Capulin Volcano National Monument

Junior Ranger

This book belongs to:_____

Discovering Capulin

Welcome to Capulin Volcano National Monument!

Here you can see 60,000 year old rocks spewed from the center of a volcano, search for deer, lizards, and birds, and gaze at the 360˚ view of the surrounding area as you hike the Crater Rim Trail. From top to bottom, opportunities abound to explore Capulin Volcano.

Before you start your Junior Ranger activities, read the Ranger Rules for visiting Capulin Volcano National Monument. These are important for helping to preserve Capulin and protect its natural resources. In doing this, everyone can enjoy the volcano, including future generations.

Ranger Rules:

1. Protect the volcano from erosion by staying on the trails.

2. Help keep wildlife wild by not feeding them or leaving food in their environment.

3. You can pick up rocks to look at them, but remember to put them back before you leave.

4. Make sure to throw away all trash in the trash cans.

5. Please leave wildflowers and plants for others to enjoy.

6. Lastly, remember to protect yourself by wearing sunscreen and drinking plenty of water!

Junior Ranger Guide

People of all ages can become Junior Rangers at national park sites all over the country. Junior Rangers have 3 main jobs:

EXPLORE, LEARN, PROTECT

As a Junior Ranger at Capulin Volcano, your mission will be to explore and learn about the park, as well as help to protect it.

Here's what to do in order to become an official Junior Ranger at Capulin Volcano National Monument:

6 to 10	Complete 4 activities
11 and up	Complete 6 activities

In addition, choose at least one of the activities below:

- ☐ **Flat Hat Chat**
- ☐ **Ranger Program**
- ☐ **Watch the movie**

 easier activities

  harder activities

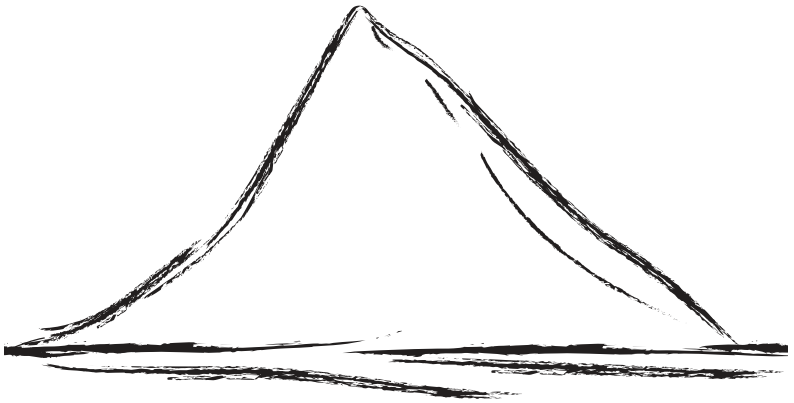
Once you are done, show your book to a Ranger and they will give you your official Junior Ranger badge. Good luck!

Junior Ranger Book produced by the Capulin Volcano Interpretation Division led by Melissa Weih.
Additional artwork by Kelly Ricks. All photos are NPS Photos.

Building a Volcano

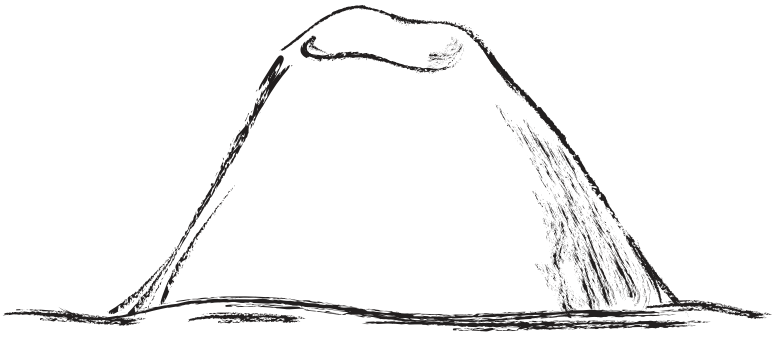
ACTIVITY 1

A volcano is a place on the Earth's crust where magma and gases have escaped from deep below the surface and caused an eruption. There are three main types of volcanoes, each with their own differences. Match each of the descriptions to the correct picture and then think about Capulin. Can you figure out what type of volcano you're visiting?



Cinder Cone
- small with steep sides
- usually only erupts once from one vent
- typically has a crater because lava builds up on the sides

Composite Cone (Stratovolcano)
- tall with steep sides
- multiple explosive eruptions from more than one vent
- can build up to form a peak



Shield Volcano
- can be very large
- gentle slopes
- made up of many lava flows from non-explosive eruptions

Capulin is a _____

You're the Geologist

ACTIVITY 2

A **geologist** is someone who studies the Earth and processes that shape it. Since humans were not around during the eruption of Capulin, geologists use clues, such as rocks, to determine the type of volcano and lava.

As a geologist, it is important to observe and record information about the rocks. Find a rock outside and record your observations about it. Remember to put your rock back before you leave!

Draw your rock.

Is it bigger or smaller than your fist? _____

What color is it? _____

Does it have holes? _____

Is it light or heavy? _____

Then look at the rock display in the visitor's center. What kind of rock do you think you were looking at?

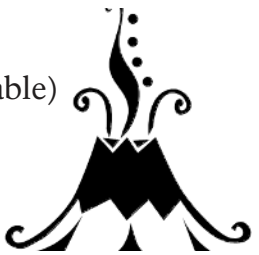
_____

Where do volcanic rocks come from?

Deep inside the earth there is liquid rock called magma. When there is enough pressure and gasses for the magma to rise, it will erupt through a vent, or crack in the Earth's surface. Once it has reached the surface it is called lava. Then when the lava cools, it is known as a rock.

Try it at home: Make your own lava lamp!

Ingredients:
- water bottle
- water
- cooking oil (such as vegetable)
- food coloring
- Alka Seltzer



Instructions:
1. Fill an empty water bottle 1/2 way with water.
2. Drop a few drops of food coloring until the water is the color you want it.
3. Fill the rest with unused oil and leave about an inch of space at the top.
4. Drop half an Alka Seltzer in and watch as the bubbles rise!

Mystery Scramble

Capulin Volcano National Monument is part of an 8,000 square mile volcanic field that covers parts of New Mexico, Colorado, and Oklahoma. This area is unique and has its own vocabulary of scientific words. Use the rhymes to unscramble the mystery words that the rangers use when talking about the field. Then, find them in the word search.

1. This is where the eruption begins,
   creating volcanoes where nothing had been.

   _ _ _ _ **NTEV**

2. When the volcano decided to blow,
   it threw out lava full of holes.

   _ _ _ _ _ _ **ORCASI**

3. The Spanish word meaning "mouth,"
   this is where lava came out.

   _ _ _ _ **COBA**

4. Clouds of this form during an eruption,
   causing many a disruption.

   _ _ _ **HAS**

5. When I erupt, I spew rock and ash like a fountain,
   it rains down all around to form a cone-shaped
   mountain.

   _ _ _ _ _ _ _ _ _ _ _ **NERIDC ECON**

6. This lava rock is extremely tough and hard to fray,
   it takes a long time to wear away.

   _ _ _ _ _ _ **ASLTBA**

7. Underground I bide my time,
   in an eruption I break through to cover the
   countryside.

   _ _ _ _ _ _ _ _ _ **MGAAM & VAAL**

8. The volcano scattered these wide and far,
   some as small as your fist; others the size of a car.

   _ _ _ _ _ **OSMBB**

9. I am the largest feature in the volcanic field,
   my shape reminds some of an upside-down shield.

   _ _ _ _ _ _ _ _ _ _ _ _ _ _ **REISAR RNADEG**

10. A mixture of boiling rocky mush,
    from beneath the ground did gush.

    _ _ _ _ _ _ _ _ _ **EPURTOIN**

11. Volcanoes erupt from a gaping hole,
    the depression left behind is shaped like a bowl.

    _ _ _ _ _ _ **RCERAT**

12. From the planet's crust did seep,
    ash, gas, and lava to form a mountainous heap.

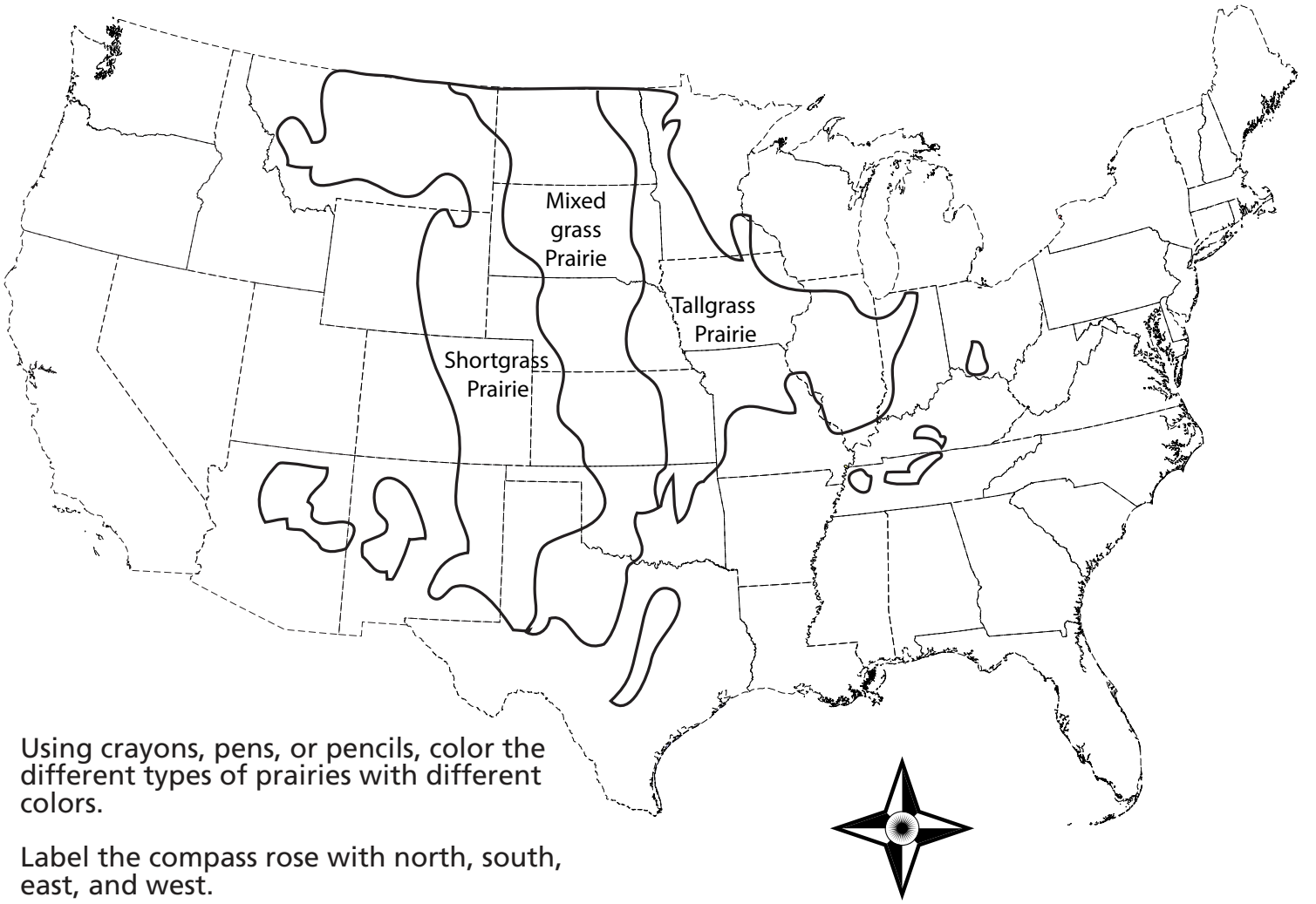
    _ _ _ _ _ _ _ _ **OLVANCO**

S	C	E	S	C	O	R	I	A	A	N
B	A	B	I	S	L	A	L	O	T	M
M	P	U	E	T	E	E	U	Q	S	O
O	U	E	R	A	L	R	O	C	S	N
B	L	L	R	F	H	A	G	H	O	A
A	I	S	A	U	S	I	S	U	A	C
E	N	C	G	V	P	A	S	A	L	L
A	O	R	R	V	A	T	R	I	B	O
B	C	R	A	T	E	R	I	F	S	V
U	C	I	N	D	E	R	C	O	N	E
A	I	E	D	D	M	R	A	R	N	U
U	V	C	E	A	M	G	A	M	O	T

Prairie Geography

ACTIVITY 4

Grasslands, such as the Great Plains, once covered much of central North America. A grassland is a region where grass is the main type of vegetation. In North America, grasslands are called "prairies." Three different prairies make up the Great Plains: tallgrass, mixed grass, and short grass. Short grass prairie is found here at Capulin Volcano. These grasses are shorter because they receive much less rain than the tallgrass prairie found in the eastern portion of the Great Plains. Today, the prairie is disappearing. Less than 4% of the tallgrass prairie and 20% of the shortgrass and mixed grass prairies remain.



1. Using crayons, pens, or pencils, color the different types of prairies with different colors.
2. Label the compass rose with north, south, east, and west.
3. Which type of prairie is found at Capulin Volcano?

_____

4. Which states contain all three types of prairie?

_____

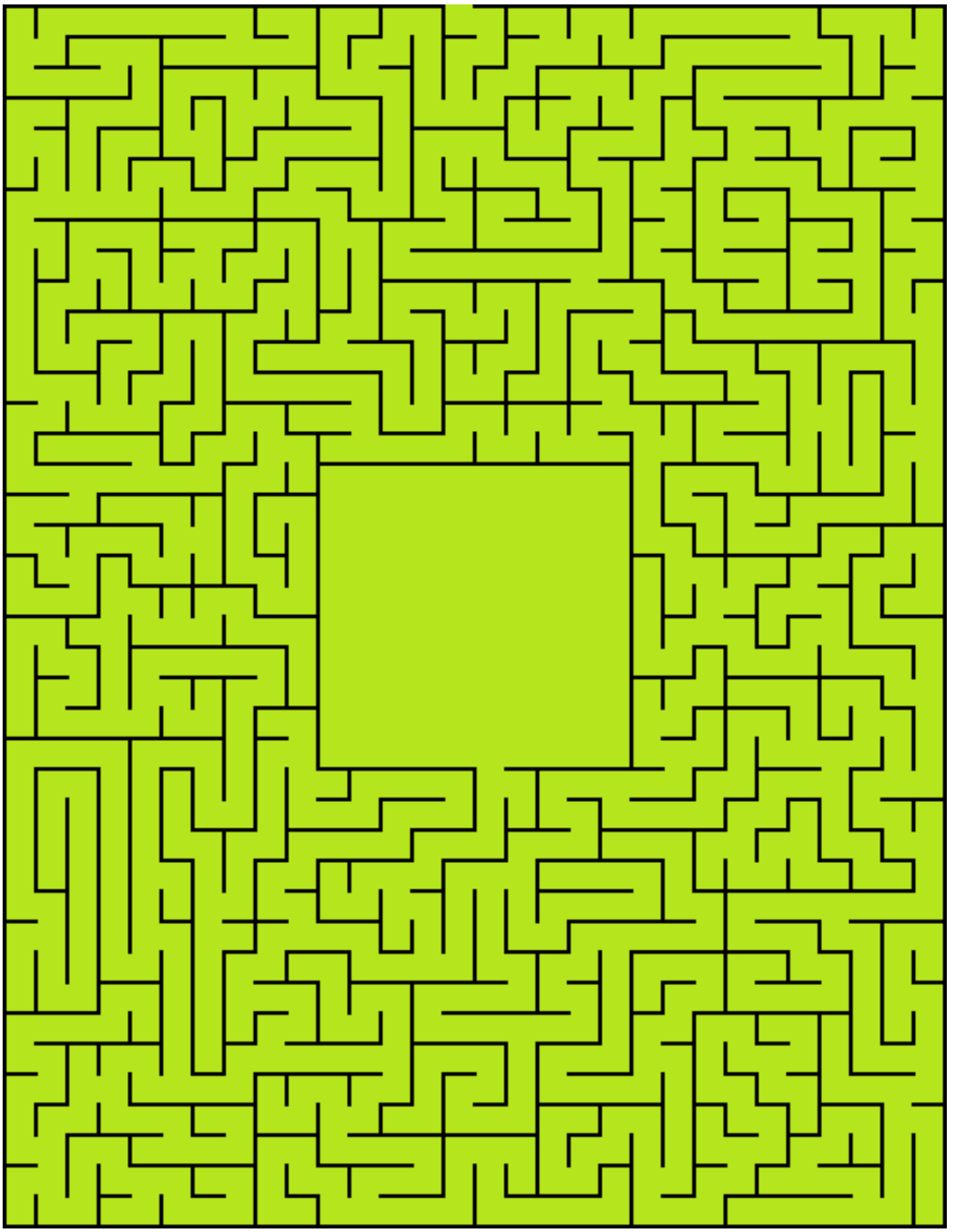
Brain-Teaser:
How many states have grassland?

_____

Flight of Fancy

ACTIVITY 5

What is three inches tall, can fly in every direction and hover in mid-air? It's not an insect. The answer is a hummingbird. While they may not be very big, these mighty fliers are known for their ability to beat their wings nearly 3,000 times per minute. Add that to being able to fly backwards and upside down, and these tiny creatures are amazing!



Hummingbirds are an important species in an ecosystem as they are **pollinators**.

When hummingbirds drink nectar from flowers, pollen is transferred from the flower to the bird's body. Moving pollen from one flower to another helps plants make seeds. Help this bird find their way to the flowers by following the maze.

Hummingbirds prefer brightly colored flowers, especially reds and purples. Circle the flowers that would attract the hummingbird the most.

Bonus:
What are other pollinators besides hummingbirds?

_____

_____

Passing Time

ACTIVITY 6

Capulin Volcano erupted a long time ago compared to human existence, but a relatively short time ago on the geological time scale. Answer the questions below to learn about a few of the historical events that took place around Capulin Volcano. Put your answers in the boxes to spell out the name of the first park ranger stationed at Capulin.

1. In 1866, Charles _____ and Oliver Loving partnered together to establish a cattle trail from Belknap, Texas, to Cheyenne, Wyoming, in search of a market for their cattle. The _____-Loving Trail passed through the Raton-Clayton Volcanic Field, along the eastern side of Capulin Volcano, and north toward Colorado.

2. Eastern settlers who moved westward to the frontier had much to learn in order to survive. The newcomers learned and adopted Spanish practices of horsemanship, roping, herding, and ranching, giving rise to an American icon—the _____.

3. President Woodrow Wilson established Capulin Mountain National _____ on August 9, 1916 to preserve "a striking example of a recent extinct volcano." In 1987, the name of the park was changed to Capulin Volcano National _____.

4. September 1821, just one month after the fall of the Spanish Empire William Becknell of Missouri blazed the _____Trail which would be followed by countless others in search of profit.

5. A mix between wild Mexican cattle and eastern cows, the Texas _____was known for its long horns and gentle nature.

6. Ancient bison bones and Paleoindian spear points were found 9 miles from Capulin Volcano at the _____ Man Archeological Site.

7. Capulin Volcano and the surrounding area were once part of the vast _____ Empire.

8. A branch of the Santa Fe Trail known as the Granada- _____ Trail passed along the south side of Capulin Volcano.

9. Plains Indians historically lived and hunted in the High Plains of New Mexico. Big game species such as bison, antelope, and mule deer were plentiful, drawing groups such as the Comanche, Ute, and _____Apache.

Capulin's Custodians

ACTIVITY 7

When Capulin Volcano became a national monument, it was given a custodian. A **custodian** is someone who takes care of something and makes sure it is protected and treated well. Today these people are known as superintendents. Capulin's first custodians were Jessie Foote Jack and Homer Farr. Because of them, everyone can enjoy Capulin the way it is. Read the story below to learn more and answer the questions.

Jessie Foote Jack and her husband were ranchers in New Mexico in the early 1900's. At the time, Capulin Volcano was thought of as great land for grazing cattle. Because of this, Mrs. Jack made a request to the governor to be the custodian of Capulin. She officially received the position in 1916, and was the first woman custodian in the National Park Service. She served until 1921 and had various jobs related to the protection and management of the volcano. Some of the things she did included:

- **Patrolling** the monument
- **Preventing** people from taking wood for fires
- **Putting** up signs for the volcano around area roads
- **Recommending** a road up to the crater rim, as well as paved roads from Folsom to Capulin

Homer Farr then became the custodian in 1923, and he built the road to the crater. He also bought land south of the volcano and expanded the town of Capulin.

Jessie Foote Jack

Now that you know more about what the custodians of Capulin have done, why were they important for you to be able to visit Capulin today?

Is there a geologic or historic feature near your home, or somewhere you've been, where you would want to be the custodian? How would you help protect it if you were?

Place: _____

Homer Farr

Flat Hat Chat

ACTIVITY 8

Every day, park rangers all over the nation work hard to protect national parks and help visitors. They do things such as: study plants and animals, answer questions, give tours, collect fees at entrance stations, care for buildings and roads, patrol the trails, or work at park headquarters. Each of these jobs help to fulfill the National Park Service mission. During your visit, interview one of the Capulin Volcano Park Rangers to find out what they do.

Here are a few questions to get you started.

1. What is your name? _____

2. What is your job? _____

3. What do you like best about Capulin Volcano? _____

Now it's your turn to create the questions! What would you like to know about park rangers? Add two questions to those above.

1. _____

2. _____

Searching the Field

ACTIVITY 9

Did you know that Capulin is not the only volcano in the area? You are actually in the middle of a volcanic field. That means that you are surrounded by volcanoes and lava flows. This 8,000 square mile field is called the Raton-Clayton Volcanic Field and is about the size of Massachusetts! It's so big it covers parts of Oklahoma, New Mexico, and Colorado.

An advantage to being on top of a volcano is the elevation. **Elevation** is the height of a place above sea level. When you stand at a higher elevation than the surrounding land you can see more things that are farther away. Look at the interpretive signs around the rim parking lot to help you find and name the things listed below.

Elevation at the rim parking lot _____

Two other volcanoes _____

_____

Two mesas _____

_____

Southern part of the Rocky Mountains _____

Can you see anything else? _____

Math Attack!

The elevation at the town of Capulin is 6,844 ft. How high above the town are you? _____

Vegetation Returns

ACTIVITY 10

Today, Capulin is home to many different plants and animals. However, when it first erupted, this was probably not the case. It takes time after a volcano erupts for plants and animals to make it their home.

Can you think of two ways seeds could find their way to Capulin and start producing more plants?

1. _____

2. _____

Go outside to look for different plants and draw them in the boxes:

Find a tree that is taller than you.

Find a plant that has spikes on it.

Find a wildflower.

Find a plant that grows on rocks.

Creatures of Capulin

ACTIVITY 11

An **ecosystem** is a place where different plants and animals live together. It also includes the things they interact with, like soil, air, and the sun. If you keep your eyes and ears open you can find many different types of animals living on the volcano in Capulin's ecosystem. Check off what you can see and/or hear from the list below and if you find something not on the list, draw it in!

☐ see ☐ hear

bird

☐ see ☐ hear

deer

☐ see ☐ hear

butterfly

☐ see ☐ hear

insect

☐ see ☐ hear

lizard

☐ see ☐ hear

ladybug

☐ see ☐ hear

turkey

☐ see ☐ hear

bear

☐ see ☐ hear

_____

WATCH OUT!

Here at Capulin, there are a few bears. While they are cool to see from a distance, it is important not to get too close. If you see one that's too close remain calm and back away. Remember, never feed or provoke them and be cautious!

Patterns in the Sky

ACTIVITY 12

Being in a remote, rural area far from any cities means that the effects of light pollution on the night sky are limited at Capulin Volcano. When the sky is clear, hundreds of thousands of stars can be seen here at night. Constellations are patterns that can be seen in these stars that often represent different animals or stories from different cultures. Connect the stars below to make a common constellation seen in the summer skies at Capulin Volcano.

In the center of this constellation of Ursa Major, there is a smaller but more easily picked out **asterism** commonly known in the United States as the Big Dipper. Outline this asterism in red. Asterisms are patterns in the stars that typically have common names but are smaller than constellations. Though there are only 88 official constellations, there are many more asterisms. Though many constellation names come from ancient Middle Eastern, Greek, and Roman cultures, other Native American, Asian, and African cultures also named these patterns in the night sky. What is another name for the constellation Ursa Major?

Junior Ranger Pledge

As a Junior Ranger at Capulin, I promise to discover all I can. I pledge to protect and preserve every rock, plant, and bird. National Parks are tons of fun because they're here for everyone.

Capulin Volcano Stamp

Junior Ranger Stamp

This certifies that

---

is an official Capulin Volcano Junior Ranger

Thank you for visiting! And remember:
EXPLORE, LEARN, PROTECT!

Not enough time?
Mail completed books to:

Capulin Volcano National Monument
P.O. Box 40
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