Junior Ranger Activity Book

National Park Service
U.S. Department of the Interior

Florissant Fossil Beds
National Monument

How to use this book

•If you are age 4-7, complete at least two (2) of the ACTIVITIES below and three (3) games in your Jr. Ranger book.

•If you are age 8-10, complete at least two (2) of the ACTIVITIES below and six (6) games in your Jr. Ranger book.

•If you are 11 or older, complete at least (3) of the ACTIVITIES below and nine (9) games in your Jr. Ranger book.

This booklet is intended to be fun. If you have any problems finishing, see a ranger and they will help you.

ACTIVITIES:
1._____Take a tour of the Hornbek Homestead Property.
2._____Pick up five pieces of trash at the monument.
3._____Attend a ranger talk or see the park film.
4._____Travel the Petrified Forest Loop or the Ponderosa Loop.
5._____Give a Jr. Ranger Safety Message (found below) to a visitor or family member.

When you are finished, return to the visitor center desk and review your activities with a ranger who will then sign your Junior Ranger Certificate and present you with your Official Junior Ranger Badge. Present your Junior Ranger Badge and certificate for a 10% discount on any one book sold by the Rocky Mountain Nature Association at the Florissant Fossil Beds Visitor Center. Junior Rangers should be accompanied by an adult to participate in this program. Use the park brochures (mammal, Hornbek, general), programs, and exhibits to help provide answers. If you need more help in answering questions, please ask a ranger.

Safety Message Activity

Explain to your family, friends, or another park visitor why it is important NOT to do the following:

1. **Litter:**
It can carry germs; it takes away from the beauty of the park; animals sometimes try to eat it and choke or get caught in discarded items.

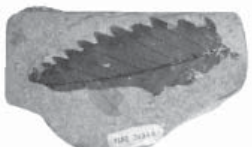
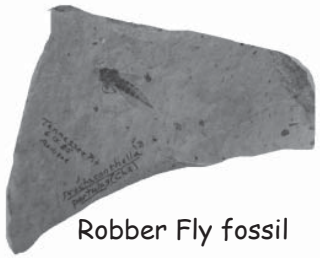
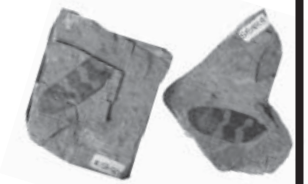
2. **Feed Wildlife**
Wildlife can become sick from eating unnatural foods; animals become accustomed to being fed; Park visitors can be bitten by the animals.

3. **Collecting fossils:**
Florissant's fossils are unique. If you take them, no one else will be able to enjoy them. Removing the fossils takes away important clues about the history of our planet.

Florissant Fossil Beds

Watch for these objects on your visit to Florissant Fossil Beds. When you find one, mark the square with an "X".

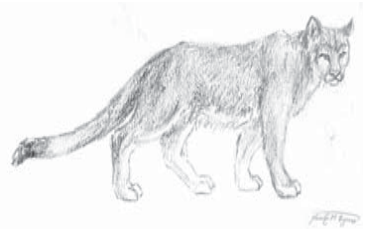
Try to find 4 corners, 4 in a row or ALL of them!

A Ranger	Steller's Jay	Pine cone	 *Fagopsis* Leaf fossil
Aspen	 Robber Fly fossil	Big Stump	Porcupine
 Lantern Fly Wings fossil	Abert's Squirrel	Sequoia leaf fossil	Red Tailed Hawk
Hornbek Wagon	Animal Tracks	*Fagopsis* Fruit fossil	Stump trio

BINGO!

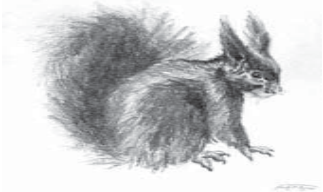
What do animals eat?

It is important for animals to eat their natural foods. Please connect the animals on the left with the food they should eat.



Mountain Lion

Bear



Abert's Squirrel

Elk

Mule Deer

Hamburger

Pizza

Aspen Tree Bark

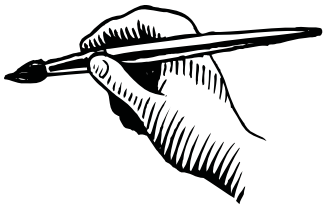
Cell phone

Ponderosa Tree Parts

Bubble Gum

Insects and Grubs

Junior Ranger Artist Activity



Artists can help us learn about the past when they re-create ancient landscapes. In this activity you will:

1.) Learn about the geology and paleontology of Florissant Fossil Beds
(attend a ranger talk, watch the film, go on a walk, look at the exhibits, etc.)

2.) Based on what you learned, draw a picture about the volcano, mudflows, and ancient lake that formed the fossils at Florissant.

Eocene Picture Hunt

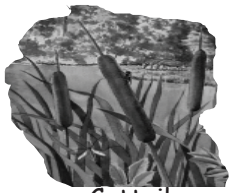
Look for the images below in the picture of ancient Lake Florissant. Circle them in the picture when you find them.
(Hint: A large display of this poster is in the outdoor exhibit area)

Big Redwood Trunk

Longhorn Beetle

Rose

Cuckoo



Cattail

Brushfooted Butterfly

Guffey Volcano

Brontothere

Petrification Maze

Help the butterfly find its way to becoming a fossil. The process for a butterfly to become a fossil is:

1.) volcano erupts producing ash, 2.) The butterfly dies over the lake 3.) butterfly sinks in lake 4.) the butterfly is buried by continuing ash falls and compresses into layers of shale

Start

Volcano erupts producing ash.

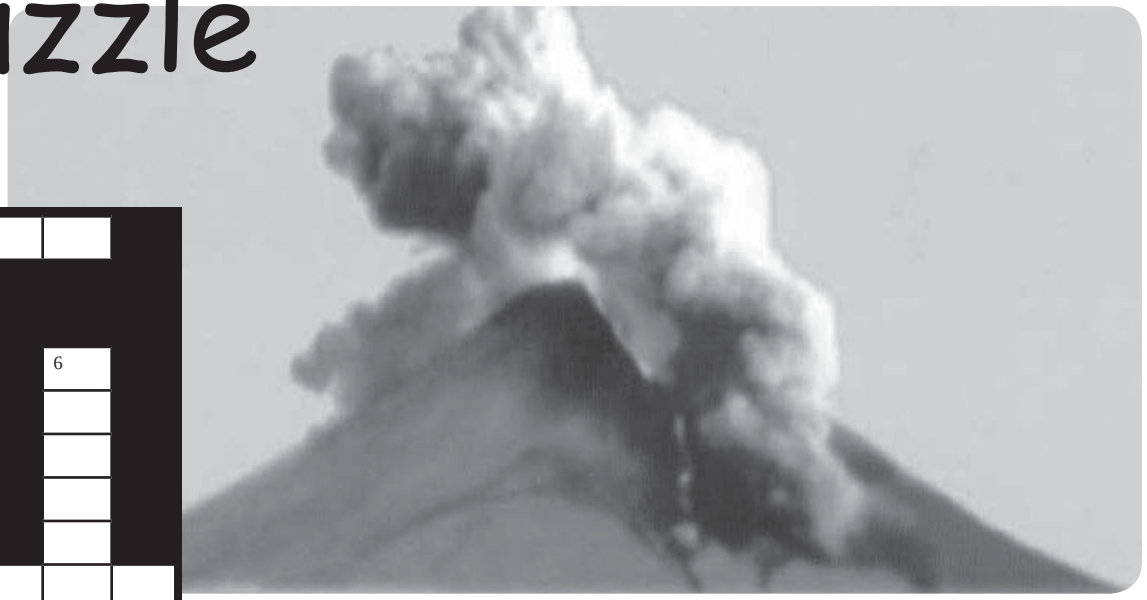
Butterfly sinks in lake.

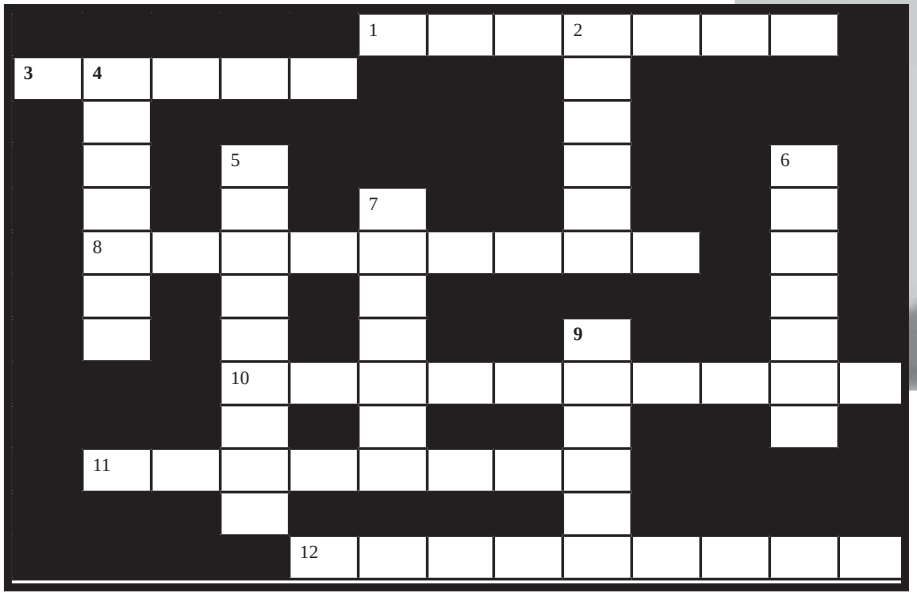
Butterfly compresses in layers of shale.

Butterfly dies over lake.

End

Crossword Puzzle





Across

1. A volcanic eruption created a _____, which surrounded the redwoods of Florissant.

3. Ash from repeated volcanic eruptions combined with sediment from the lakeshore and formed layers of rock called _____, where many fossils are found.

8. Finding a _____ fossil is rare because the wings are so fragile. (For a hint, look at the postcards in the Visitor Center.)

10. In French, _____ means "flowering" or "flourishing".

11. The small sheep-like _____ lived here 34 million years ago.

12. The Abert's squirrel and the porcupine eat the inner bark layer of the _____ pine for food.

Down

2. A _____ is any evidence of life from the prehistoric past.

4. The _____Homestead is named after one of Florissant's first settlers.

5. The _____ redwood stumps in the park are a type of fossil created by a mud flow.

6. When the Guffey _____ erupted, a mudflow created a natural dam that formed ancient Lake Florissant.

7. Thirty-four million years ago, a _____ forest existed in the Florissant valley.

9. The Monument has one of the world's few fossils of a _____ fly, which today lives only in Africa.

Word Scramble

1. Most of the fossils at Florissant Fossil Beds National Monument are impressions of _____ and _____. SNETCIS and STALPN

2. An erupting _____ created plumes of ash which washed into ancient _____ Florissant and helped form and preserve fossils. NAVCOLO and AELK

3. Samuel _____ was a famous paleoentomologist (he studied fossil insects) who reportedly collected 5000 fossils in five days over 130 years ago! DUESDCR

4. Petrified _____ stumps are found in the park as a result of a volcanic _____ that surrounded their trunks. ODWORDE and UFMWLDO

5. Cap _____ formed from another mudflow and has protected our fossils from erosion. COKR

6. An example of the local geological formations can be seen at the shale _____. PCRUTOO

7. The mission of the monument is to _____ and _____ the fossils and nature for _____ generations. TTPREOC and PERVREES and UUERTF

(Words to Choose From: future, insects, lake, mudflow, outcrop, plants, preserve, protect, redwood, rock, Scudder, volcano)

ISFSOLS = FOSSILS

Colorado's National Parks Trivia

Match the trivia with the correct park. Hints are in bold.

1. This **fort** was built at a good site for trading with American Indians, Mexicans, hunters and trappers. _____

2. The fossils here represent 10 of the many **dinosaur** species that existed. _____

3. The **Gunnison** River formed a deep **canyon** here. _____

4. This is the highest national park in the US, with **mountains** up to 14,259'. _____

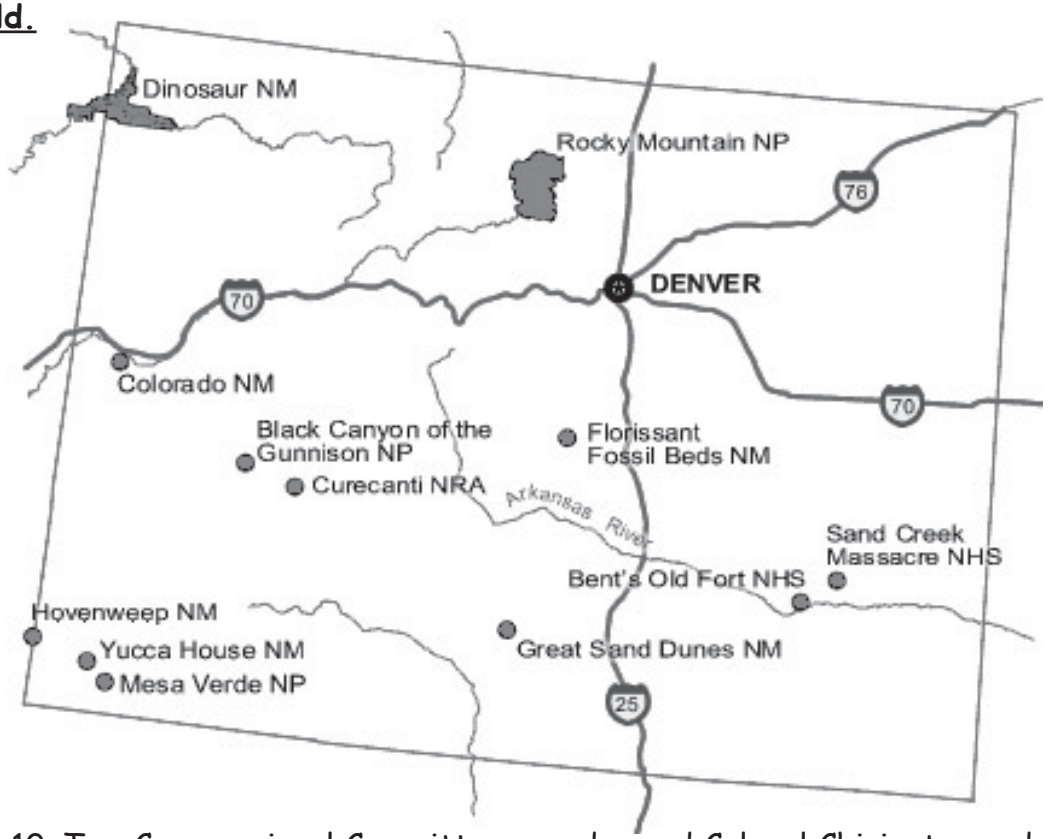
5. The largest recorded Lake Trout in Colorado was taken at this **N**ational **R**ecreation **A**rea. It was a gigantic 50.35 pounds and 44.25 inches. _____

6. There is no **yucca** growing in this monument today. _____

7. Flanked by some of the highest peaks in Colorado, the tallest **sand dunes** in North America are in this high mountain valley. _____

8. This park preserves sites built by Ancestral Puebloans who lived on the **mesa** tops and in the canyons. _____

9. Petrified redwood stumps and thousands of detailed **fossils** of insects and plants reveal the story of a very different prehistoric Colorado. _____



10. Two Congressional Committees condemned Colonel Chivington and many of his men, labeling the events took place here a **massacre**. _____

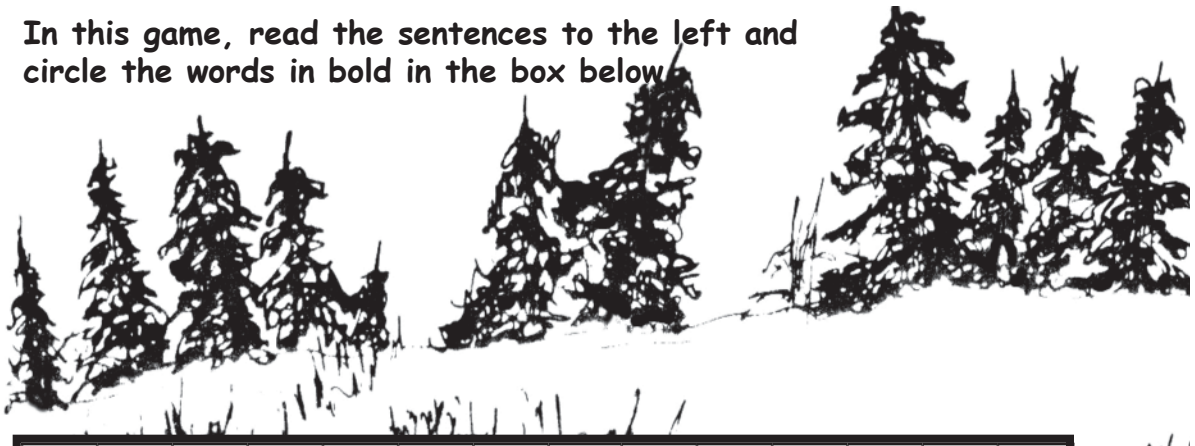
11. Similarities in architecture, masonry, and pottery styles indicate that the people who lived here were closely associated with groups living at **nearby** Mesa Verde. _____

12. Magnificent views range from the colorful sheer-walled canyons and fascinating rock sculptures to the distant **Colorado** River valley, the purple-gray Book Cliffs, and the huge flat-topped mountain called Grand Mesa. _____

Homestead Word Hunt

The Hornbek Homestead is an original log home built in 1878. Learn about the homestead and Adeline Hornbek. Ask for one of our brochures at the front desk or find one at the brochure box in front of the Hornbek Homestead.

In this game, read the sentences to the left and circle the words in bold in the box below.



1. The **carriage shed** stored wagons and buggies and probably was used to repair ranch equipment.

2. The **Castello** trading post was two miles north of Adeline's homestead.

3. The **root cellar** was built into a hillside, and served as Adeline's "refrigerator" to store and preserve food.

4. **Adeline** Hornbek was the first person to homestead on land that is part of Florissant Fossil Beds National Monument.

5. The **parlor** was a room in the house that was used for dancing, socializing, and entertaining guests.

6. Passed in 1862 by President Abraham Lincoln, the **Homestead Act** allowed settlers to obtain 160 acres of free public land.

7. The **bunkhouse** was used to house the hired men.

8. Elliot **Hornbek** Jr. was Adeline's youngest son and named after her second husband.

9. By 1885, Adeline had increased the value of her property by almost **five** times.

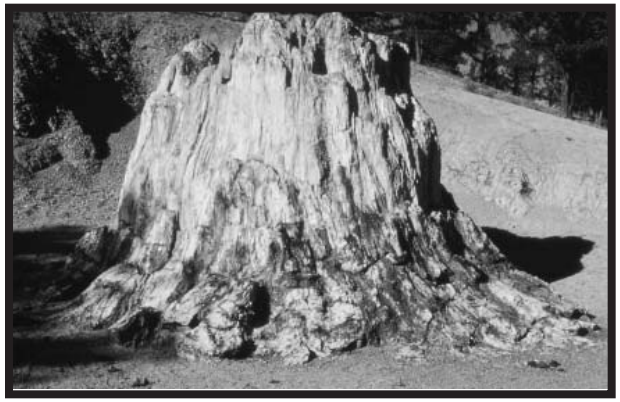
Z	F	R	O	O	T	C	E	L	L	A	R	O	P
G	J	E	M	Y	V	C	U	B	S	X	Q	W	B
A	R	H	Y	P	A	R	L	O	R	G	I	H	U
P	N	O	E	T	U	J	M	A	W	O	G	L	N
T	U	M	K	F	Z	Y	H	O	R	N	B	E	K
R	Y	E	I	I	P	F	D	B	I	C	G	K	H
O	D	S	E	V	W	J	U	T	E	N	W	L	O
Q	C	T	R	E	U	X	F	R	A	L	E	G	U
Y	R	E	H	A	O	P	Z	W	B	H	L	T	S
U	A	A	W	I	C	A	S	T	E	L	L	O	E
B	A	D	E	L	I	N	E	O	R	Y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

The Fossil Story

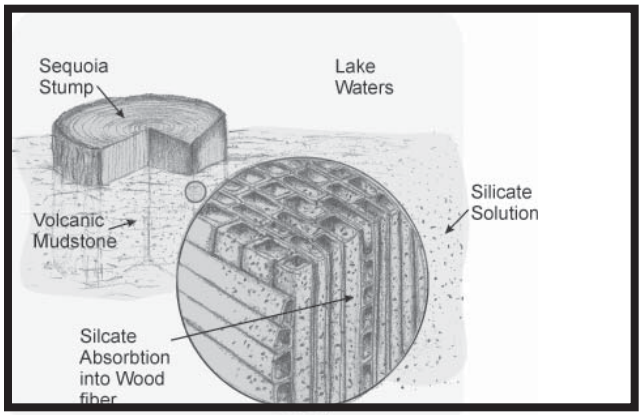
DIRECTIONS:
The pictures below tell the story of how the redwood trees were fossilized. Your job is to figure out the order of events. You will label 1 - 4 in the boxes next to the picture. Start with "1" for the first event. You can find clues on the exhibits behind the Visitor Center.

The mudflows hardened into volcanic mudstone, burying the bottoms of the redwoods. The trees died and the rest of the tree fell over and rotted away.

Volcanic eruptions produced mudflows, which buried a forest of giant redwoods.



The petrification process preserved both the general outer appearance of the tree as well as its inner cellular structure.

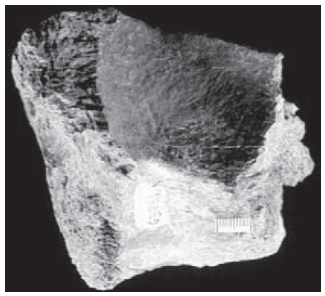


Groundwater moved through the mudstone, dissolving the mineral "silica." The water carried the silica into the buried redwood trees filling the cells of the trees with silica - petrifying them.

Paleontology Skills

How do we know about life 34 million years ago? Paleontologists learn about the past by studying fossils. Look at the fossils below and discover the story they tell.

Geologic Time



Brontothere vertebrate

Mesohippus jawbone

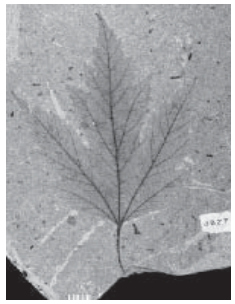
Which era of life do these fossils tell us about?

a. Paleozoic - Age of Fish
b. Mesozoic - Age of Dinosaurs
c. Cenozoic - Age of Mammals

(Hint: what kind of animal is a Mesohippus?)

Climate Change

Tsetse Fly



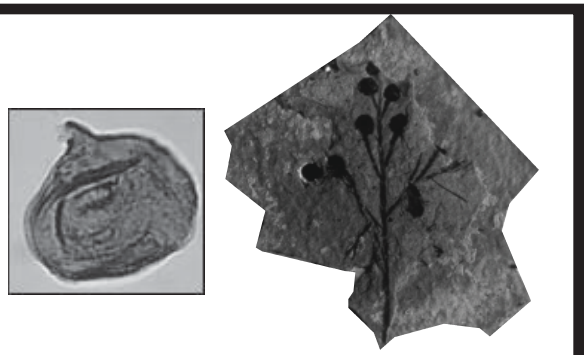
Acer florissantii

What do these leaf and insect fossils tell us about the climate of the time?

a. It was wetter and warmer.
b. It was about the same as today.
c. It was drier and colder.

(Hint: Look at the exhibits near the second stump shelter)

Identification



These fossils indicate which type of tree grew in this area?

a. Oak
b. Redwood
c. Palm

(Hint: Look in the Visitor Center exhibits.)

Where did all the fossils go?

1. Read the quote below. It is from an 1893 newspaper about the petrified redwood trees. Then answer the question below.

"All have been removed by tourist and relic hunters... now one of the greatest and rarest natural curiosities ofthe world has been despoiled. The trunks and logs have been sawed up and broken to pieces and taken East."

What was happening to many of the petrified redwood trees in the late 1800's?

_____

2. Find and read the letter written by a park visitor that is on display one of the visitor center exhibit drawers.

What did the author do that was wrong? _____

What did the author do that was right? _____

Why did the author have a good time?_____

_____

Why are you having a good time? _____

Remember to only take pictures, not fossils or wildflowers.

What would you say to someone if they asked you if they could collect fossils at the Monument?

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Junior Ranger

This certificate is awarded to:

_____

For completing the requirements of the Junior Ranger program at Florissant Fossil Beds National Monument

_____

Park Ranger Date

Junior Ranger Pledge:
“As a junior ranger, I promise to help protect Florissant Fossil Beds National Monument. I will leave all national park areas a little better by learning about nature and history, safely exploring, and protecting these special places.”

_____

Junior Ranger

Junior Ranger Booklet

National Park Service
U.S. Department of the Interior

Florissant Fossil Beds
National Monument

Mission Statement:

The purpose of Florissant Fossil Beds National Monument is to protect and preserve the unique plant, insect, and vertebrate fossils, and related objects of scientific value found in the Florissant Formation; to control fossil collection and conduct scientific research and interpretation of the fossils; and to protect, preserve, and interpret the natural and cultural resources of the Monument.

Become an online Junior Ranger!
www.nps.gov/webrangers

For more information:

Florissant Fossil Beds National Monument
P.O. Box 185
Florissant, CO 80816
(719)748-3253 www.nps.gov/flfo

This Junior Ranger booklet was funded by the National Park Foundation, national charitable partner of America's National Parks with support from the El Pomar Foundation. The National Park Foundation supports the NPS Junior Ranger program as part of their nationwide effort to connect children to America's heritage and ensure the future of our national parks.