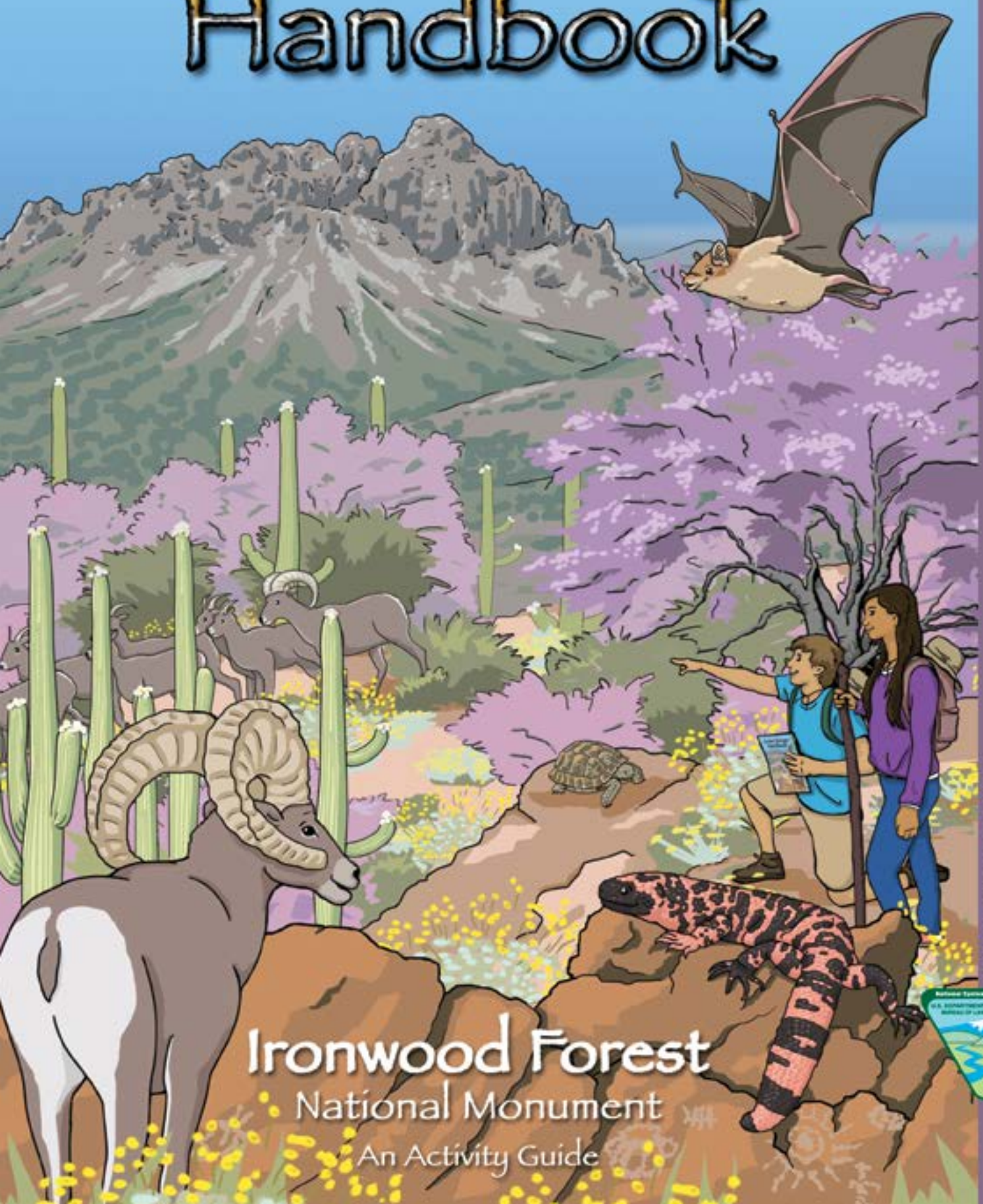


Junior Ranger Handbook



Ironwood Forest
National Monument
An Activity Guide

Arizona • Gila District



Become a Junior Ranger!

What is a Junior Ranger?

A Junior Ranger explores the environment around them.
A Junior Ranger cares for plants, animals, and the land.
A Junior Ranger encourages others to care for the land
and its inhabitants.

How to earn your badge

Complete six or more of the activities in this book in the
Ironwood Forest National Monument, at home, or at a local park.
Then to receive your Junior Ranger badge and signed certificate ...

... bring your booklet (or mail it) to:
Bureau of Land Management
Tucson Field Office
3201 E. Universal Way
Tucson, AZ 85756



IRONWOOD FOREST

National Monument

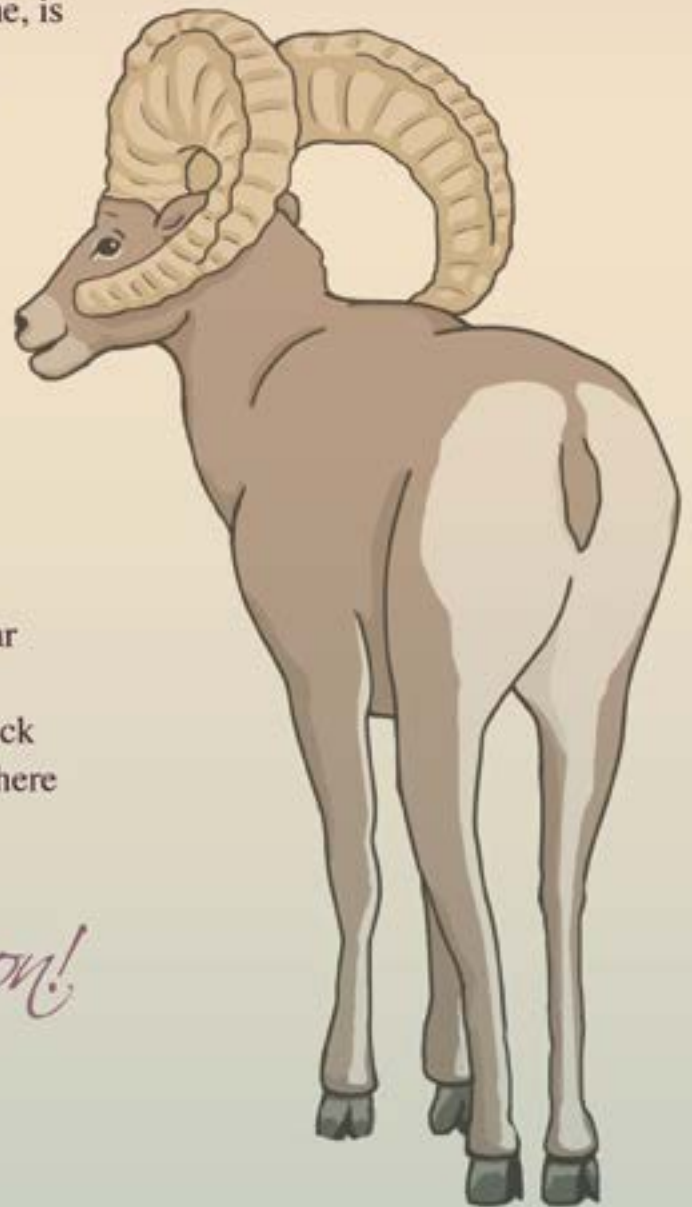


In the year 2000, President Bill Clinton designated this 129,000 acre area of biological and cultural importance as the Ironwood Forest National Monument. The mountain ranges in the monument create areas of habitat for a wide variety of plants and animals. Among these, the ironwood tree, from which the monument gets its name, is an important part of the desert habitat. It provides shelter for small animals and new plants and cacti.

Several endangered species can be found in this protected area; including the Nichol Turk's head cactus and lesser long-nosed bat. The bighorn sheep frequent the mountains of the Ironwood Forest National Monument. It contains the last native herd of bighorn sheep in the Tucson area.

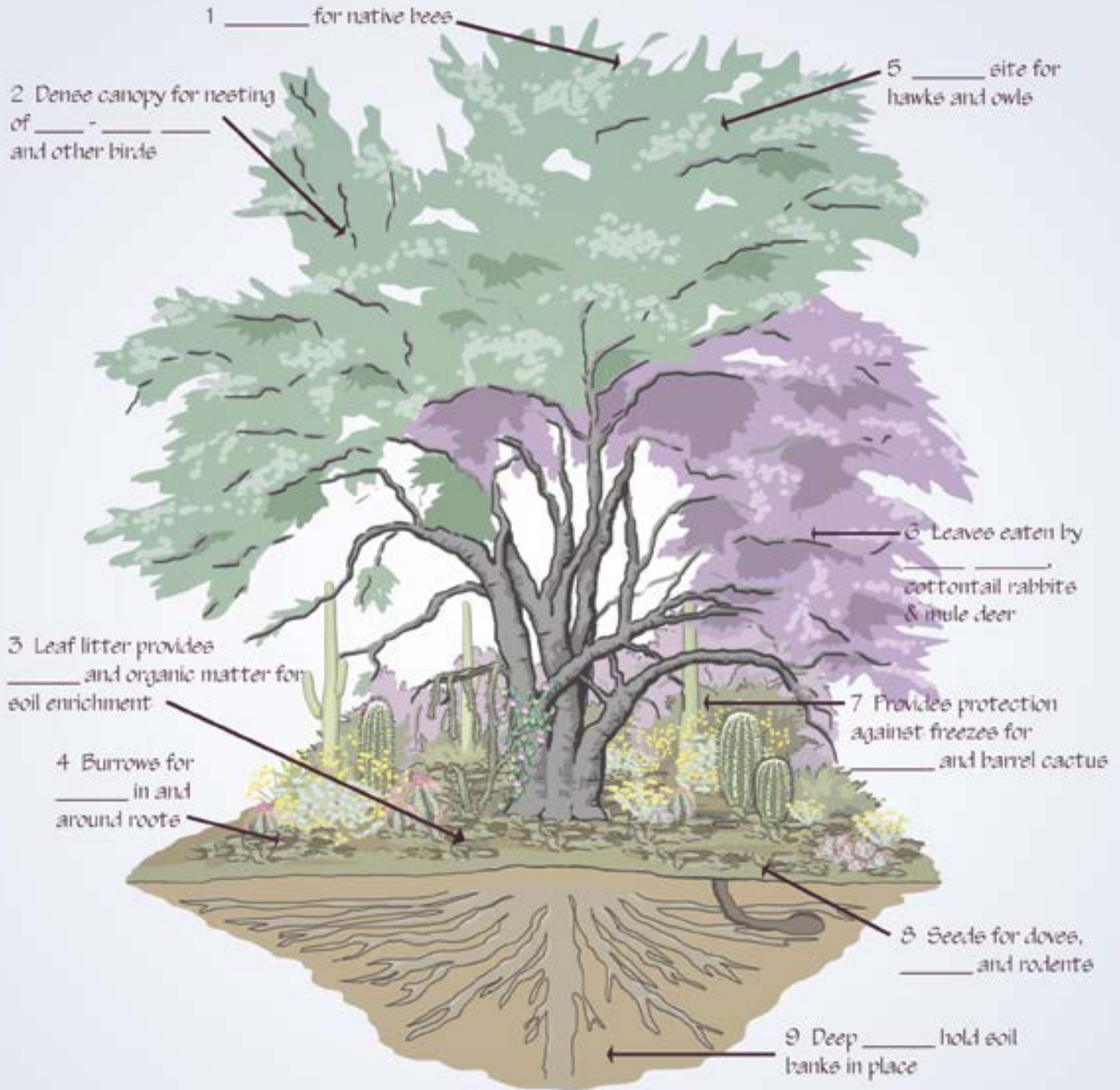
The many archaeological sites in the Ironwood Forest National Monument date back more than 5,000 years. Petroglyph rock art is the most popular of these sites and is found throughout the monument. They are links to the past; keys to unlock the daily lives of those who lived here long ago. There are several locations with petroglyph rock art in the monument.

Visit us soon!



Match the description

with the words provided below



Ecological value of the Ironwood

_____ Quail
 _____ Bighorn sheep
 _____ Flowers

_____ Nitrogen
 _____ Tortoises
 _____ Roosting

_____ White-winged doves
 _____ Saguaro
 _____ Roots

How can you be a responsible Junior Ranger when you visit the desert?

Leave No Trace!

Here's how to do it:

1. Always Be Prepared!

The animals and plants that live in the wild have everything they need to survive. fur coats, sharp eyes, fast feet, etc. When you visit wild places, make sure you do, too. Bring clothes and footwear to protect you from cold, heat or rain. Learn how to use maps, and bring one for the place you are visiting. Read about the forests and deserts and how to prepare for a visit. Make sure an adult knows your plans, or is with you.



2. Choose the Right Path!

Deer and other wildlife use trails, and so should you. Shortcutting or stepping off the trail can hurt plants and young trees, and can also cause the soil to wash away. Use campsites that are already there, and that are at least a half a football field away from water.



3. Bring Back Out What You Bring In!

Never toss litter on the ground. Potato chip bags take up to 20 years to rot away. Soda cans take 500 years, and plastic soda bottles and styrofoam NEVER will go away!



4. Leave What You Find!

Take only photographs and memories, and leave only footprints. Make sure that the next person to visit the area can also enjoy the pretty flowers, rocks, and interesting artifacts.



5. Be Careful With Fire!

Fire can both save and destroy lives, so use it wisely. Camping stoves are much better for cooking food, so ask adults to use them when possible. If you need to build a fire, build it where stone or steel rings have already been established. Never break branches, or chop live trees to get wood for your fire. Never try to burn glass, metal, or plastic litter in your fire.



6. Respect Wildlife!

It is never a good idea to feed human food to wildlife. Although you think you are helping them, you are actually hurting them. Never approach wildlife no matter how friendly they may appear. Take photos from a safe distance. Never allow your pets to chase wildlife.

7. Respect Other Visitors!

Visiting a natural place is much different than visiting a ballpark or playground. People visit natural places to hear the wind blowing through the trees, the birds singing, or other natural sounds. Some just like to enjoy the quiet. Try hard not to shout or make loud noises, walk quietly instead of running, and be sure to keep noisy pets at home.

The "LEAVE NO TRACE" principles are designed to assist those who enjoy the outdoors with decisions on how to reduce their IMPACTS when they are enjoying nature.

Animal Athletes

Hummingbird Hand-swings:

Look for hummingbirds feeding on the flowers of the desert plants. Hummingbirds flap their wings over 50 times per second! 50 wing-beats per second equals 1500 wing-beats in 30 seconds.



How many times can you flap your "wings" in 30 seconds?



Quail Cover:

You can often see the Gambel's quail skirting into shady patches in the desert brush. Quail are rarely seen in flight. Any flight is usually short and explosive, with many rapid wing-beats, followed by a slow glide to the ground.



Stand in one place and flap your arms, then leap forward and pretend to glide.

Mule Deer High Jump:

As you walk through the desert, look for mule deer in the distance. In order to move quickly through the prickly cactus and shrubs of the desert, mule deer leap very high sometimes 6 feet in the air!



How high can you leap in the air?



Lizard Push-ups:

Lizards like to hide in rock cracks and shadows of desert plants, but if you're lucky you may spot one basking in a sunny spot. Male lizards do "push-ups" to show-off their bellies and defend their territory.



Find a clear, safe spot on the trail. How many push-ups can you do in 20 seconds?



Rabbit Hop:

You may see many rabbits darting quickly across the desert landscape. Rabbits can move very swiftly and use jumping as an escape method from predators. They can leap into the air over the back of a predator!



Pretend you're being chased by a predator and hop like a rabbit down the trail.



THE DESERT TORTOISE

Find his way to his burrow

The desert tortoise (*Gopherus morafkai*) is native to the Sonoran desert and occurs east of the Colorado River in Arizona as well as in the states of Sonora and Sinaloa, Mexico. These reptiles may attain a length of 10 to 14 inches with males being slightly larger than females. Tortoises are able to live where ground temperatures may exceed 140 degrees because of their ability to dig underground burrows and escape the heat. Desert tortoises eat grasses, herbs, annual wildflowers, and new growth of cacti, as well as their fruit and flowers. If you see a tortoise in the wild, it is important that you do not pick it up. It may empty its bladder if frightened which could have deadly consequences if it is not able to replenish its water supply. Only handle a tortoise if it is in imminent danger of being struck by a vehicle.



Help guide this desert tortoise back to his burrow. But remember, don't pick him up!

Life cycle of a Saguaro Cactus



Saguaro blossoms appear at night during May and June.



After pollination, each flower develops into a fruit. The fruit ripens in July, and each one may hold more than 2,000 tiny seeds!



After ripening, the saguaro seeds fall to the ground or are dispersed by birds. If a seed falls in the right place, it may sprout and grow.

Saguaro cacti normally live for up to 200 years. Death may come by freezing, lightning, wind, old age, vandalism or human development.



The first arm on a saguaro usually appears when the plant is 65-75 years old.

The first blossoms appear when the saguaro is 35-40 years old.



After its first year, the seedlings highly variable growth is controlled by the amount of water in the soil.



If a saguaro seedling is to survive, it needs the protection of a "nurse plant" which provides protection from the sun and freezing temperatures.



JUNIOR RANGER WORD MATCH



READ THE WORDS AND DEFINITIONS BELOW.
DRAW A LINE TO MATCH THE WORDS WITH THE CORRECT DEFINITIONS.

1. HABITAT

CHANGES THAT HELP PLANTS AND ANIMALS BETTER SURVIVE IN THEIR ENVIRONMENTS.

2. ECOLOGY

STORIES, PLACES AND PROPERTY THAT ARE PASSED TO US FROM OUR ANCESTORS.

3. ADAPTATION

VARIETY IN NATURE OR CULTURE.

4. DIVERSITY

A RECORD OF THE PAST.

5. CULTURE

RECEIVES LITTLE RAIN AND IS VERY HOT IN THE SUMMER.

6. HERITAGE

WHEN A GROUP OF PEOPLE SHARE A LANGUAGE, MUSIC, TYPE OF FOOD, AND A SPECIAL WAY OF DOING THINGS.

7. HISTORY

THE STUDY OF THE RELATIONSHIP BETWEEN LIVING THINGS AND THEIR ENVIRONMENT.

8. DESERT

THE ARRANGEMENT OF FOOD, WATER, SHELTER AND SPACE SUITABLE TO A PLANT OR ANIMAL'S NEEDS.

A WORLD of Adaptations

The Ironwood Forest National Monument is home to many plants and animals. Some like the coyote can live almost anywhere but the desert tortoise lives in a specific place or habitat. To survive, plants and animals “adapt” to the places they live. Adaptations can be behaviors like a lizard lying on a rock to sun itself for warmth or physical like a Gila monster, who is able to survive for months without food because it stores fat in its large tail.

Draw a line from the Adaptation to the Plant or Animal



This animal can survive by hiding in a burrow during the hottest part of the day.



Uses built in sonar while flying at night to detect and catch its prey.



Survives by having spines to protect it from being eaten.

This animal survives by being able to eat a variety of things.



This animal’s musky odor allows it to be recognized by herd members.

Concaved hooves provide traction for this animal allowing it to climb rocky terrain.



Sonoran

Desert

WORDS

SEARCH

Finish the words in the sentences below and then find the words in the puzzle.
Words may go up, down, forward, or backward.

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

Many different plants and animals live in the hot D_____.

Always bring this with you when you visit the desert: W_____.

B___ fly at night after sleeping all day in a cave.

Many of these prickly plants grow in the desert: C_____.

This animal moves slowly and hides in its shell when alarmed:

D_____ T_____.

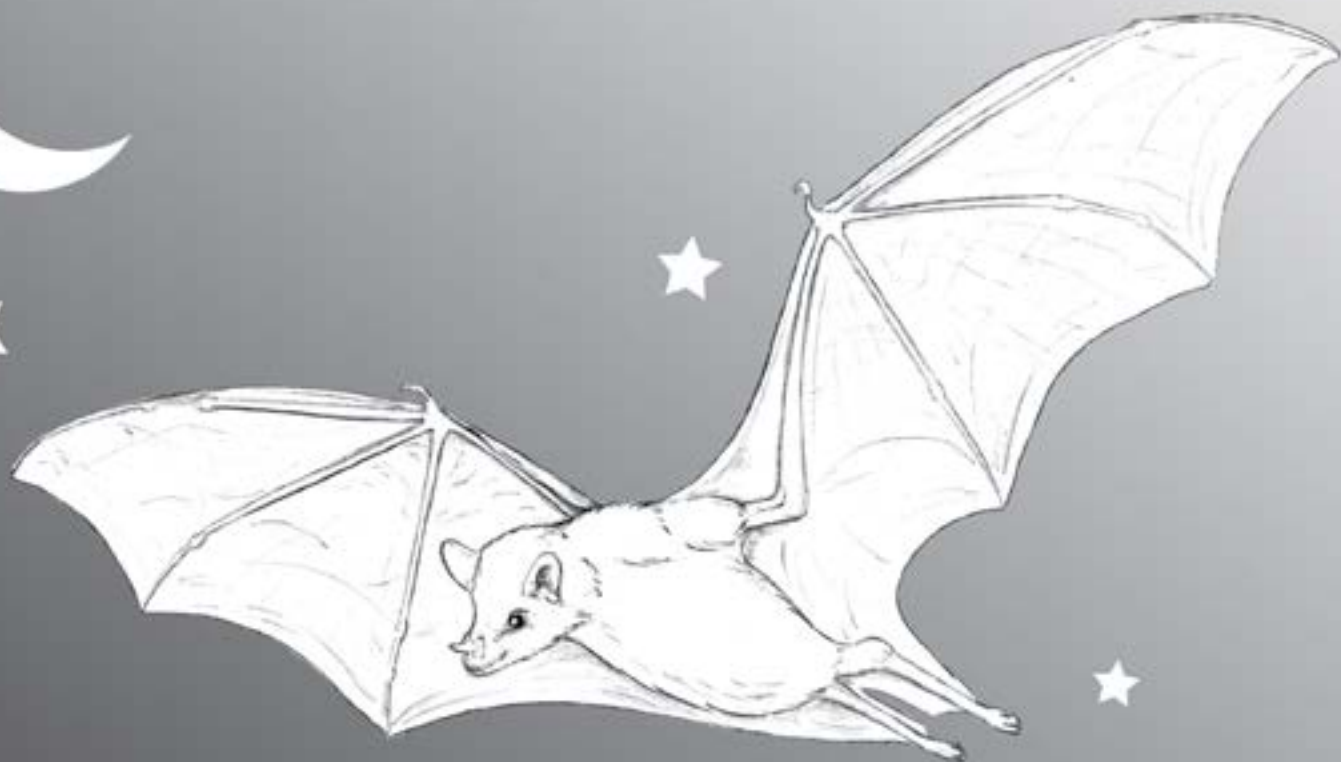
This large bird soars high above the cactus, looking for prey Redtail _____.

This animal climbs rocks with ease: _____ Sheep.

This reptile runs very fast: L_____.

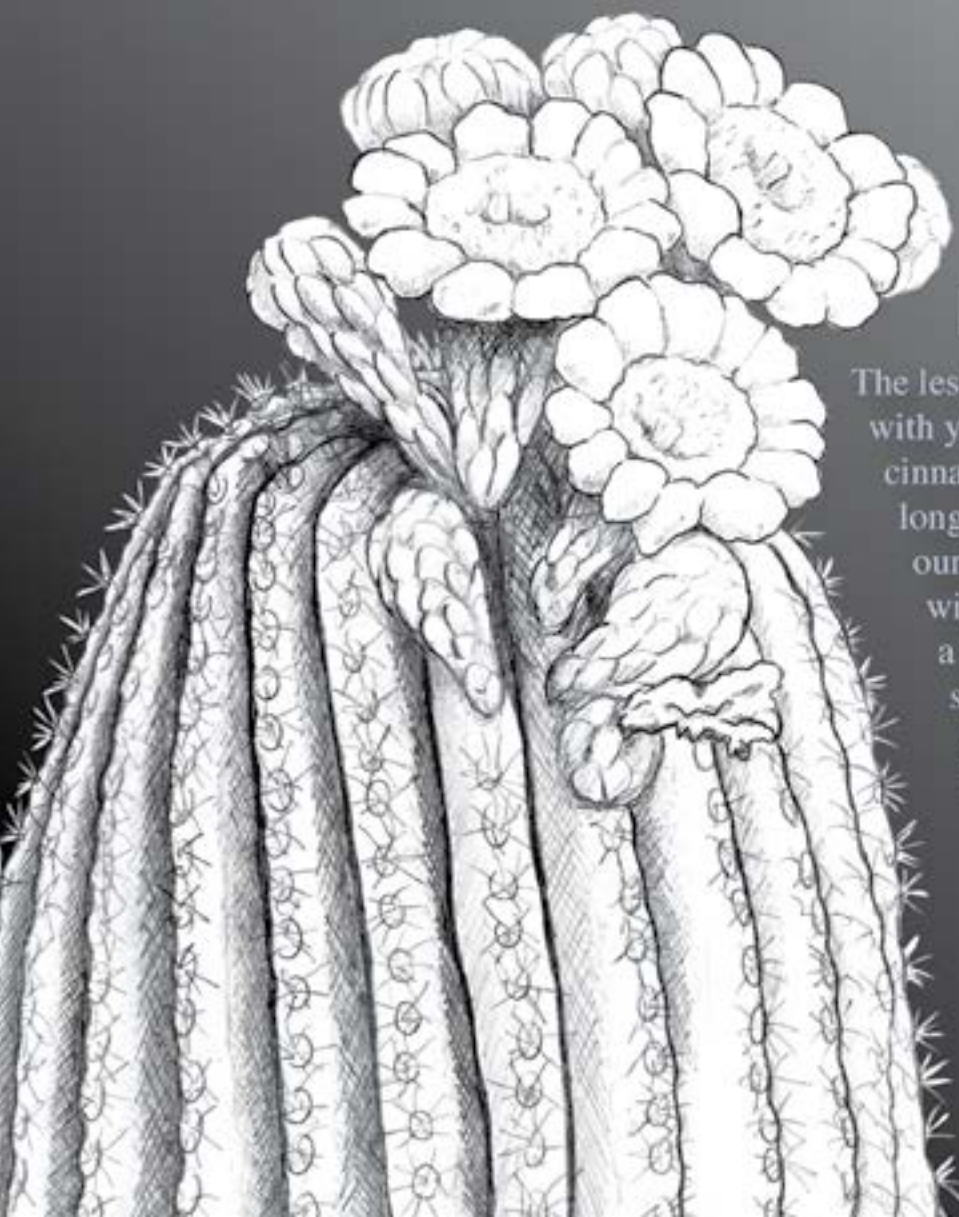
This fuzzy creature rests under the bushes in the shade: J_____.

You should always wear a H___ in the desert.




Lesser Long-Nosed Bat

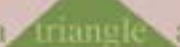
The lesser long-nosed bat is a medium sized bat with yellowish-brown or pale gray above and cinnamon-brown below; around 3 inches long and typically weighs less than one ounce! They have a long narrow snout, with the very end of its nose looking like a small leaf. Its habitat is tied to desert scrub vegetation dotted with century plants, ironwood, mesquite, creosote bush and a variety of cacti. This bat is adapted well for lapping up nectar from night blooming plants such as saguaro and agaves. Lesser long-nosed bats roost during the day in large colonies of up to several thousand individuals in cool caves, crevices, and abandoned mines, dispersing at night to feed.

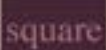


The Hohokam People

Long ago, there was a culture of people that lived in the Ironwood Forest National Monument area that we call the "HOHOKAM." We know about these ancient hunters, farmers and gatherers through studies done by a group of scientists called ARCHAEOLOGISTS. By studying the things left behind, archaeologists have learned much about the Hohokam people, including the things they ate.

Draw a  around the ANIMALS the Hohokam hunted.

Draw a  around the CROPS they farmed.

Draw a  around the NATIVE PLANTS they gathered.



Petroglyphs

Petroglyphs are a Hohokam legacy that we can still see today. The word "petroglyph" comes from two Greek words: petro, which means rock, and glyph, which means carving or engraving. Throughout this area, figures and designs were pecked into cliff faces and stone outcrops. Only the Hohokam knew exactly what these symbols meant, but we can make our own guesses.

What do you think the following petroglyphs might mean?



= _____



= _____



= _____



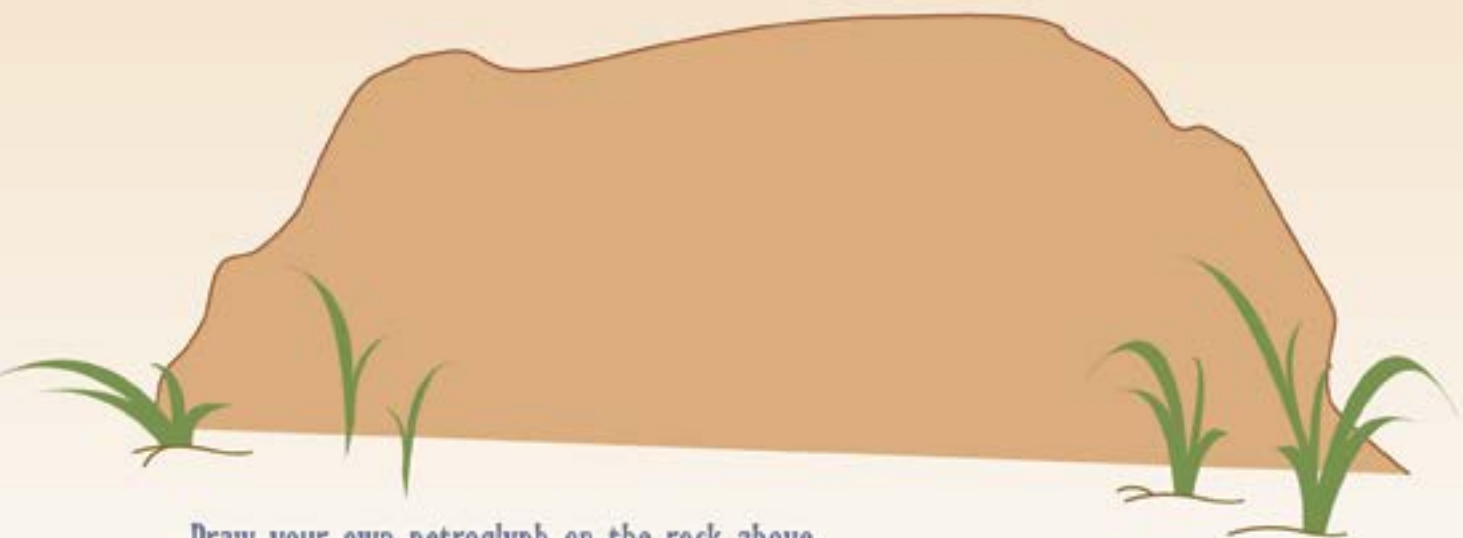
= _____



= _____



= _____



Draw your own petroglyph on the rock above.

What does it mean to you? _____

TRACKS

in the desert

Desert animals can be hard to see, but with some careful observation, you can probably find some tracks in the Ironwood Forest National Monument, in your yard, or in a city park. Unscramble the names of the animals that made these tracks.

TLNIOTCATO BRTIBA



LQAUJ

TOCYEO



LEJAVANI

HBORGNI HPESIE



LMEU ERDE

Answers
cottontail rabbit
quail
coyote
javelina
bighorn sheep
mule deer

Find some tracks of your own and try to figure out what kind of animal it was and what it was doing.

TRACKING TIPS:

1. Walk slowly and quietly - if you are lucky you may see the animal.
2. Tracks are easier to see in the mud.
3. Many animals come out only at night so look for tracks early in the morning.



DRAW THE TRACKS YOU FIND
IN THE SPACE BELOW:



Date:

Time:

Location:

Date:

Time:

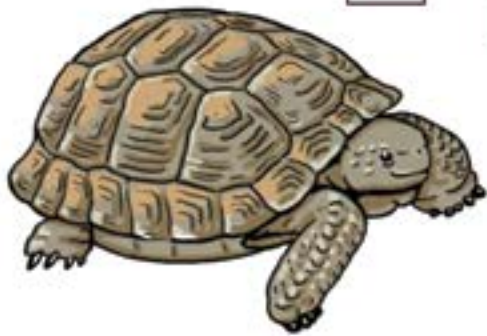
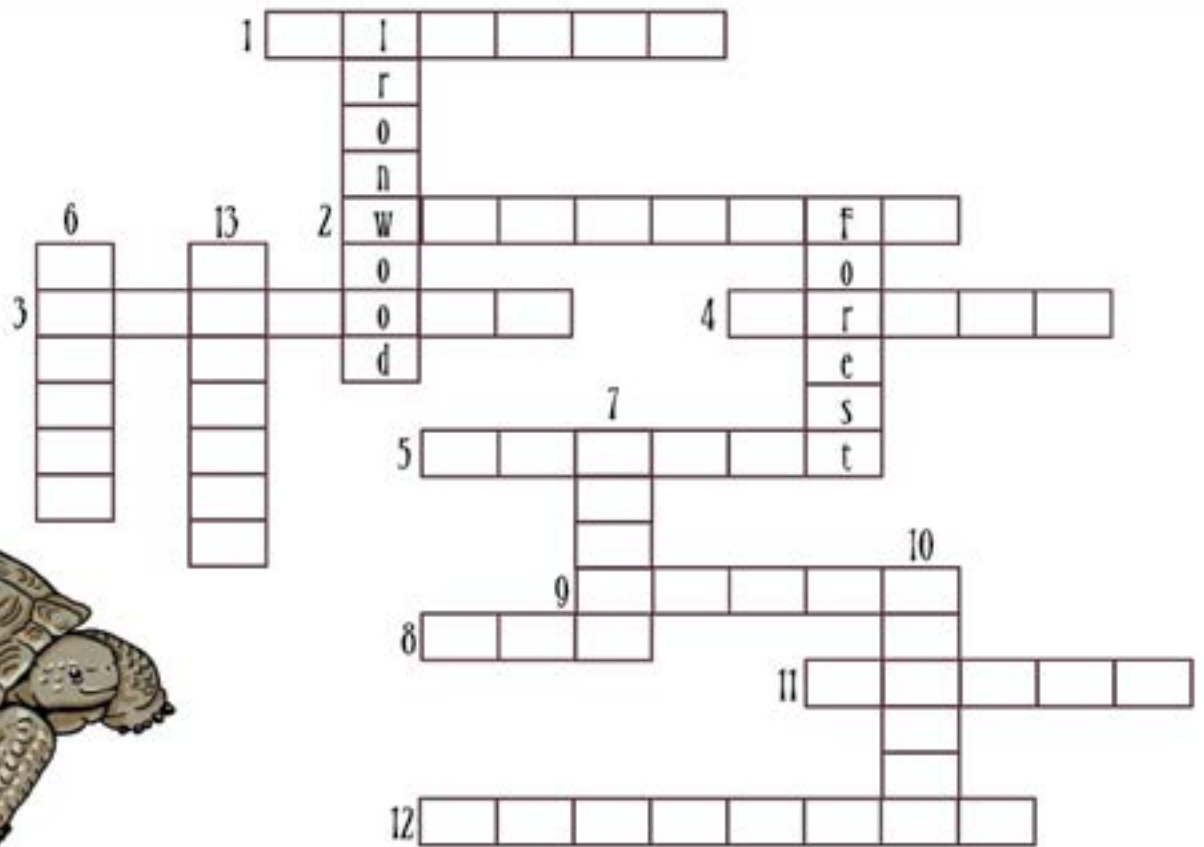
Location:

Date:

Time:

Location:

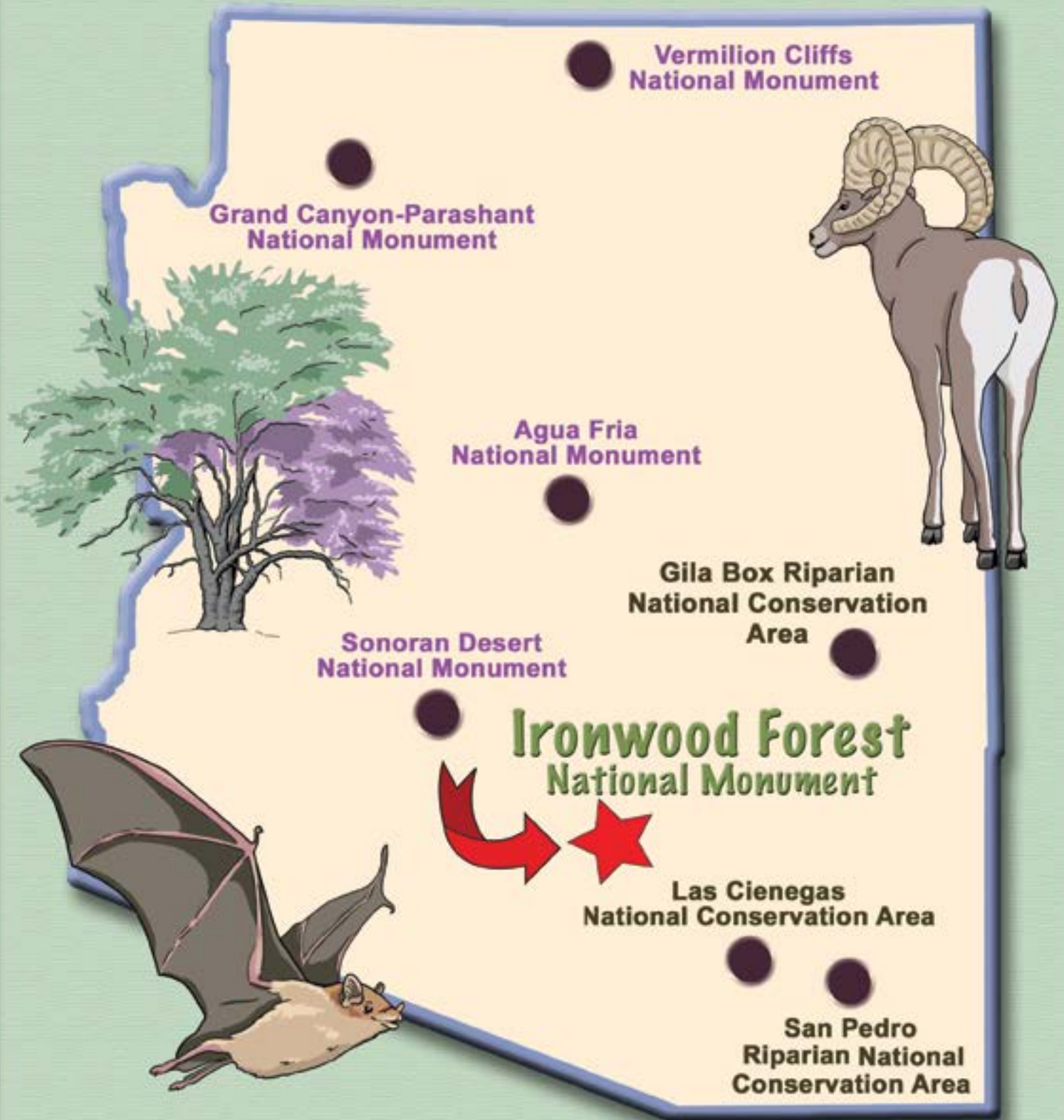
DESERT SAFETY CROSSWORD



1. _____ alone is never a good idea. Take a family member or friend and be sure to tell someone where you are going and when you will return.
2. Treat all _____ with respect. Humans have been scratched and bitten while trying to feed or get close to wild animals.
3. The state in which the Ironwood Forest National Monument is located.
4. _____ plenty of water even if you don't feel thirsty.
5. The type of vegetation community that grows in the Ironwood Forest National Monument.
6. Be especially careful around _____ and other prickly plants.
7. Spines and thorns are very _____ and painful to remove.
8. You should always carry a good hiking _____ and stay on the trail when you are hiking in the desert.
9. Dark places under _____ and bushes are homes for animals like spiders and scorpions. Keep hands out of these places.
10. _____ like to hide in dark places to keep cool. Beware; one might be coiled up waiting for prey to pass by.
11. Carry plenty of _____ when hiking in the desert. It is a very dry place and you need to drink plenty of this.
12. If you are lucky, you might see a desert _____ basking in the sun.
13. If you are really lucky, you might see a _____ sheep, balancing on the rocks, high on a cliff.

More Places to Play and Learn!!!

on the
NATIONAL LANDSCAPE CONSERVATION SYSTEM



Illustrator:
Rachel Ivanyi



Junior Ranger Oath



I promise to help protect the Ironwood Forest National Monument, public lands, my community, and the earth by being an active and responsible steward of the environment.

I promise that I will not feed wild animals.

I promise to leave rocks, plants and historic objects as I find them for everyone to enjoy.

I promise to continue to explore, learn about, and respect the world wherever I go.

I promise I will share what I learn with others.

Signed _____

Date _____

