

Adventures in
**FLORISSANT
FOSSIL BEDS**



Florissant
Fossil Beds
National
Monument

Official
**JUNIOR
RANGER**
Activity Book





Welcome to **FLORISSANT FOSSIL BEDS**

To Earn Your Junior Ranger Badge:

- 4-7 years (3 pages), 8-10 years (5 pages), 11 years and older (7 pages).
- When you are finished, bring your book back to the visitor center to receive your badge.

Follow the Junior Ranger Rules:

SAFETY FIRST!

- Leave everything in the park for others to see (i.e. fossils, rocks, flowers, etc). Take only photos and memories.
- Enjoy animals from a distance without trying to feed them or chase them.
- Take care of the park. Leave it better than you found it.
- Be prepared. This means wear sunscreen and a hat, sturdy shoes, and carry plenty of water.

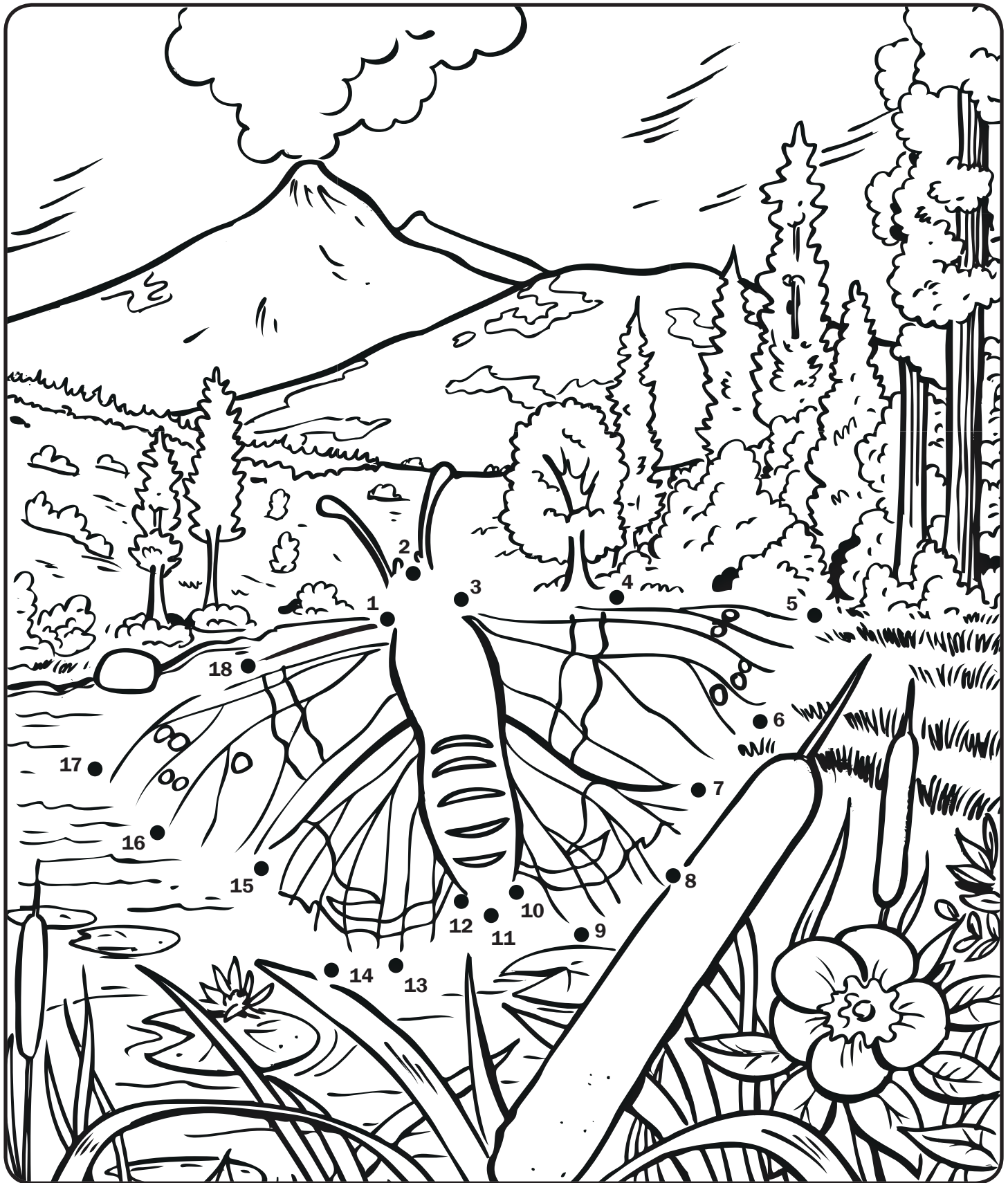
ADULTS:

You are encouraged to work closely with your child. Many questions presented here are open-ended and meant to encourage discussion of ideas. Place less emphasis on correct answers, and more emphasis on the process of discovery. You can help, but the work should be your child's own.

DOT TO DOT

INSTRUCTIONS: Complete the dot to dot activity by drawing a line and connecting each dot starting at 1 and going to 18. Color me!

»»» **What animal did you draw?**



★ MAP MAKER



Hi There! My name is Carl and I'm a Junior Ranger at Florissant Fossil Beds. One of my favorite things to do is to make maps.

Have you ever used a map before? How might a map be an important tool for a visitor or ranger at Florissant Fossil Beds? In this activity you will make a map of a special place that you find during your visit (i.e. a trail, a shady secret spot under a tree, the Hornbek Homestead). You can draw pictures or make symbols to represent things in the area like trees, fossils, or buildings. If you are able to, add a key or perhaps a compass to tell directions. When you get home, share your map with a friend!



BINGO!

<p>Find a Ponderosa Pine tree and sketch it below.</p> <p>Smell the bark!</p>	<p>Sit in a quiet place for 2 minutes.</p>  <p>Can you hear the wind through the pine trees?</p>	<p>Wave to a ground squirrel!</p>	<p>Look at the sky. Sketch what you see below.</p>
<p>Visit the Hornbek Homestead. How many wagons can you spot?</p>	<p>Hike a park trail.</p>	<p>Find an animal track and sketch it.</p> <p>Whose is it?</p> <p>_____</p>	<p>★ Attend a Ranger program.</p> 
<p>Look for lichen growing on the rocks. Circle the colors that you find.</p> <p>Black Purple Blue Green Yellow Orange Red White</p>	<p>Spot a soaring bird.</p>  <p><i>Hint: Look up!</i></p>	<p>Discover a leaf or insect fossil in the visitor center exhibit area.</p> <p>What type of fossil did you find?</p> <p>_____</p>	<p>Find an animal's home. Sketch it.</p> <p>Who does it belong to?</p> <p>_____</p>
<p>Sketch a wildflower.</p> <p>Smell it, don't pick it!</p>	<p>Have a picnic.</p>  <p>Clean up your trash. Don't attract bears, birds, or chipmunks!</p>	<p>Touch an aspen tree. What color is its bark?</p>	<p>Ask a Park Ranger a question.</p> 

FLORISSANT FOSSIL BEDS

As you explore the park, try to get a **BINGO!** by crossing out four boxes in a row, either vertically, horizontally, or diagonally.

Leaves are amazing. They can make their own food just by using sun, water, and air. They make oxygen for us to breathe. They also can tell us about events that occurred in the ancient past.

Instructions: Find a leaf outside. Study it but don't pick it. Sketch it in the box labeled "Modern". Next, find a fossil leaf in an exhibit in the visitor center. Study and sketch it in the box labeled, "Ancient". Answer the questions in the boxes.

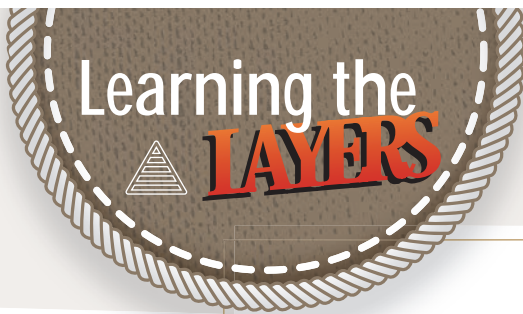
Modern.....

How big is your leaf?
Is it a needle or a flat leaf?
Does it have smooth edges or "teeth"?
Why did you choose this leaf?

Ancient.....

How big is your leaf?
Is it a needle or a flat leaf?
Does it have smooth edges or "teeth"?
Why did you choose this leaf?
Bonus: What do fossil leaves tell us about the ancient climate of Florissant?
(hint: there is an exhibit about this in the visitor center)



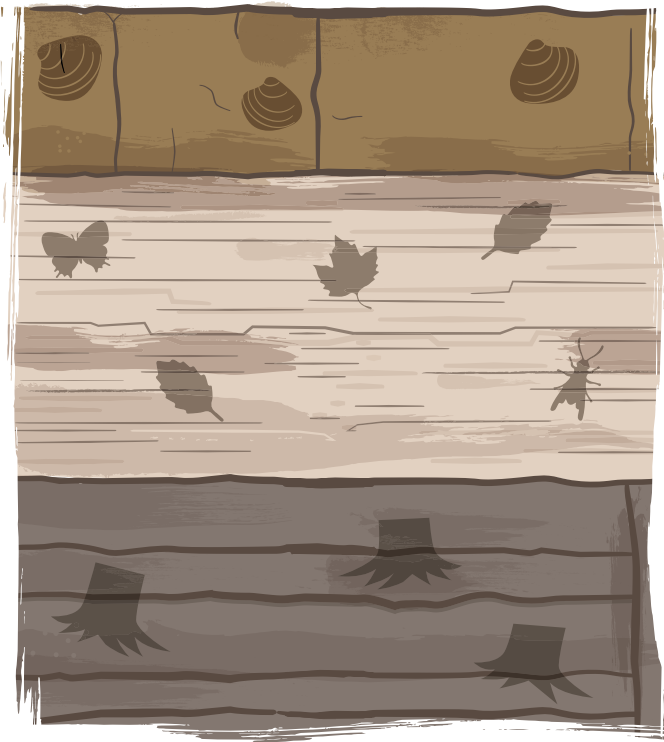


Learning the Layers

Instructions: Find the exhibit panel called “Rock Layers of Florissant” in the visitor center. This panel is located in the back right corner of the exhibits area in the visitor center next to a big rock wall. Read about the different layers of rock that lie beneath the Florissant Valley. There are some rock samples to touch and some flip up panels where you can see real fossils.

1.) Write the name of each rock layer in the spaces provided below next to each rock layer.
(hint: there is a word bank at the bottom of this page)

2.) Extra credit: Do you know what kinds of fossils have been found in each layer?



Word bank: Caprock Conglomerate Unit, Lower Mudstone Unit, Middle Shale Unit

Outdoor challenge? **BONUS**

Get a hiking map from the front visitor center desk. Locate and hike to the Shale Outcrop wayside exhibit behind the stump shelter area and/or Big Stump. When you get to the shale outcrop see if you can recognize the rock layers based on what you learned in the visitor center. Take a picture or sketch them below.

FLY MAZE

How does a fly end up on a rock?

How does a tiny robber fly become a fossil without being squished and destroyed?

Go through these steps in the right order:

1. Volcano erupts, producing ash
2. Robber fly dies over the lake
3. The robber fly sinks in the lake
4. The robber fly is buried by weathered ash and clay
5. Over time, ash gets compressed into layers of shale
6. Robber fly fossil!

START



Yay! You helped the tiny robber fly find its way to becoming a fossil!

FOSSIL!

Email Friends **OR FAMILY**



Email a Friend or Family

Write or email your Friend or Family!

CHALLENGE: Really send it!

< 6

To:

Subject:

Below write a few sentences about what you did, what you observed, what you thought and felt while you were at the park:

Attach a Photo:

Draw something cool
to attach to your email



Be a PALEONTOLOGIST



Paleontologists are scientists who study what life was like on Earth a very long time ago. They do this by “reading” fossils and rocks for clues about past environments and life.

Have you ever wondered what it might be like to be a paleontologist? Find the exhibit in the visitor center called “Into the Field”.

Match the tool below to what it is used for in the field:

Rock Hammer: is used to dislodge chunks of rocks that may contain fossils.

Microspatula: shale forms in layers, like the pages in a large book. A thin tool like this can be used to separate the “pages”.

Compass: a geologic compass is used to help measure the rock layers in the field.

GPS: every fossil location is mapped to help future research and monitoring of the site.

Toilet Paper: yes, that’s right! this is the most effective and inexpensive way to protect priceless fossils.



Answer the following questions:

1. What are some of the challenges paleontologists face in their work?
2. Why is it important to document the location of the fossils?
3. Who can be a paleontologist?
4. Do you want to be a paleontologist? Why or why not?

BONUS:

Perhaps one of the most important tools of any scientist is a good question. Everytime a paleontologist is looking for fossil clues they are trying to answer a question. Go into the next part of the exhibit area where you can “meet” some scientists and learn about their questions.

1. Write down one of the questions that the scientists asked in their study.
2. What questions do you have?

Women search for their place in the Florissant Valley

The fossil mysteries and beautiful views of the Florissant area have attracted curious people for thousands of years. Women have strongly influenced, and been influenced by, the potential of this mountain valley. Below are just a few of the many women who have contributed to the success of Florissant Fossil Beds. Read the sentences and search for the words in **bold** in the box below.

1. The **Homestead Act** of 1862 allowed women, like Adeline **Hornbek**, to own 160 acres of free public land.
2. Charlotte **Hill** was a homesteader and fossil hunter! Her fossil collections greatly influenced early Florissant **paleontology**.
3. Wilmatte **Cockerell** studied plants (**botany**) and insects (entomology). A red sunflower and a purple bee are named after her.
4. Fearing a great loss to future generations, Dr. Estella **Leopold** formed the Defenders of Florissant when the valley was threatened with a housing project. She has been honored with numerous **conservation** awards for her life's work.
5. **Activist** and educator, Vim **Wright** was ready to stand in front of bulldozers with the Defenders of Florissant! Born in Istanbul, she cherished the wild spaces of her adopted American home.
6. Dr. Dena **Smith** studies plants and insect interactions in the Florissant fossils. Her work increases our understanding of how plants and insects adapt to **climate change**.

OLDER KIDS:
Find Dr. Dena Smith's quote in the exhibit hall about words she heard as a young girl. Have you ever been told words like the ones Dr. Smith overheard? How did you respond?

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

From the Ute PERSPECTIVE



Northern Utes are the descendants of the people that once hunted and gathered in the Florissant valley. Read the following quote from Northern Ute Elder, Clifford Duncan:

When describing the Florissant valley...

Valley of the Shadows:

“Only living things cast a shadow. This shows that the soul is in the body. These fossil stones are holding the shadows, or souls, of the plants, and animals. That is why the Valley of the Shadows is so sacred to my ancestors.”

Clifford Duncan

Elder, Northern Ute Nation

QUESTIONS:

1. What feelings are expressed in Clifford’s words?
2. What feeling(s) do you have after seeing the fossils?
3. Are there particular words that Clifford used that stand out to you or seem important?



Hike the **Ponderosa Loop** or the *Petrified Forest Loop* to complete this page. Both of these trails can be found behind the visitor center.

- ▶ I hiked (circle one) **Ponderosa Loop** *Petrified Forest Loop*
- ▶ Look for wildlife as you are hiking. Did you see any? Look for animal [signs] which could be holes/burrows, tracks, scat, or feathers. Draw and write about your discoveries below.



Find a place where you can stand or sit quietly for a few minutes. Close your eyes and listen.

List the sounds that you heard.

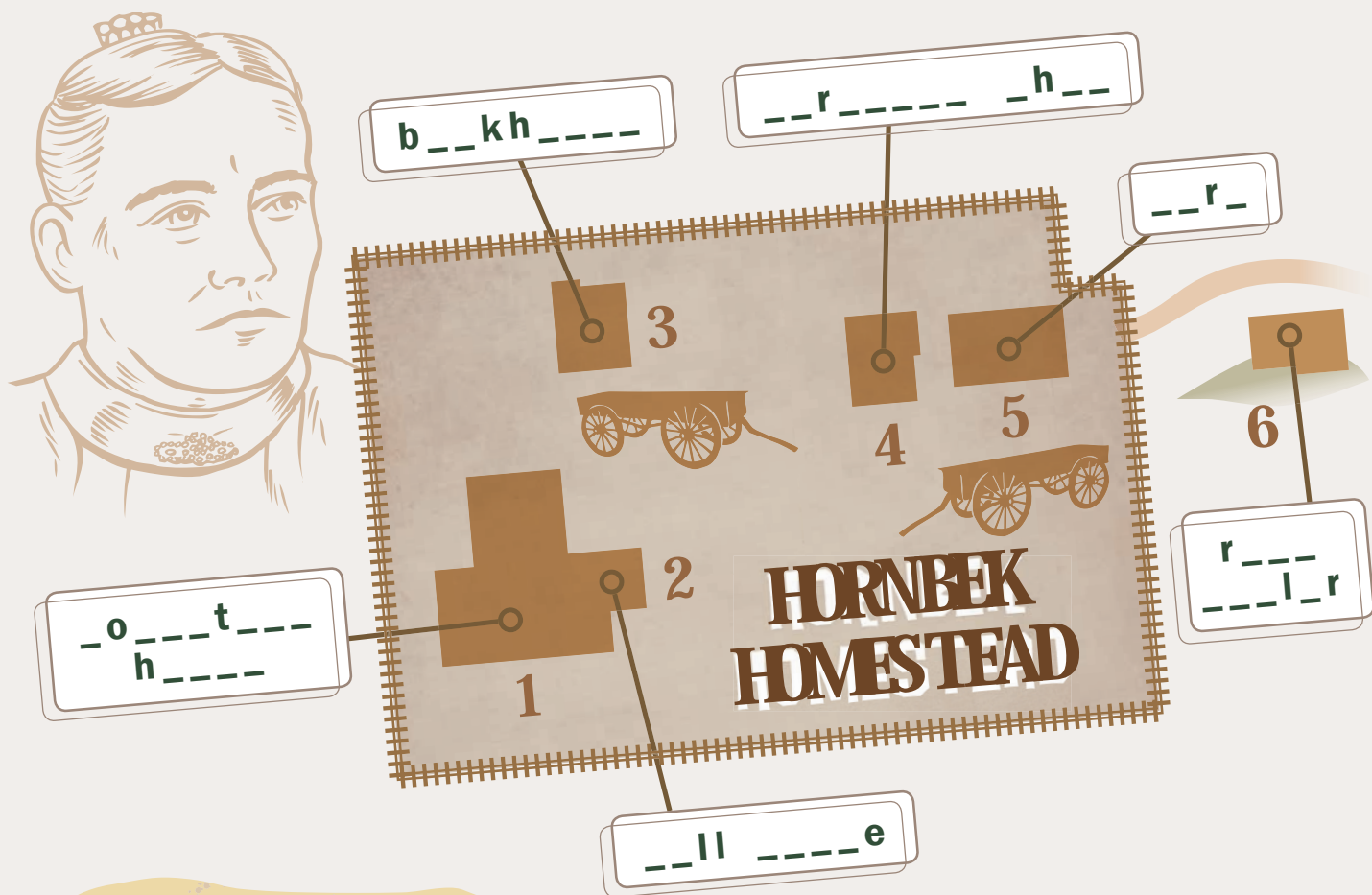
No Ordinary ★ HOMESTEADER

Adeline Hornbek was not a typical homesteader.

In the 1870s, after the loss of two husbands and two homes, this single mother of four moved her family to the Florissant Valley. At a time when women had few opportunities to own property, she filed a claim to homestead 160 acres here.

Within seven years, Adeline had built a sizeable house and nine outbuildings, and had acquired \$4,000 worth of livestock. On top of daily homestead chores and raising children, she added a job at the general store in Florissant and was an active member of the school board.

Label all of the structures at the Hornbek Homestead:



Word bank:

- | | |
|-----------------|---------------|
| root cellar | bunkhouse |
| homestead house | carriage shed |
| well house | barn |

Built in 1878, the finely crafted Hornbek house stands as a testament to countless pioneers who overcame hardship to create new lives in new lands.



PICK YOUR NEXT Adventure!

A WORLD OF JUNIOR RANGER ADVENTURES AWAITS YOU! There are over 400 national parks, monuments, preserves, recreation areas, seashores, lakeshores, historical parks, battlefields, and memorials in the United States. Whether you are continuing your travels or heading home, there is something exciting in your future! A few parks are featured here.

MESA VERDE, CO

KATMAI, AK

SAGUARO, AZ

DEVIL'S TOWER, WY

MOUNT RUSHMORE, SD

YELLOWSTONE, WY

CAPE HATTERAS, NC

CAPULIN VOLCANO, NM

BLACK CANYON, CO

GREAT SAND DUNES, CO

ARCHES, UT

GRAND CANYON, AZ

STATUE OF LIBERTY, NY

EVERGLADES, FL

BENT'S OLD FORT, CO

CURECANTI, CO

CHECK OFF THE ONES THAT YOU HAVE ALREADY VISITED.

Rank the ones you would like to visit someday by placing a number next to your favorites (1,2,3...).

COLOR them all!

FLORISSANT

Fossil Beds National Monument



“I, _____, as a
Junior Ranger, promise to help protect the fossils,
plants, animals, and history of Florissant Fossil
Beds National Monument and share my
adventures with others.”



Junior Ranger Signature

Park Ranger Signature

Date

OFFICIAL JUNIOR RANGER
ACHIEVEMENT AWARD