Catoctin Mountain

National Park Service
U.S. Department of the Interior

Catoctin Mountain Park

Junior Ranger Program:

Ages 9-11

To join the family of people who know and care about Catoctin Mountain Park, complete this activity booklet and become a Junior Ranger!

Name:_____ Age:_____

City & State:_____

Date:_____Weather:_____

Ancient Times

Millions of years ago volcanoes were active from Virginia to Pennsylvania, oozing out molten rock, called lava. About 250 million years ago, the Appalachian Mountain range was formed, including the Catoctin Mountains. In some places, the ancient lava flow was more than 2,000 feet thick (that's almost half a mile!). Today, the highest point you can hike in Catoctin Mountain Park is Hog Rock at 1,610 feet. The younger Colorado Rocky Mountains were formed only 60 million years ago and are about seven times as high as the Catoctin Mountains.

Why are the Rocky Mountains higher than the Catoctin Mountains? _____

_____

_____

Fill in the blanks below with the following three types of rock:

Metamorphic **Igneous** **Sedimentary**

_ _ _ _ _ _ _ _ rocks are made by cooling and hardening of molten rock. Examples are basalt and rhyolite.

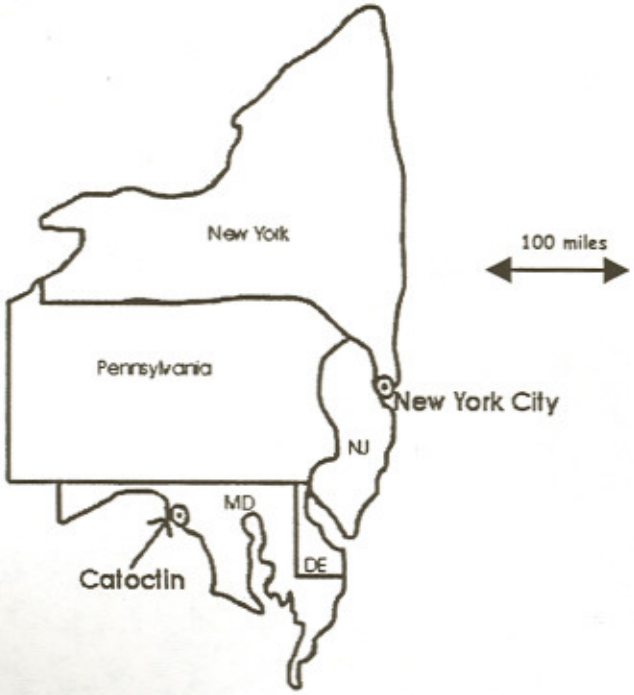
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ rocks are made from compacting and cementing sediments such as gravel, sand, silt, or clay. Examples are sandstone and limestone.

_ _ _ _ _ _ _ _ _ _ _ _ _ _ rocks are made when igneous or sedimentary rocks are put under high heat and pressure, usually deep in the earth. Examples of changed igneous rock are Hog Rock and Cunningham Falls. Wolf Rock and Chimney Rock are examples of changed sedimentary rocks.

Native American Indians

Rhyolite, an igneous rock, is found at Catoctin Mountain Park. Early American Indians quarried the stone to make their tools. Archeologists have determined that rhyolite was very valuable as they found many tools that were re-sharpened many, many times. They also discovered rhyolite from this mountain as far away as coastal Virginia and New York!

Look at the map below and see how far the Indians traveled for rhyolite:



How many miles is it from New York City to Catoctin Mountain?_____

A person can walk two miles per hour. How many hours did it take a traveler to walk from New York to Catoctin Mountains? _____

Why do you think rhyolite was so important?

_____

_____

Early Settlers

Early settlers also used the natural resources of the mountain to make their homes and to earn a living. In the museum, you can see samples of a rock that early settlers used to make their tools. _____ _____ was melted in the Catoctin Iron Furnace to make iron.

Draw a line between the job of an early settler and the natural resource found on the mountain that they used.

Sawyer	**Iron Ore**
Blacksmith	**Corn**
Farmer	**Trees**
Collier (Charcoal maker)	**Soil**
Iron Furnace worker	**Trees**
Distiller	**Iron**

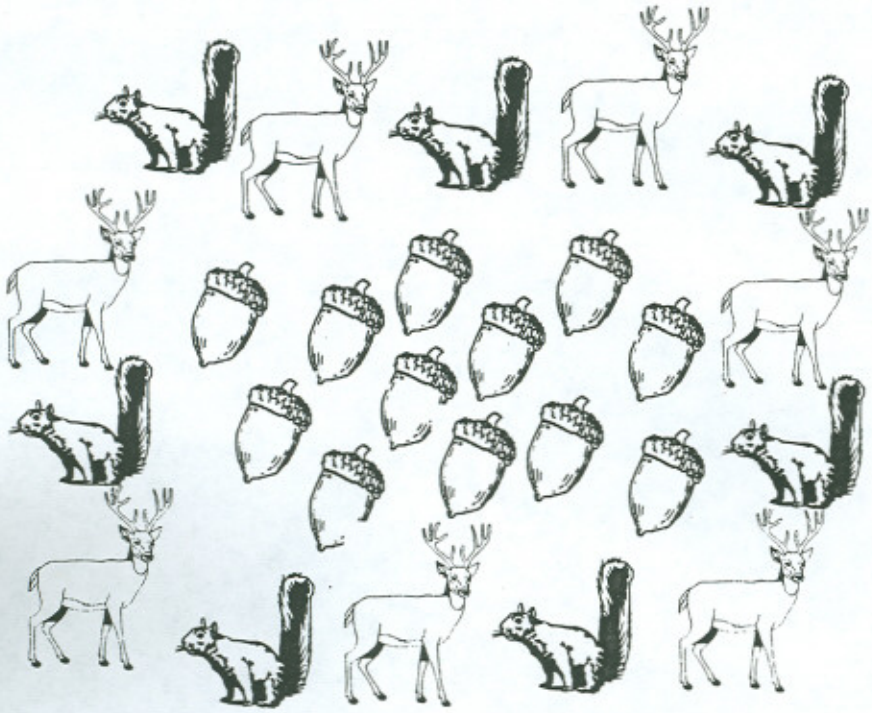
Now take a moment to look at the display of animals found in this forest. Read the clues below and list the animal from the display that matches (some answers have more than one match):

1. This animal's print looks like a hand: _____
2. This animal smells with its tongue: _____
3. This animal uses echolocation to find insects: _____
4. This animal sheds its antlers every year: _____
5. This animal migrates south for the winter: _____

Hungry for Habitat

The animals that live in the forest are considered natural resources just like the trees, water, soil, and rocks. The place where an animal can find food, water, and shelter close together is called a habitat. To live, each animal makes a home (or shelter) where it can find all of these things. Sometimes when animals live in the same habitat they eat the same food.

Play the game below to see how food affects deer and squirrels. Flip a coin and draw a line from the animal to the acorn. (Heads= squirrel gets 1 acorn, Tails= deer gets 2 acorns.)



What is the limited habitat? _____

How would an increase in the number of deer affect the habitat in the park?_____

Always remember...

Outdoor Safety!

Read the story that reminds you how to be safe in the park. Then, find the underlined words that are hidden in the word search. Look across, down, and diagonally.

As Tanya began to prepare for her hike, she put on her boots, hat, and sunscreen. She packed tick repellent, water, and a whistle. She was careful at her camp to put out the fire and secure the food from wildlife. Tanya and her hiking buddy picked up a trail map at the Visitor Center and asked the Park Ranger about the weather. The Park Ranger reminded Tanya to stay on the trails to avoid poison ivy and the occasional rattlesnake. Remember, prevention is the best way to have fun!

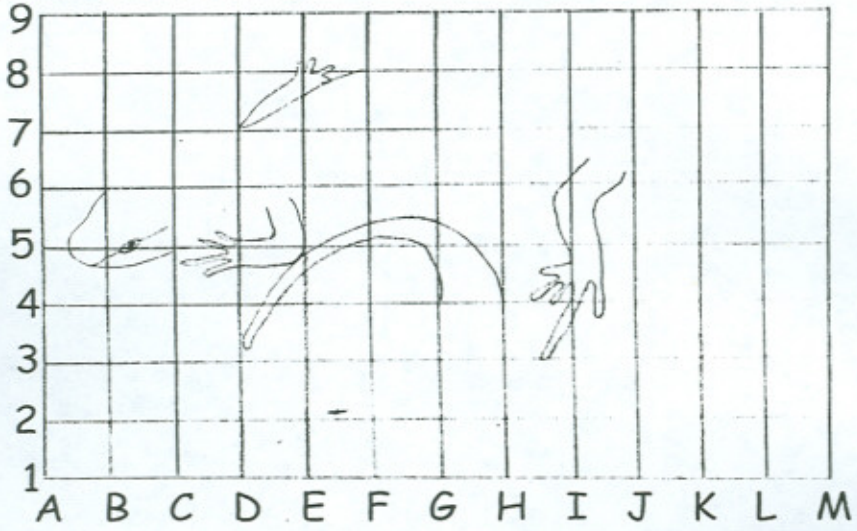
F J T W C L S X H E A P D J W P B P
W A R I Q E G D S X C O P H A R O R
R H A T C F N I W P I I Q W T E O E
O R I E G K G D I O L S P E E P T V
Y A L S S W S M L S P O F L R A S E
R T M N T H K O D U N N D I Z R D N
H T A M E L F P L R Z I F H R E J T
Z L P S I F E S I E D V I J A E B I
F E D E K W N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

Reptiles and Amphibians

Reptiles and amphibians are in trouble.[B6] Their habitats are disappearing so their populations are getting smaller.[D7] This is not the only problem. [F8] Turtle soup,[H8] frog legs,[K7] and rattlesnake steaks [L5] are becoming popular[L3] gourmet foods.[J1] Keeping reptiles and amphibians as pets [H2] has led people to illegally collect them from the wild.[G4] You can help protect these animals.[H4] Enjoy and watch wildlife in the wild. Some animals do not do well as pets[I2]. Learn [J2] about these animals to understand [K4] and not fear them.[K5] To get you started,[J6] here are a few characteristics [H6] of reptiles [E6] and amphibians[C5]:

Reptiles: Have claws, dry scaly skin, and lay shelled eggs on land.
Amphibians: Have no claws, moist smooth skin and lay soft, shell-less eggs in water.

Imbedded above are points for the graph below. Draw a line beginning at [B6] in the order they are listed to complete the animal in the puzzle. (Find B on the bottom row and follow that line up to where it intersects with 6.)



It is smooth and shiny, has scales, and lays eggs on land. Is it a reptile or amphibian? _____

Remember all animals are protected in the park. If you see a five-lined skink, don't pick it up as it's tail breaks off easily for self defense and they bite! (They are also really fast!)

Invasive Species

When plants or animals becomes very abundant in an area and threaten the existence of other plants or animals they are called **invasive species**. Most invasive species have been brought to North America from other continents. However, invasive species can also be native to the area.

Invasive species compete for food, water, space, sunlight, and nutrients. They may prey on other animals or native plants including trees. They can also change the habitat by altering the types of plants and animals found in an area.

Invasive species in the park are both native and non-native or alien. American Chestnut trees, once common, are now almost gone due to a fungus accidentally brought here from Asia in 1904. Gypsy moth caterpillars kill many hardwood trees when they eat their leaves. Hemlock trees, found along streams, are infested with the Hemlock Woolly Adelgid, a small insect that is sucking the life out of the trees. Japanese Stilt Grass is carpeting the forest floor. White-tailed deer are native to the park but have become successful due to great habitat and lack of predators. They are eating many plant and tree seedlings before they grow.

Controlling invasive species is often done with chemicals, biological controls, or by physical means (digging or cutting).

Chemical Control: Hemlock trees are infested with Woolly Adelgids. Without these trees shading the stream, water temperature may become too warm for native trout. If the park sprayed chemicals on the trees to kill the Woolly Adelgid, what might happen? _____

Biological Control: If the park introduced a non-native beetle that is a predator and eats Woolly Adelgids, what concerns might we have? _____

What might happen if we do nothing? _____

_____

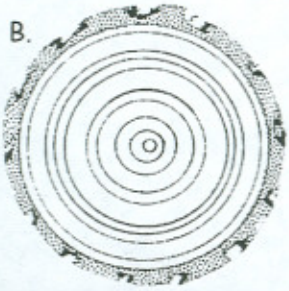
Tree Detective

Tree stumps can tell us many things. By counting the number of rings, you can tell the age of a tree. Tree stumps can also tell us the events that occurred during its life. Look below and match the tree stump with the event that caused its rings to change:

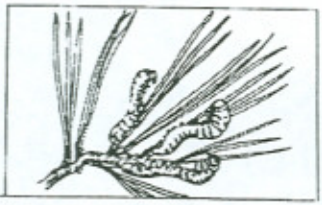
A.

. *Drought* _____

B.



ısect attack _____



C.

_____

Growing on slope

Forest Detective

After a long time, people used up the natural resources of this forest. Many trees were cut down to make charcoal, lumber for houses and furniture, and tree bark was used to tan leather. With the help of several groups, the forest you see today is much like it was before the settlers arrived in 1732, more than 270 years ago.

The last step in completing your Junior Ranger application is to take a short hike on one of the trails below:

NAME	TRAILHEAD	LENGTH
Whiskey Still Trail	Visitor Center	1/2 mile
Charcoal Trail	Thurmont Vista Parking	1/2 mile
Spicebush Nature Trail	Chestnut Picnic Area	1/4 mile
Brown's Farm Trail	Owens Creek Picnic Area	1/2 mile
Hog Rock Nature Trail	Hog Rock Parking	1/2 mile
Deerfield Nature Trail	Owens Creek Campground	1.5 miles

Use your detective skills to find clues or evidence of the people who used to live here and the animals that live here now. Circle the items you find along the way:

chewed leaf or acorn	insect sounds	bird nest
snake skin	stone fence	chimney
whiskey still	charcoal hearth	well
woodpecker holes	birds singing	cellar pit
house foundation	footbridge	wood sled

Junior Ranger Pledge

I, _____
(your name)

have completed all the requirements to become an official Catoctin Mountain Park Junior Ranger. I promise to protect all natural and historical objects found in parks and to help the environment by doing the following ten things whenever I can:

1. Recycle at home and talk to your teacher about recycling in your classroom.
2. Always put trash in its place and pick up one piece of litter everyday.
3. Save water (for example: turn off water when brushing your teeth, this can save nine gallons of water and take shorter showers).
4. Use reusable containers in your lunchbox and at home.
5. Turn off lights, televisions, and radios when not in use.
6. Plant a tree or native plant in your garden.
7. Give outgrown toys and clothes to someone who can use them.
8. Ride a bike or walk when you can.
9. Cut six-pack soda plastic rings,
10. Volunteer with a group to clean up your school, parks, and natural areas.

CATOCTIN MOUNTAIN PARK

08/2003