.

The third rock type is formed by molten rock, like the black boulders in the park. What type of rock are they? Unscramble the bolded letters in the four rock layer names to fill in the blanks and find out.

**I** \_ \_ \_ \_ **U** \_ \_



ACTIVITY  
9

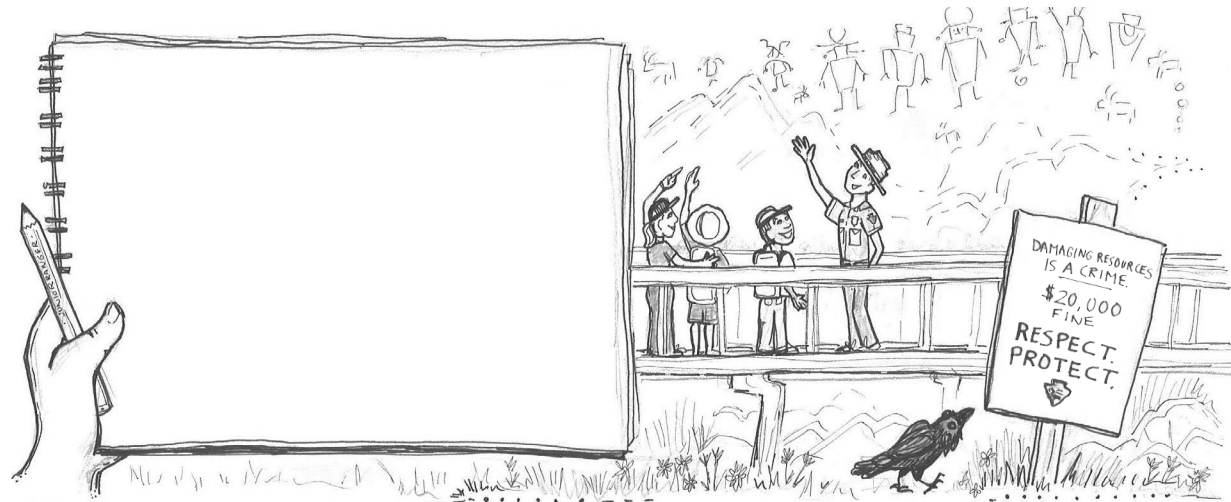
# Ancient Cultures

From 300 to 1300 C.E., the Fremont River Valley was home to a group of Native Americans that archaeologists referred to as the Fremont Culture. Modern Native American tribes have other names for their ancestors; the Paiute know them as *Wee Noonts* (People Who Lived the Old Ways) and the Hopi call them *Hisatsinom* (People of Long Ago).

They hunted bighorn sheep and mule deer, gathered seeds and nuts, and planted corn, beans, and squash. They also painted pictographs and carved petroglyphs into the canyon walls.

**Directions:** Visit the Petroglyph Panel, located 1 mile (1.6 km) east of the visitor center on Highway 24.

- Use the space below to draw one of the images you see at the Petroglyph Panel. (Remember to draw on your paper and **not** on rocks, trees, or other parts of nature.)



- What do you think the images mean?

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- Why is it important to protect the rock markings?

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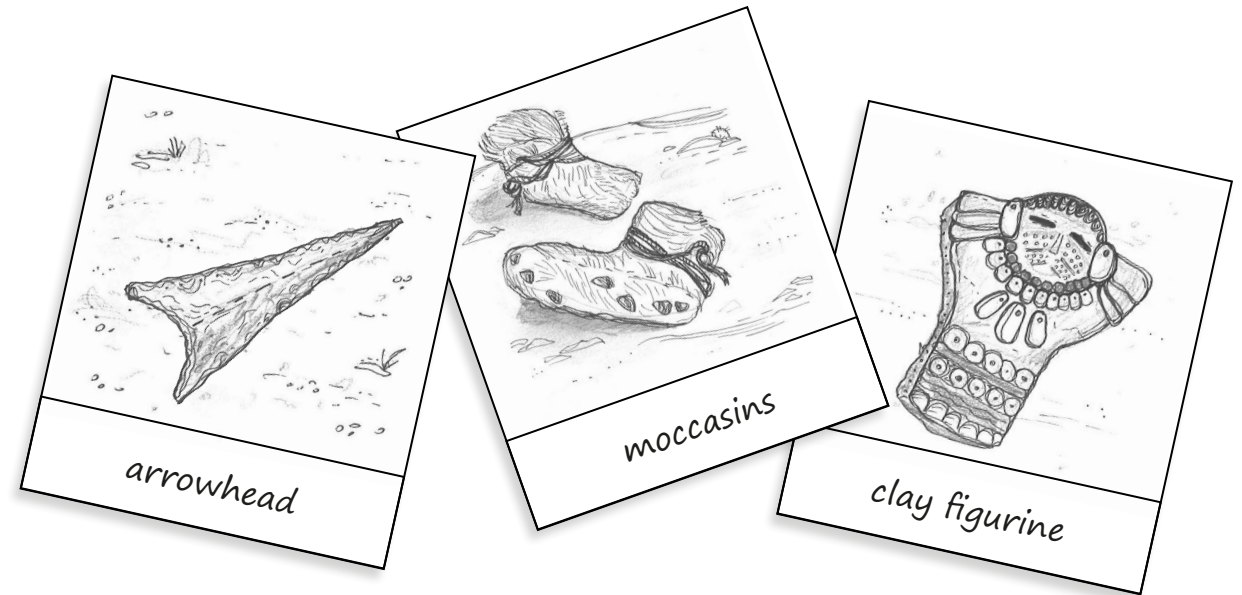


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Many Fremont artifacts have been found in the park. Artifacts help archaeologists understand past cultures.



- What is the best thing to do if you find an artifact in the park?
  - Bring it home to keep it safe.
  - Leave it alone.
  - Bring it to a ranger.
  - Take a picture of it and tell a ranger where it is.

Why? \_\_\_\_\_

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ACTIVITY  
10

# Fruita Orchards

Tucked in among the cliffs, Fruita occupies a unique area. Fertile soils, deposited by waterways, have created an oasis for farming in the middle of a desert.

Mormon pioneers grew orchards in Fruita and sold and traded fruit to make a living. This rewarding work was often difficult due to natural flooding, drought, and a necessity for year-round effort. The pioneers' perseverance allowed them to inhabit this special place and provide neighboring towns with nutritious and delicious foods.

**Directions:** Orchards require labor throughout the seasons, including winter. Finish labelling the chores from one to five in order as they are completed throughout the year.



- Can and preserve fruit.
- Irrigate: water the trees.
- Harvest: gather ripe fruit.
- Dig and clear irrigation ditches to allow the flow of water.
- 1 Prune: remove dead branches (begins in winter).

Changes to the climate may increase the frequency of extreme temperatures, droughts, and flooding. How could the changing climate affect the orchards in the future?

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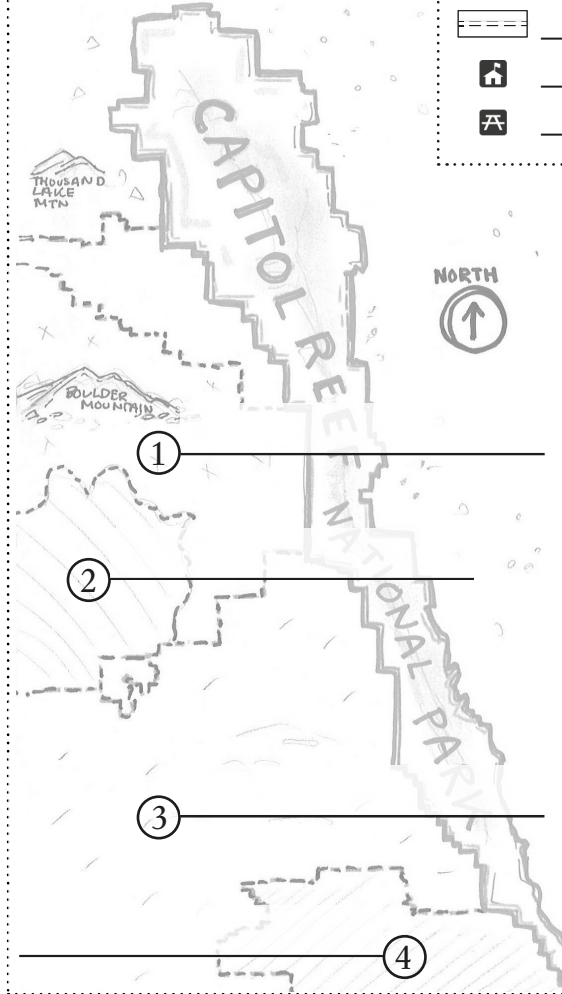
# Wilderness Preservation

ACTIVITY  
11

The Waterpocket Fold territory was the last to be mapped in the contiguous 48 states. Many areas of the park remain rugged and remote. Almost 75% of the park is managed as **Wilderness**, an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.

**Directions:** Get a free map from the visitor center. Use it to fill in the blanks.

1. Label the four federal public lands that border Capitol Reef to the west.



2. Label the missing blanks on the legend.

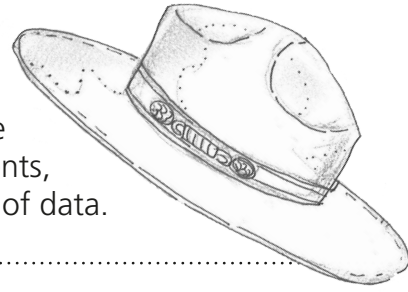
	_____		_____
	_____		_____
	_____		_____
	PICNIC AREA		_____

3. The "River ford" is located on the \_\_\_\_\_ Road.
4. How many primitive campgrounds are in the park? \_\_\_\_\_
5. What kind of vehicle is needed to get to the Strike Valley Overlook?  
\_\_\_\_\_
6. Why are wilderness areas important? List three reasons.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ACTIVITY  
12

# National Park Science

Scientists and rangers record data and detailed observations to help them study and understand the environment. Drawings, measurements, and descriptions are different forms of data.



1. While most Americans measure temperature in Fahrenheit, scientists typically use Celsius. Celsius is based on the freezing and boiling points of water. Water freezes at 0°C (32°F) and boils at 100°C (212°F). January is the coldest month at Capitol Reef, with average high and low temperatures of 41°F and 20°F. What are they in Celsius?

**Directions:** Convert 41°F and 20°F to Celsius. To convert Fahrenheit to Celsius, **subtract 32, then multiply by 5, and divide by 9.**

High: \_\_\_\_\_ °C      Low: \_\_\_\_\_ °C

2. Drawing is a useful way to record observations. When a sketch is not drawn to scale it is important to record the actual dimensions of the object.



This drawing is half the size of the actual track. The real track has a length of 8.8 cm (3.5 in) and a width of 9 cm (3.6 in).

What animal do you think made it? What clues helped you decide?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Go outside and find a place to observe the environment. Record your data on the next page.

Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_

**Cloud cover** (*circle one*):    sunny    partly cloudy    cloudy

**Weather** (*check all that apply*):

rain    snow    hail    fog    thunder    damaging winds

**Current temperature** \_\_\_\_\_ °F    \_\_\_\_\_ °C    **Time of day:** \_\_\_\_\_

*(Estimate if you do not have a thermometer.)*

**Find an animal track, a leaf, or another item from nature.**

- Measure it with the provided ruler.
- Record the length and width in inches and centimeters.
- Draw it in the space allotted.
- Leave it where you found it.

Length: \_\_\_\_\_ in  
                  \_\_\_\_\_ cm

Width: \_\_\_\_\_ in  
                  \_\_\_\_\_ cm

**Find a place to sit outside. Close your eyes and listen for three minutes. Use a timer if you have one.**

List all of the sounds you heard. \_\_\_\_\_

\_\_\_\_\_

How could these sounds affect animals in the park? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

INCH

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

CM

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20



# JUNIOR RANGER CERTIFICATE



\_\_\_\_\_ is a Junior Ranger at  
Capitol Reef National Park



Cancellation stamp

\_\_\_\_\_  
Park representative's signature

