



Bandelier National Monument



Junior Ranger Challenge Booklet



4th to 6th Grade

Name: _____





Map & Directions



Don't forget to bring drinking water and snacks along to keep those junior rangers full of energy for their challenge!

Some of the activities in this booklet have to be done in particular places. Look on the map for the location of the next activity you are doing.

#s refer to marked stops on the trail

locations with shady benches are shown in gray

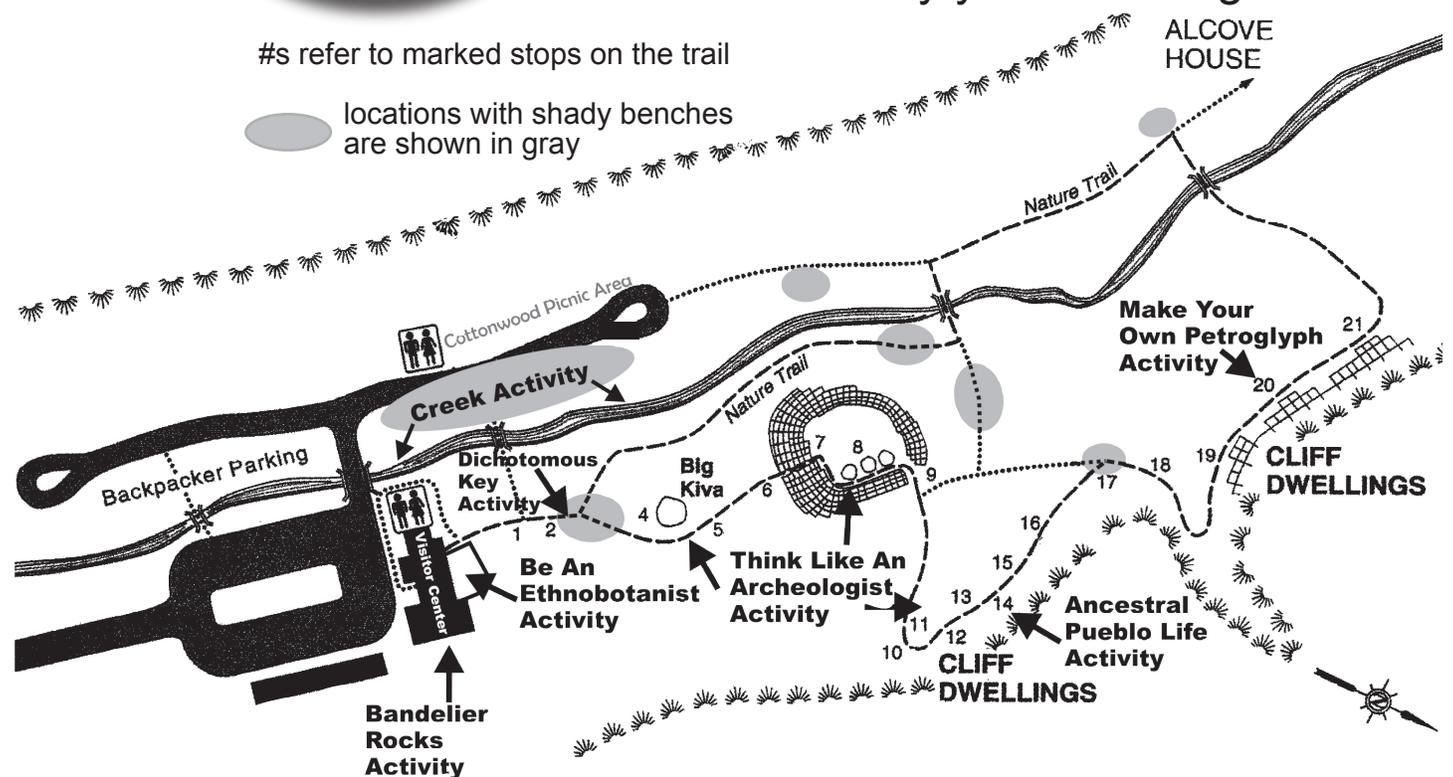
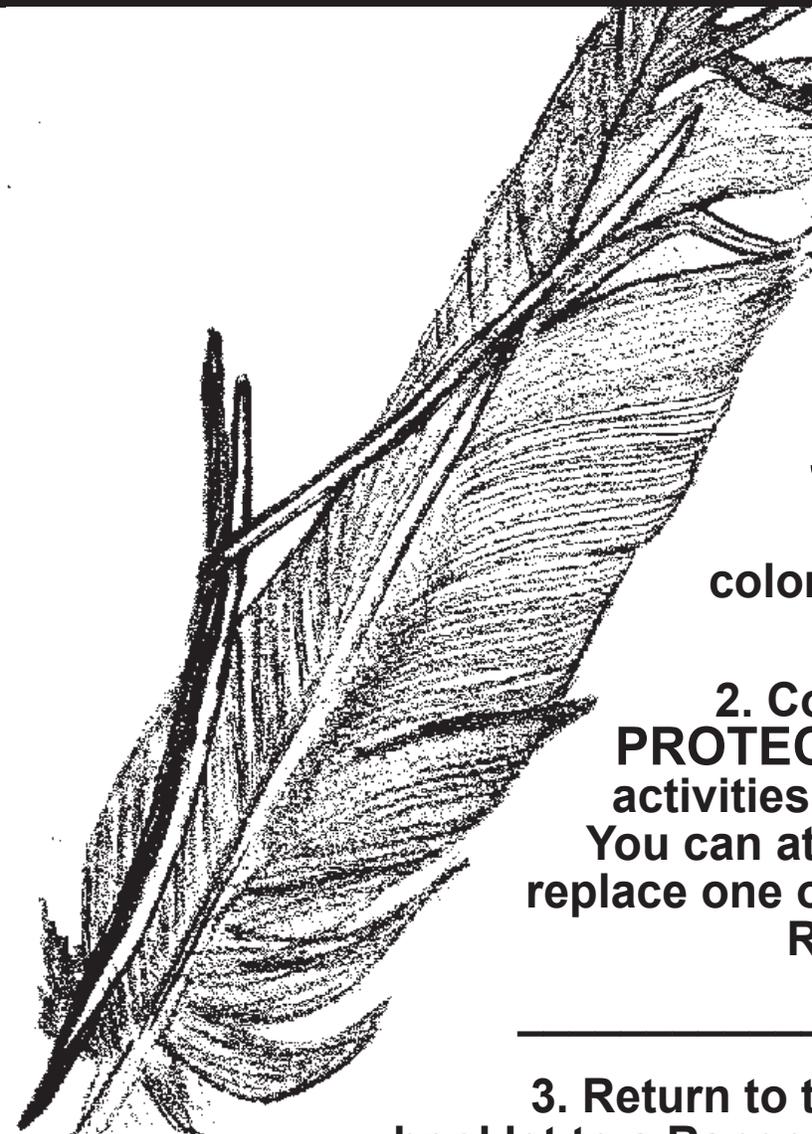


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HOW TO BECOME A Bandelier Junior Ranger:

1. Pick up a pencil, colored pencils, and a clipboard in the visitor center.

2. Complete the **RESPECT AND PROTECT** activity, plus 5 more of these activities during your visit to Bandelier. You can attend a Ranger-led program to replace one of your activities. Just have the Ranger sign here:

3. Return to the visitor center and give this booklet to a Ranger to complete your challenge.

Make sure to bring the following items on your exploration:

water, snacks, sunscreen, weather appropriate clothing, and shoes you can wear in the water (if you are going to do the creek activity, we suggest saving it for last). **Please refer to the map and find the shady places on the trail to complete your activities.**

DON'T FORGET:
water, sunscreen, weather
appropriate clothing and
SNACKS!!!





Why do we Protect and Respect?

In this activity, you are going to answer that question. Draw or describe the effects these changes would have on Bandelier.

Help us stay healthy. Please do not feed us!

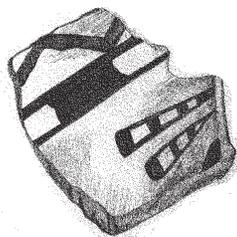


If each park visitor fed a squirrel . . .

X 300,000 visitors

. . . what would happen?

If each park visitor collected rocks or pottery sherds . . .



X 300,000 visitors

. . . what would happen?

If each park visitor walked off the path . . .



X 300,000 visitors

. . . what would happen?

If each park visitor wrote on a wall . . .



X 300,000 visitors

. . . what would happen?



Bandelier Rocks!

For this exercise, go to the visitor center desk. Ask for the 4 numbered igneous rocks kept behind the desk. Your job is to identify them.

STEP 1: Read the descriptions of these rocks and how the Ancestral Pueblo people used them.

Basalt: a very hard, dull, dense, black volcanic rock that forms when lava oozes to the surface and cools. Basalt underlies the tuff cliffs. The Ancestral Pueblo people made axe heads and grinding stones from it.

Pumice: Pumice is a very light, porous rock that is formed from gas-filled magma during some volcanic eruptions. Because it is porous, it absorbs and holds water. It was used in agriculture.

Obsidian: Obsidian is a dark glassy rock that forms when volcanic lava cools rapidly when in contact with air or water. It can be chipped to create sharp edges. It was very important for hunting and cutting tools.

Tuff: Tuff is a soft, pinkish tan rock which forms from volcanic ash flows. The cliffs you see throughout Frijoles Canyon are tuff. Because it is so soft and could be shaped with hand tools, it was carved into to create cavate houses and made into blocks for other homes.

STEP 2: Observe these rocks with your eyes and hands and record observations in this chart. Using the information above, make an educated guess about which type of rock each mystery rock is, and write your answer in the far right column of the graph.

Rock #	Appearance	Weight	Texture	Color	This rock is:
	:SHINY OR DULL:	LIGHT or HEAVY :	SMOOTH or ROUGH :		:
	:SHINY OR DULL:	LIGHT or HEAVY :	SMOOTH or ROUGH :		:
	:SHINY OR DULL:	LIGHT or HEAVY :	SMOOTH or ROUGH :		:
	:SHINY OR DULL:	LIGHT or HEAVY :	SMOOTH or ROUGH :		:



Be an Ethnobotanist

An **ethnobotanist** is someone who studies the relationship between plants and people, including the many ways that people use plants. In this activity, you are going to be an ethnobotanist.

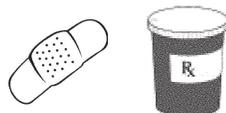
Go to the native plant garden behind the visitor center for this activity. Each plant in the garden has its own sign with symbols on it representing the plant's uses. Draw a leaf or flower from a plant that is used for each of the following purposes. If leaves and flowers are out of season, ask for a field guide in the visitor center.

a plant used to make a hunting bow . . .



PLANT NAME: _____

a plant used to make medicine . . .



PLANT NAME: _____

a plant used to make soap & sandals . . .



PLANT NAME: _____

a plant used for food . . .



PLANT NAME: _____

6 Knowledge about plants was critical to the Ancestral Pueblo People. They had to know when and where to find these plants and how to use them. They also had to know what plants to avoid, like datura, which is poisonous....DO NOT TOUCH THAT PLANT!





Dichotomous Key

Step out of the garden and start up the trail for this activity. Locate 3 evergreen trees. Use this key to identify them, & put a check next to each one you find.

Is this tree is an Evergreen?

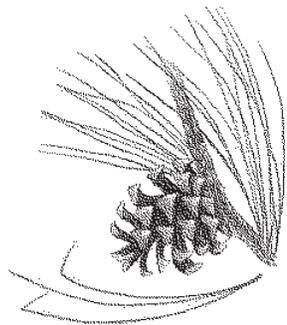
Yes

No

Does this tree have cones and needles?

Yes

No



Is this tree tall and straight with long needles?

Yes

No

Does this tree have scale-like leaves, shaggy bark, and blue berries (only on the female plants) ?

Yes

No

This tree is a Ponderosa Pine

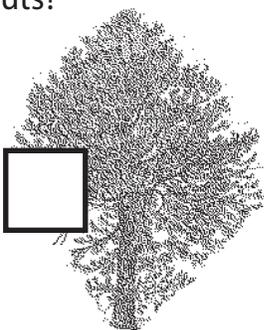
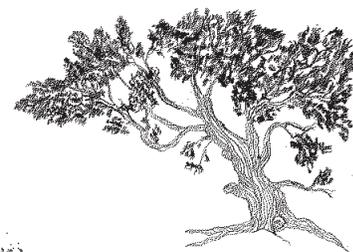
This tree is a Juniper



Is this tree short and bushy with short needles, and does it grow cones and sometimes small nuts?

Yes

This tree is a Piñon Pine





Think Like an Archeologist

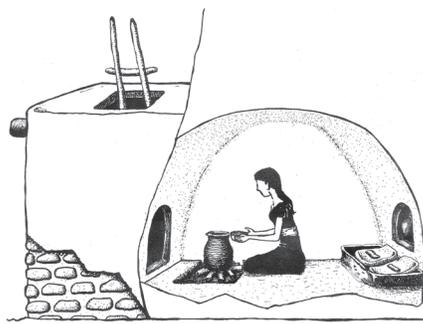
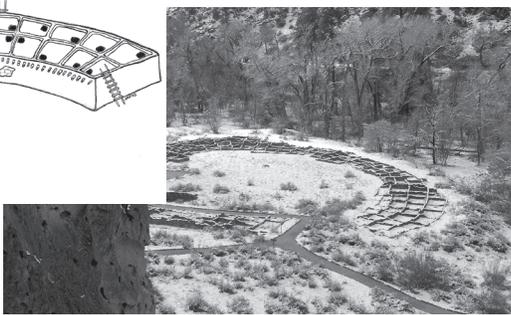
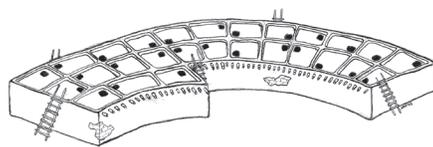
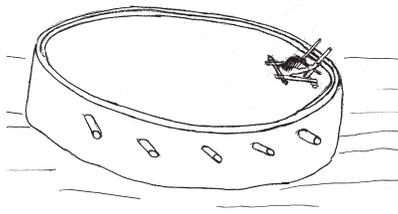
As you see the structures along the main loop trail, be very observant. If your group has a trail guide, read it to learn more about these structures in Ancestral Pueblo times. Now think like an archeologist. What questions would you ask about each of the structures? Write 2 questions about each.

Stop #'s are marked on posts next to the trail.



BEFORE

NOW



QUESTIONS

STOP #4: Big Kiva

- 1) _____
- _____
- _____
- 2) _____
- _____
- _____

STOP #7: Tyuonyi

- 1) _____
- _____
- _____
- 2) _____
- _____
- _____

STOP #11: Cavates

- 1) _____
- _____
- _____
- 2) _____
- _____
- _____

How would you get answers to your questions? _____

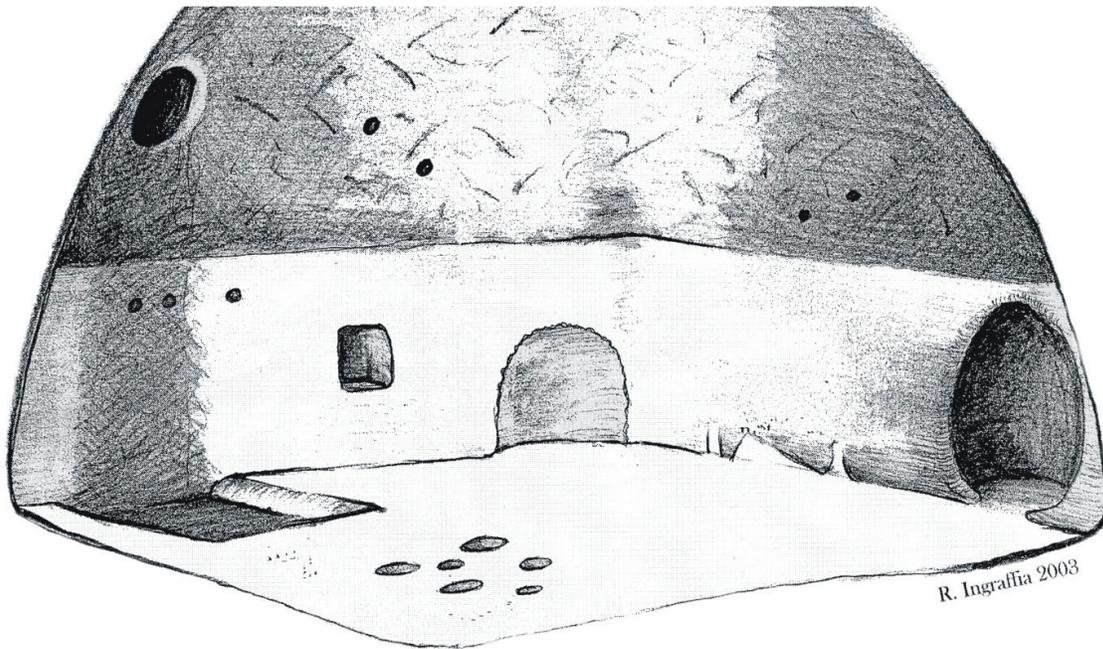


Ancestral Pueblo Life

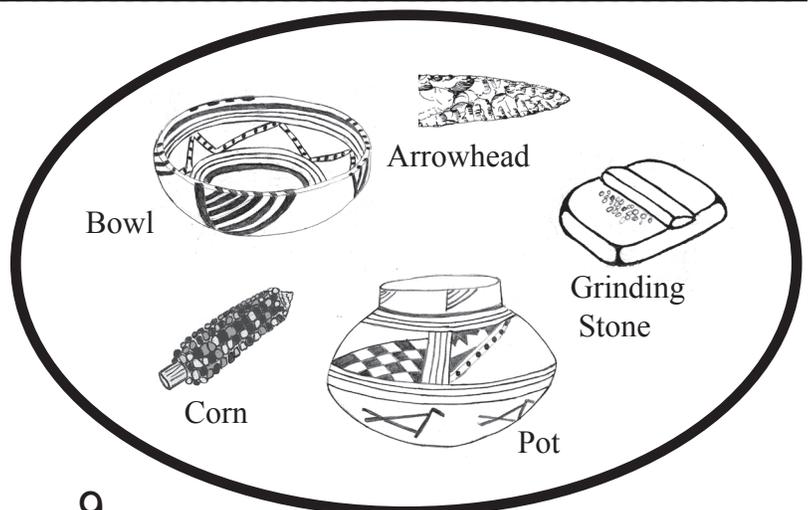
At stop #14, climb the ladder into the cave. Once inside, sit to the side and notice everything around you. Where would you do the following activities if this were your living space and you lived here 600 years ago?

Write or draw your answers on the picture below.

BUILD a fire, SLEEP, STORE food in jars



Objects like the ones below hold many answers about Ancestral Pueblo Life. What do they tell you? _____





Make Your Own Petroglyphs

On this page, make your own petroglyphs. If you were going to make symbols or pictures to show people in the future what you see, do and think about, what would you draw? Show us here!

Do you know the difference between petroglyphs and pictographs? Petroglyphs are carvings and pictographs are paintings.

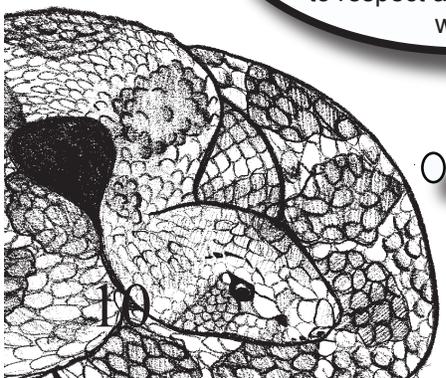


Draw something you see on the cliff.

Draw something that shows future people about your life.

Wow! I see that you are working hard, and the picture looks very nice. How would you feel if someone damaged your drawing? Think about this and write a message to future people about how to respect and protect your work.

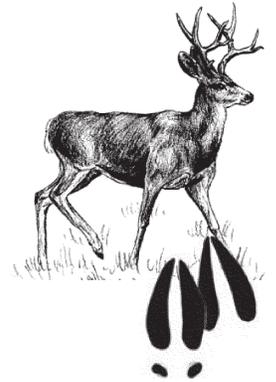
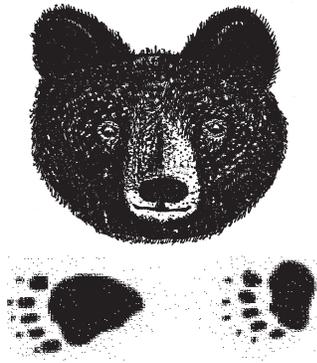
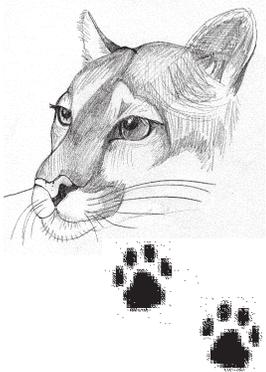
Please help PROTECT and RESPECT petroglyphs and my drawing by





What happened here?

Each animal here is pictured next to its tracks. In the box below, draw a story using the tracks and other signs of one or more of these animals.



Using words this time, tell the story of what happened here:

Don't forget to look for tracks and signs of wildlife throughout your entire visit!

This activity is not recommended in cold or stormy weather.

Be a Creek Biologist

Go to the creek for this exercise. You will be identifying creek bugs to find out if this creek is healthy or not. If you find these bugs, then this creek is not polluted. It is healthy. If you cannot find any bugs, it is probably too cold. Stop at the visitor center to get a water microscope before you go to the creek. Get shoes to protect your feet in the water.

DIRECTIONS:

STEP 1: Explore the wildlife living in the creek by looking at the water's surface and beneath. Pick up rocks and gently turn them over to find bugs under them. You may scoop your bugs into the water microscope to have a closer look.

STEP 2: Record your observations of the bug you see next to its description.

STEP 3: The presence of any of the species on the next page indicates the creek is healthy.

Is this creek healthy?

YES or NO
(Circle your answer)

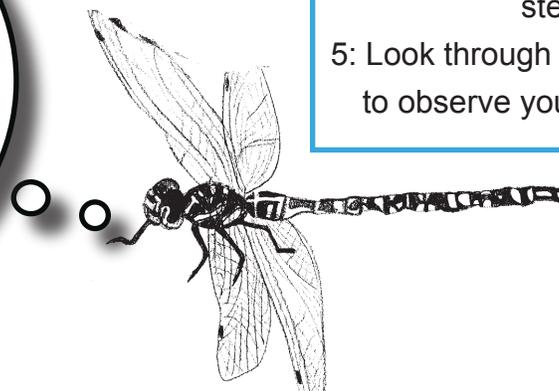
HOW TO USE THE WATER MICROSCOPE:

- 1: Unscrew the cap.
- 2: Scoop the bugs into the cap.
- 3: Put the cap back on.
- 4: Turn the whole thing over and set it on a flat surface to keep it steady.
- 5: Look through the lens in the top to observe your bug up close.

Please remember where you found your bugs so that you can release them to their homes. Be gentle as you put them back in the water!

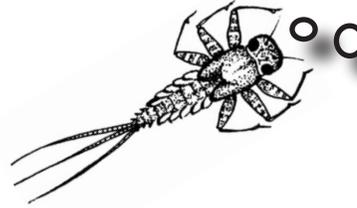
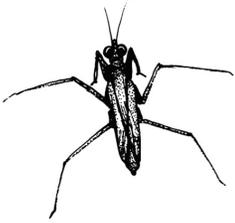
SAFETY FIRST!!!

- 1) Do not drink the water.
- 2) Wash your hands after playing in the creek.
- 3) Watch out for poison ivy and nettles.
- 4) Look out for branches overhead.
- 5) Have fun!!!





Record your observations here:



If you can't find any bugs, it's probably too cold.

Description of Healthy Creek Bugs	Drawing of Bug	Most Identifiable Feature	Where you found it
<p>Caddis Fly Larva: You will find these casings attached to the underside of rocks. They look like long tubes covered in gravel.</p>			
<p>Water Strider: You will find them gliding on top of the water. They have 4 long legs and oval bodies, and sort of look like daddy long legs spiders.</p>			
<p>Mayfly Larva: You will find them underneath rocks too. They have a big head, an oval body, 6 medium length legs and a tail with 3 strands.</p>			
<p>Stonefly Larva: You will find them underneath rocks too. They have a big head, 6 medium length legs, and a tail with 2 strands.</p>			



Bandelier Diamante

For this activity, you are going to write a special kind of poem, called a diamante, about your experience at Bandelier. Follow the directions below.

Diamante poems are shaped like a diamond. They are 7 lines long, and have a special pattern. Just fill in the blanks below with the type of word written beneath the blank.

EXAMPLE:

Abert's
unique, energetic
eating, running, climbing
fur, gray, tail, ears
digging, foraging, nibbling
cute, squirrely
squirrel

A *noun* is a person, place or thing.

A *participle* is an action word that ends in ING.

_____ (noun)

_____ (adjective)

_____ (adjective)

_____ (participle)

_____ (participle)

_____ (participle)

_____ (noun)

_____ (noun)

_____ (noun)

_____ (noun)

_____ (participle)

_____ (participle)

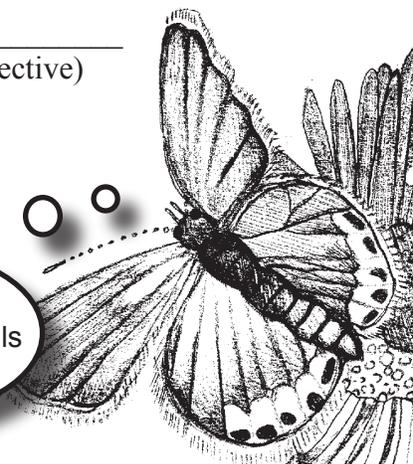
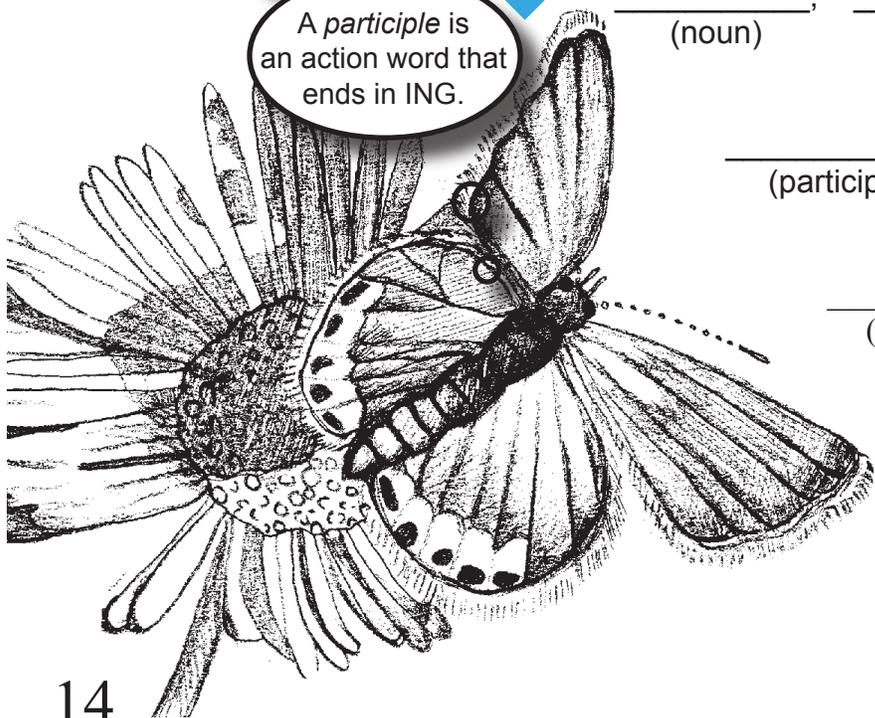
_____ (participle)

_____ (adjective)

_____ (adjective)

_____ (noun)

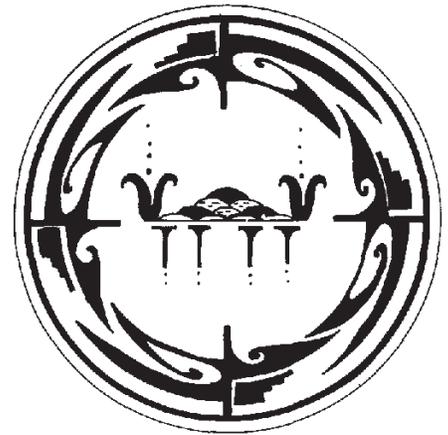
An *adjective* is a word that tells about a noun.





Be an Earth Caretaker!

As you know, the earth is facing tough times. There are many environmental problems today, some are local and some are world-wide.



Write 1 environmental problem you know of:

Think of a possible solution to this problem:

3 things you can do to help the earth:

1. When I have a choice I can _____ instead of going in the car.
2. Instead of throwing away plastic bottles and _____, I can _____.
3. Instead of leaving lights on, I can _____.

Every little thing you can do helps! Thanks for taking care of our home!





Interview with a Ranger



Find a Ranger in the park to interview.

Ask them your questions about Bandelier and their job.

Record your questions and answers here.

Question: _____ ?

Answer: _____

_____.

Question: _____ ?

Answer: _____

_____.

Question: _____ ?

Answer: _____

_____.

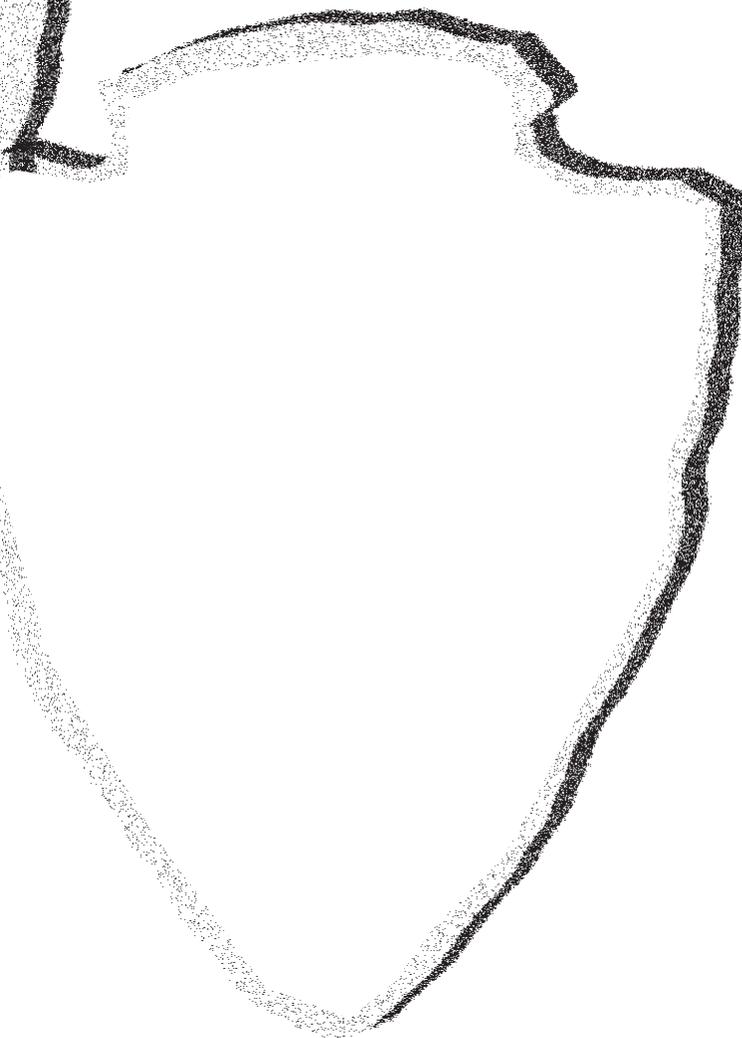


Make your own Junior Ranger pledge!

Think about what it means to be a Park Ranger, then write your own pledge on these lines, and draw a picture to represent it in the arrowhead below.

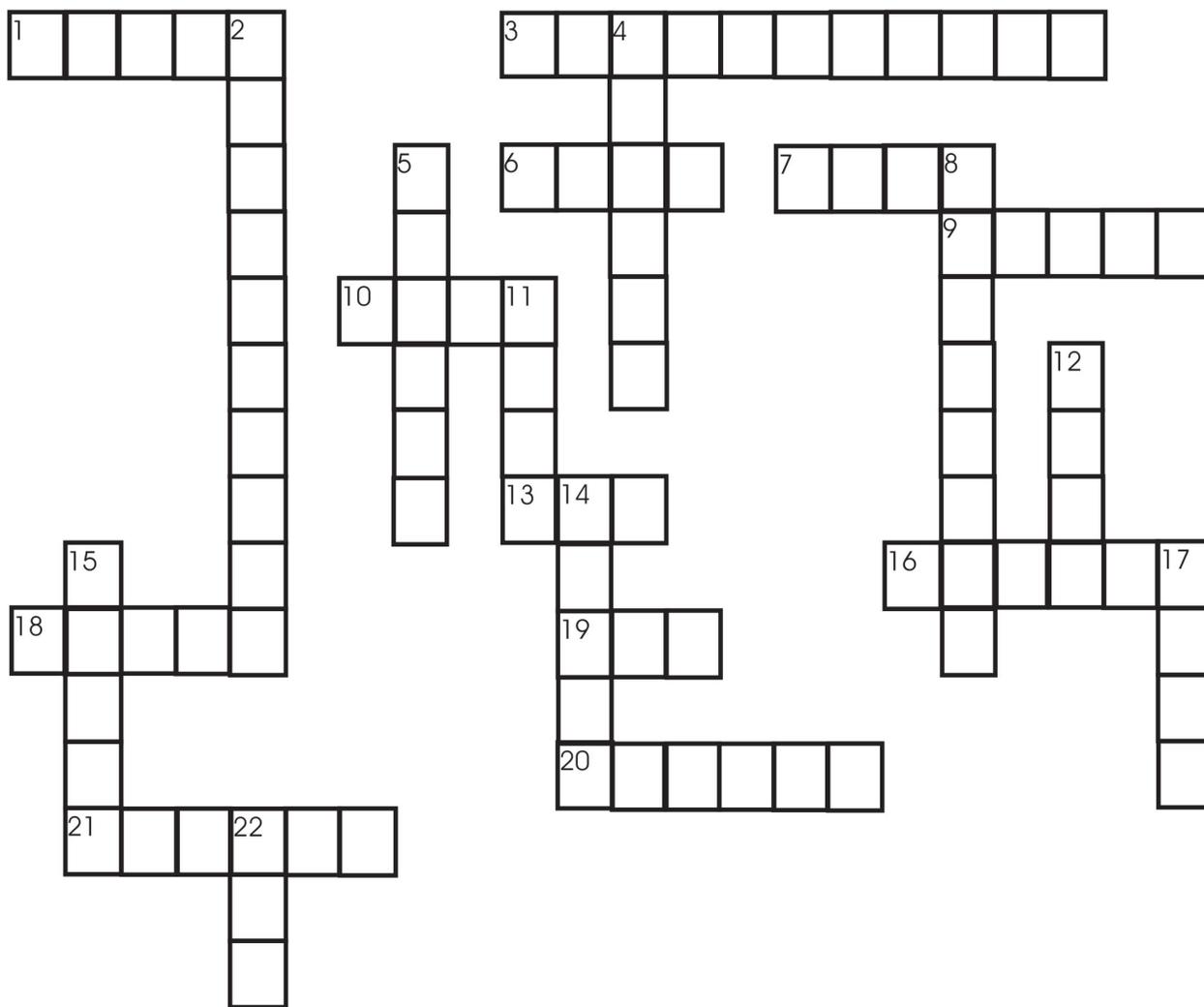
As a Junior Ranger,
I promise to

Handwriting lines for writing a pledge, consisting of ten horizontal lines within a shield-shaped frame.

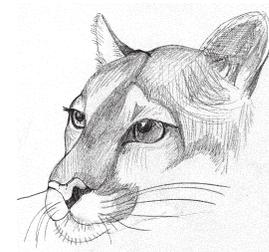
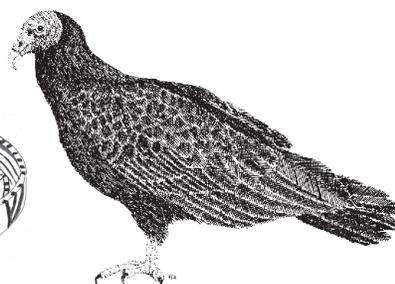
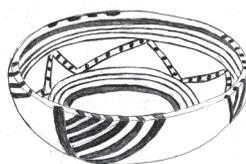




Bandelier Crossword Puzzle



- | | | | | | |
|------------|-------|-------|-------------|--------|-------|
| Arrowheads | Corn | Kiva | Obsidian | Sherds | Vigas |
| Axe | Deer | Looms | Petroglyphs | Sipapu | Yucca |
| Basalt | Elk | Mano | Rope | Tuff | |
| Blood | Hides | Oak | Shells | Turkey | |





ACROSS

1. The Ancestral Pueblo people used every part of this plant; for food, fiber, soap, etc.
3. Rock carvings depicting various shapes, designs, and human figures.
6. This vegetable was a main food for the Ancestral Pueblo people and the husks were dried to make many things.
7. A Spanish word meaning, "hand", it is the term used for the stone held in the hand while grinding corn on a large "metate" stone.
9. An animal substance that was mixed with clay and ashes to cover floors.
10. The flesh of this animal was used for food, the hide for warmth, the bones and antlers for tools.
13. Larger member of the deer family
16. A dark volcanic rock from which tools were chipped and flaked.
18. _____ from animals were probably used for bedding and for warmth.
19. Gambel _____, a tree or shrub found here, produced acorns which were a valuable food source for people and wildlife.
20. Pieces of broken pottery found around archeological sites.
21. The Hopi word for a small hole near the center of the kiva floor that is symbolic of the emergence of the Pueblo people into this world.



DOWN

2. These were of different sizes and shapes, often flaked from obsidian.
4. Feathers from this bird were used to make blankets.
5. When found at an archeological site, it meant they were traded for from people who lived near the sea.
8. Volcanic matter that hardened very quickly into a black glass rock, used for arrow points and trade.
11. Yucca fibers were often twined and used as _____.
12. Underground structures used for religious and educational activities.
14. Weaving of cloth and blankets was done on _____, usually by men, in Ancestral Pueblo times.
15. A Spanish word meaning, "beams", used for roof supports.
17. Caves were enlarged for living quarters by carving away the hardened volcanic ash, known as _____, which makes up the canyon walls.
22. A stone tool used for chopping and cutting.



Junior Ranger Pledge

**As a Junior Ranger, I
promise to explore the
wonders of the National
Parks and nature all around
me; to learn the importance
of every living thing;
to live every day as
earth's best friend;
and to help
others do the
same.**

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.



To learn more about the online NPS Junior Ranger program, visit www.nps.gov/webrangers.

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