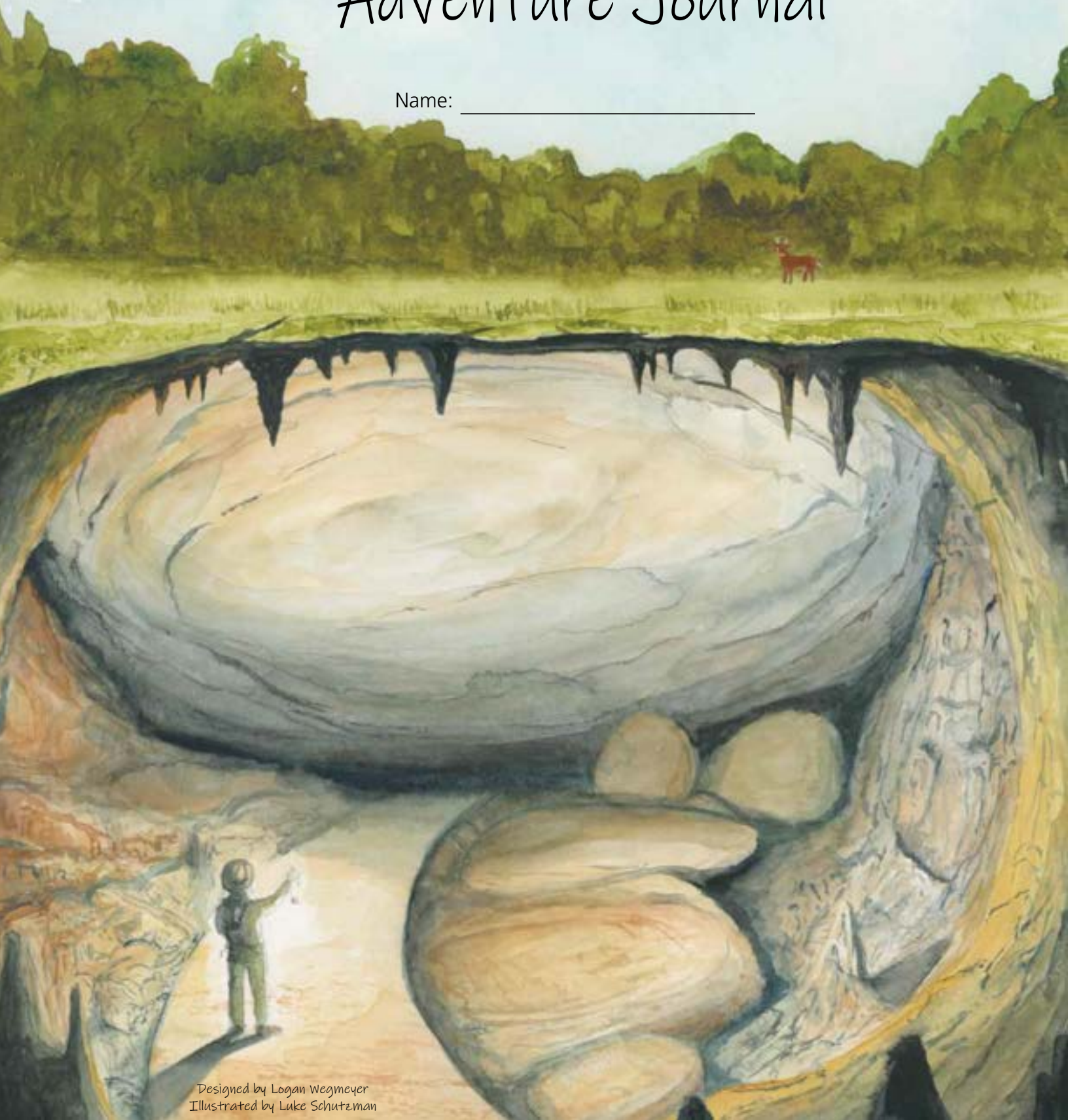




# Junior Ranger Adventure Journal

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



# Become A Mammoth Cave Junior Ranger



In order to become a Mammoth Cave Junior Ranger you must complete three tasks.

**1. Complete the number of activity pages for your age range.** Every Junior Ranger must complete the activity page "Getting Started".

**Ages 4-7** Must complete **6** activity pages

**Ages 8-12** Must complete **8** activity pages

**Ages 13+** Must complete **10** activity pages

**2. Go on at least one cave tour, attend a ranger-led program or hike through the woods.** *Hint* - The activities "Snapshot", "Scavenge For Answers", "Citizen Science", and "Follow Me!" are made for hikes through the woods.

**3. Once you have finished your first two tasks, get your book checked by a ranger in the visitor center and receive your Junior Ranger badge and signed certificate.**

Special thanks to:



Show us how your adventure here at the park went on social media and use the hashtag

#MammothCaveJR

A white rectangular card with a black header. The header contains the text "National Park Service" and "U.S. Department of the Interior" in white. Below the header, the text "Mammoth Cave National Park" is written in a bold, sans-serif font. Underneath, there are two social media icons: an Instagram icon followed by "@mammothcavenps" and a Facebook icon followed by "@MammothCaveNPS". At the bottom of the card, the text "More information at: www.nps.gov/maca" is written in a small font.

# Getting Started



Welcome to Mammoth Cave National Park, the longest known cave system in the world! We are excited you have come to explore this special and diverse park. There is so much to learn, above and below ground. Be sure you go on a cave tour or hike through the forest. There is an adventure here for everyone.

This journal can be a tool for your adventure at Mammoth Cave. Write down how your visit went at the National Park. Explain how the park is similar to where you live, and how it is different.

## My Adventure at Mammoth Cave

Date I was here: \_\_\_\_\_

What the weather was like: \_\_\_\_\_

Favorite part of my visit: \_\_\_\_\_

I learned this at Mammoth Cave NP: \_\_\_\_\_

Mammoth Cave NP is similar to where I live because: \_\_\_\_\_

Mammoth Cave NP is different from where I live because: \_\_\_\_\_

# Snapshot

People have been taking photos of the world around them since the invention of the camera. A camera can be useful for making observations while leaving things as you find them in the park.

**Use a phone or digital camera to take some photos of your visit.** They can be of animals, plants, people, buildings, or anything you see.



— **Make sure to note where you took the photo, or any other observations.** —  
**Show your pictures to the ranger checking your book.**

Photo Notes

If you don't have a camera, draw what you saw!

# For Generations to Come

Part of being a Junior Ranger is helping protect these beautiful and special places. When exploring, leave everything the way you found it. This helps **preserve** the cave and forests for generations to come. Mammoth Cave has more than 500,000 visitors a year – even small changes made by each person can add up to big impacts.

**Read the sentence below and write or draw the effect these changes would make on the park and environment.**

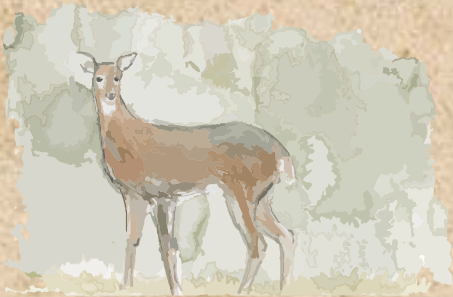


What would happen...

...if each park visitor collected a few rocks or took some cave formations?



...if each park visitor scratched his or her name on a tree or the cave walls?



...if each park visitor picked a plant or flower and took it home?



There are some historic writings on the cave walls, but this was done before it was not allowed.

Junior Ranger Tasks!

Remember ...leave only footprints!

...take only pictures!

...make only memories!



# Adapt To Your World

- Part 1

All creatures have special body parts or behaviors that help them survive in certain environments. These features are called **adaptations**. An adaptation might be skin or fur that helps to blend in, claws to catch food, wings to soar high, or keen eyes to see far.

Caves are a special kind of home with little or no sunlight, food, or water. Animals living in this world need special adaptations to survive. **Below, match the picture and names with the correct cave creature adaptation. Draw a line to connect the three sections.**

## Animal



## Name

Woodrat

## Adaptation

I send out high-pitched sounds that bounce off objects and come back to me.



Eyeless Fish

I have very long antennae that I use to feel around in the dark.



Cave Cricket

I use a special scent to mark where I have been. This helps me find my way back.



Cave Crayfish

I have special cells in my tail that can feel light.



Tricolored Bat

I have no eyes and can save my energy. I can go without food for up to two years.

# Adapt To Your World

- Part 2

The animals living in caves have *evolved* and *adapted* to live there. Scientists continue to discover new kinds of animals living in the cave. **Imagine you are a scientist who just discovered a new cave creature.** What does it look like? Where in the cave did you find it? Near the entrance? In the water? What adaptations help it survive? What does it eat? It is your discovery, so make it your own.

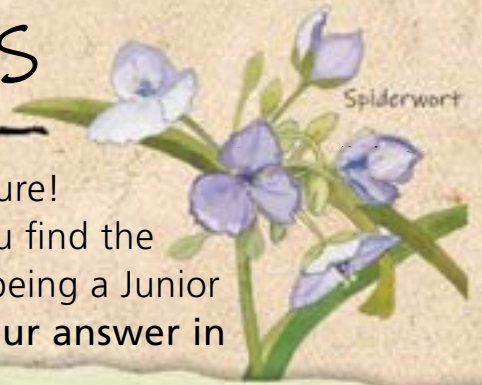
**Use the space below to draw your new discovery. You can use the previous page to help give you ideas.**



Cave Salamander

Cave animals that need to leave the cave to find food are called Troglophiles. Animals that live their whole life in the cave and never leave are Troglobites.

# Scavenge For Answers



Spiderwort

A Junior Ranger must be focused and have a sense of adventure! Mammoth Cave National Park has lots to see and do. Can you find the answers below? Don't worry if you cannot find everything – being a Junior Ranger is all about trying your best. **Draw or write down your answer in the different boxes and check them off as you go.**

Remember- Don't actually collect the things you find in the park! Leave them for others to discover!

Enjoy an above-ground, virtual tour of the cave - ask a Ranger about the "Beneath Your Feet" Tour.

|  |   |   |   |
|--|---|---|---|
| <input type="checkbox"/><br><br>Something not normally found in nature | <input type="checkbox"/><br><br>Find something that is your favorite color  | <input type="checkbox"/><br><br>_____ Miles<br><br>The official length of Mammoth Cave<br><small>(Check the exhibits in the Visitor Center)</small>           | <input type="checkbox"/><br><br>Find something bigger than you  |
| <input type="checkbox"/><br><br>See something with wings               | <input type="checkbox"/><br><br>Find a source of water  | <input type="checkbox"/><br><br>Something that is rough   | <input type="checkbox"/><br><br><br>Hear a bird song |
| <input type="checkbox"/><br><br>A leaf from a tree                     | <input type="checkbox"/><br><br><br>Find the National Park Service Arrowhead | <input type="checkbox"/><br><br>A wild animal<br><small>(Give it plenty of room)</small>  | <input type="checkbox"/><br><br>Find something that smells  |
| <input type="checkbox"/><br><br>Find something smaller than you        | <input type="checkbox"/><br><br>Equipment a caver would use   | <input type="checkbox"/><br><br><br>The Historic Entrance to Mammoth Cave | <input type="checkbox"/><br><br>Find something that is smooth   |

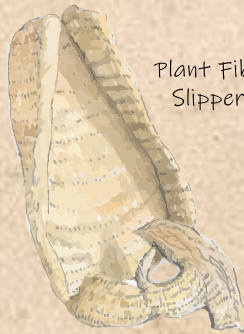


# The Very First Explorers

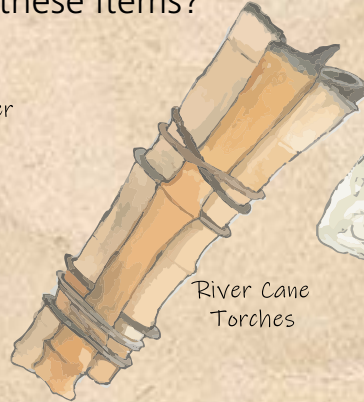
The first known people to explore Mammoth Cave were Native Americans from 5,000 years ago. They ventured into the cave seeking minerals and crystals. They left behind *artifacts* during their adventures, handmade tools that helped them in the dark and rocky world. **Look at the tools below and write down what you think they were used for.** Would you go into a cave with just these items?



Gourd Bowl



Plant Fiber Slippers



River Cane Torches



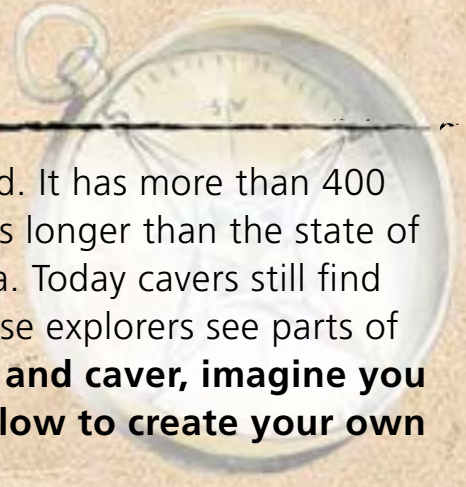
Mussel Shell Scoop

Modern cavers now use items like helmets, ropes, compasses, and flashlights to help them explore, map and stay safe in the cave.

Gypsum Flower



# New Frontiers



Mammoth Cave is the longest known cave system in the world. It has more than 400 miles (640 km) of mapped passages. Placed end-to-end, that's longer than the state of Kentucky! Yet the whole cave lies within a relatively small area. Today cavers still find new passageways and rooms at Mammoth Cave. Some of these explorers see parts of the world never seen before by humans. **As a Junior Ranger and caver, imagine you have found a new set of passageways. Use the space below to create your own mapped passages.**

Don't forget to use the key provided to help you draw certain formations found in the cave. Maps and rangers around the visitor center could also give you tips. Finally, name your new passages and don't forget to label your created discoveries.



**Key**

|  |              |  |            |  |             |  |           |
|--|--------------|--|------------|--|-------------|--|-----------|
|  | Vertical Pit |  | Stalactite |  | Draperies   |  | Water     |
|  | Dome         |  | Stalagmite |  | Soda Straws |  | Stream    |
|  | Drop         |  | Column     |  | Flow Stone  |  | Breakdown |

# Drip...Drop...Drip...Drop...

Mammoth Cave's massive passageways are made by water and the slow passage of time. Water from rainfall or rivers seeps into cracks and sinkholes in the ground. As the water runs through the soil, it picks up a small amount of carbon dioxide. This creates **carbonic acid**. Over millions of years this acidic water erodes cracks into hollow passageways and rooms.

Inside, cave formations are also created by water and time. Sometimes the water picks up minerals on its way into the cave. The water then lets go of the minerals and slowly over time, drip by drop, formations appear. The shape of these formations depends on how the water enters the cave.

**Help finish the names of the different cave formations below. Come up with your own name for these unique looking creations.**

This cave formation is made when water flows down the sides of walls and floors making a sheet-like cover.

Official Name: \_\_\_\_\_ stone

New Name: \_\_\_\_\_

Hanging like an icicle tight to the ceiling, this formation is made from dripping water and has a pointed end.

Official Name: Stalac \_\_\_\_\_

New Name: \_\_\_\_\_

Formed when water drips from the ceiling and minerals build up on the floor. Watch out - you might trip on them.

Official Name: Stalag \_\_\_\_\_

New Name: \_\_\_\_\_

These dam-like formations build up little by little at the rims of pools where mineral-laden water collects. Over time they may collect in tiers that look like stairs.

Official Name: \_\_\_\_\_ stone dam

New Name: \_\_\_\_\_

When water pops and splatters on the wall, these cave formations form bumpy balls.

Official Name: \_\_\_\_\_ corn

New Name: \_\_\_\_\_

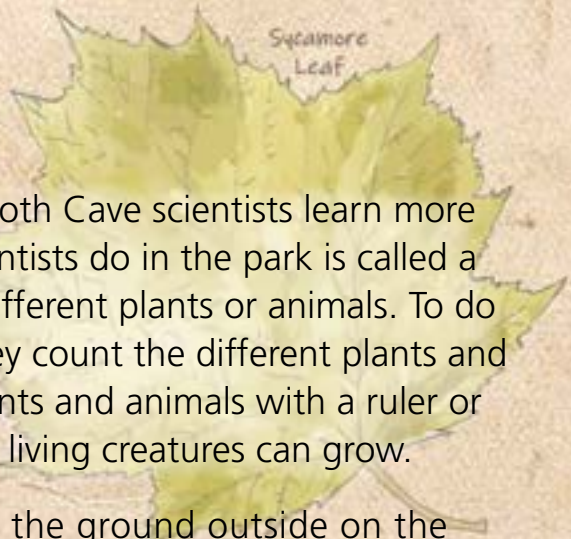


Frozen Niagara



Hint: Check the exhibits in the Visitor Center or go on a Frozen Niagara tour

# Citizen Science



Anyone – like you – can be a scientist. You can help Mammoth Cave scientists learn more about the **diversity** of life in this park. One experiment scientists do in the park is called a **grid test**. A grid test helps find out if an area has a lot of different plants or animals. To do this, scientists make a small square on the ground. Then they count the different plants and animals they see in the square. They also measure these plants and animals with a ruler or tape measure. This helps them learn how big or small these living creatures can grow.

**Perform a grid test.** Make a pretend square on the ground outside on the forest floor. Draw, count, and measure what you see in the square. Then answer the diversity question about your experiment below.

A large blue grid for drawing and measuring. On the left side, there is a vertical ruler with markings from 0 to 17 centimeters. The grid is 18 squares wide and 18 squares high.

Number of...

Plants \_\_\_\_\_

Animals \_\_\_\_\_


Size of the largest...

Plant \_\_\_\_\_

Animal \_\_\_\_\_

A lot of different kinds of plants and animals means the area has high **diversity**. Was your grid test in a diverse area?

YES     NO

\*Watch out for  poison ivy when completing this activity\*

# Follow Me!

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Some of the first people to give cave tours were enslaved African Americans. The most famous of these guides was Stephen Bishop. Stephen guided, explored and charted the cave. He became the first person to cross the Bottomless Pit, discovered eyeless fish, and drew a detailed cave map. Stephen named many of the cave's passages as we know them today. His signature can be found drawn on the cave walls.

African American cave guides have continued to work at Mammoth Cave. Men like Mat Bransford, Ed Bishop, Bob Lively, and Will Garvin have left their mark on the cave as well.

**Walk the Heritage Trail and find Stephen Bishop's grave in the middle. Answer the questions below.**

Being enslaved meant that another person owned you and forced you to work and live a certain way. Men like Stephen were allowed to explore the cave when they were not working. Why do you think Stephen spent so much time exploring?

What is unique about Stephen's headstone?

What do you think Stephen's greatest discovery was? Why? Explore the exhibits in the Visitor Center to learn about more of his discoveries.

Bob Lively



Will Garvin

Stephen Bishop



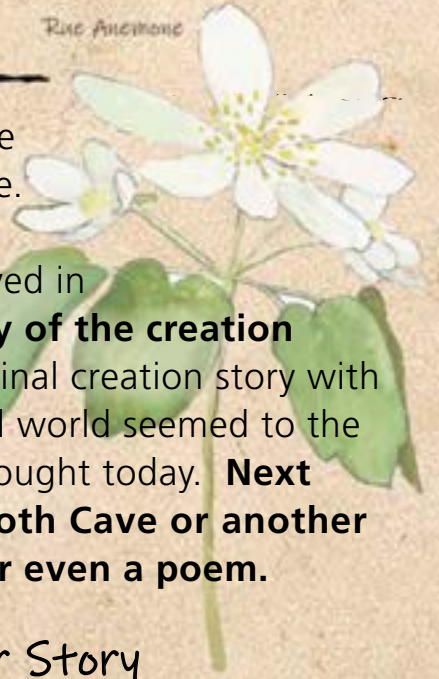
Ed Bishop



Mat Bransford

# Keepers Of The Flame

Rue Anemone



Storytelling is part of all our lives. Since the start of human culture stories have told us who we are and what our place is in the universe. Native American cultures especially value stories as ties to their beginnings. Among the nations of Native Americans who once lived in this area were the Chickasaw. **Below, read the Chickasaw story of the creation of the world.** This story was adapted for this book from the original creation story with the help of the Chickasaw Nation. Try to imagine how the natural world seemed to the first people who lived here, before the science that guides our thought today. **Next to the story, write your own creation story of how Mammoth Cave or another feature of the park came to be. You can make this a story or even a poem.**

## Chickasaw Creation Story

## Your Story

The earth was formed long ago by the creator Aba'Binni'li. The Great Spirit looked into the deep depths of the universe and saw the potential for something beautiful. So Aba'Binni'li got to work making this new home.

First, Aba'Binni'li asked Crawfish to dive down into the depths and bring up mud. So, Crawfish swam down further and further until it at last had reached the bottom. Crawfish brought up mud, but more would be needed. Crawfish swam down again and again stacking the mud into a large pile. Eventually, Crawfish had gathered enough mud to make a large ball which Aba'Binni'li named Mother Earth. Still, more work was needed for this creation to be done.

Next, Aba'Binni'li called on the Great Raven as the wet ball of earth needed to be dried and shaped. So, Raven flew all round Mother Earth flapping its powerful wings. Every time Raven's wings came down, valleys were created and each time they came back-up mountains formed.

Finally, the earth dried, and the animals and people of the world had a place to live.

Aba'Binni'li looked back at Mother Earth and was pleased with this great creation.

# Fossil Hunters

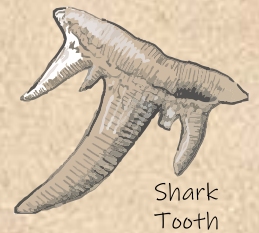
Horn Coral



The rock that makes up Mammoth Cave is called limestone. This rock is made of skeletons from ancient sea creatures like coral or mollusks. In prehistoric time, the remains of these animals collected on top of each other in layer upon layer. Over time, pressure turned the layers into rock. Some animal parts turn into minerals that resemble their original form. We call these minerals **fossils**. These fossils teach us about the plants, animals, and environment of Earth millions of years ago.

One way to copy the texture of an object is to take a rubbing. Fossils, rocks, and tree bark have a lot of texture or feeling to them. Rubbings help copy the look of something without removing it from nature. **Using your Junior Ranger book and pencil, make two rubbings. Make one of a fossil, and one of anything else with texture.** Use the back of this page to line up the circles and make your rubbing.

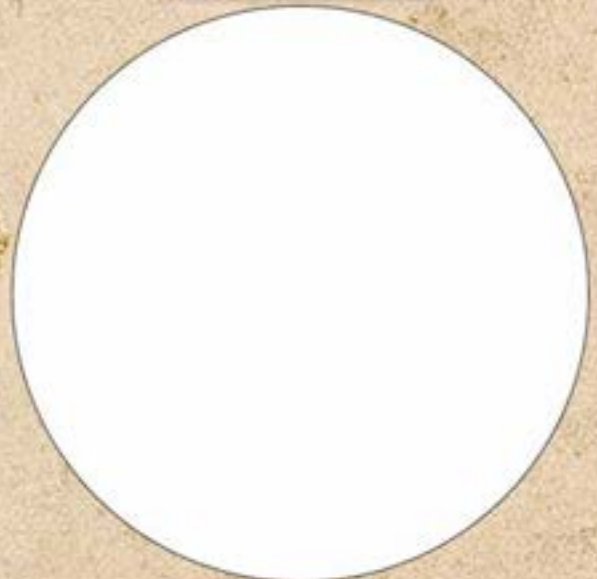
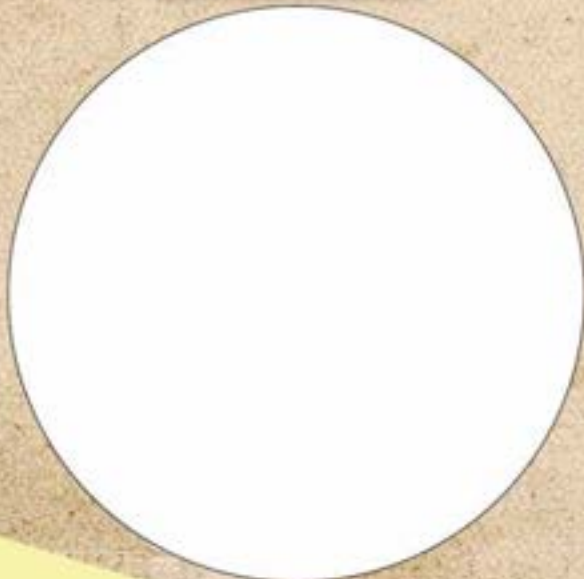
Hint - There are 6 possible fossils to do a rubbing of in the visitor center displays. Use the side of your pencil and softly move back and forth for your art to show up.



Shark Tooth

Fossil Rubbing

Other Rubbing



Check out the Echo River Spring Trail and the displays along the trail for items to do rubbings on.

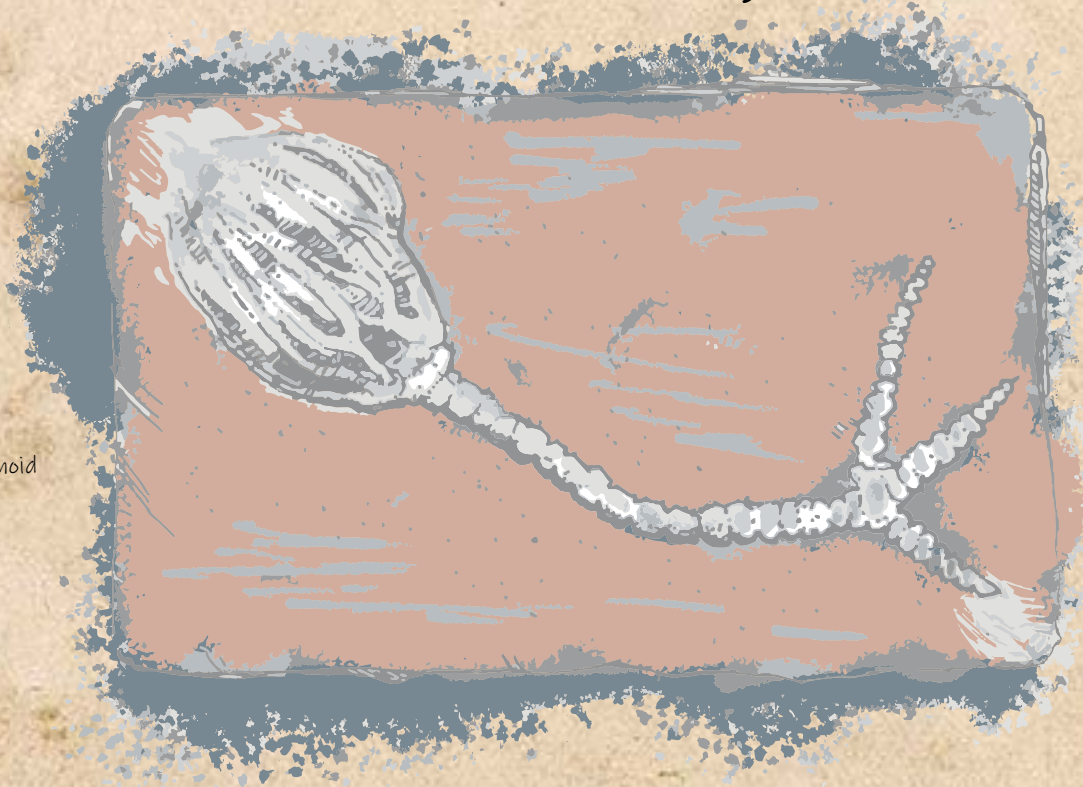


Gastropod

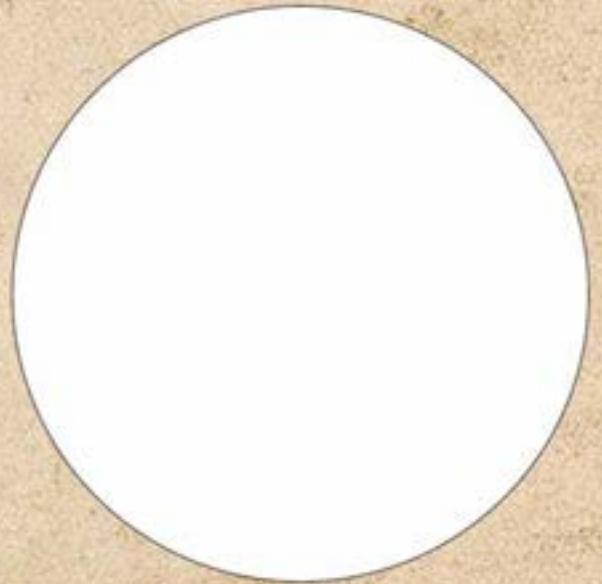
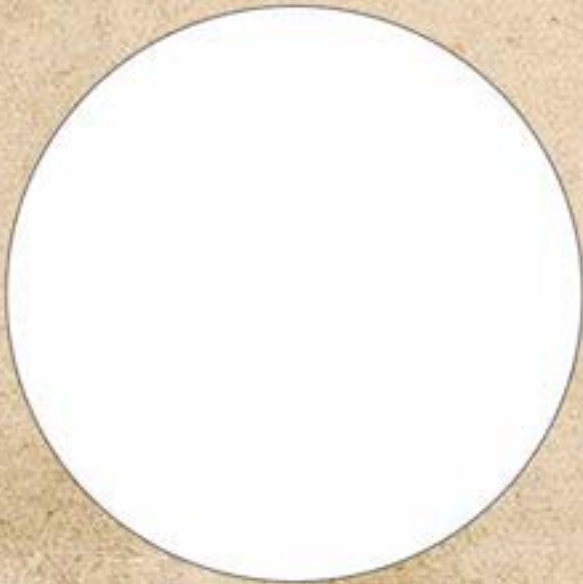


Crinoid

Use this area to line up your rubbing for "Fossil Hunters"



Fossil Crinoid





Mammoth Cave National Park

Certifies that

\_\_\_\_\_ has completed all of the requirements  
to become an official

**JUNIOR RANGER**

I pledge to explore, protect and respect the forest  
and cave below. I will learn about and enjoy  
as many National Parks as I can!

\_\_\_\_\_  
Park Ranger Signature

\_\_\_\_\_  
Date



Little Brown  
Bat



Red  
Trillium



Notes

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