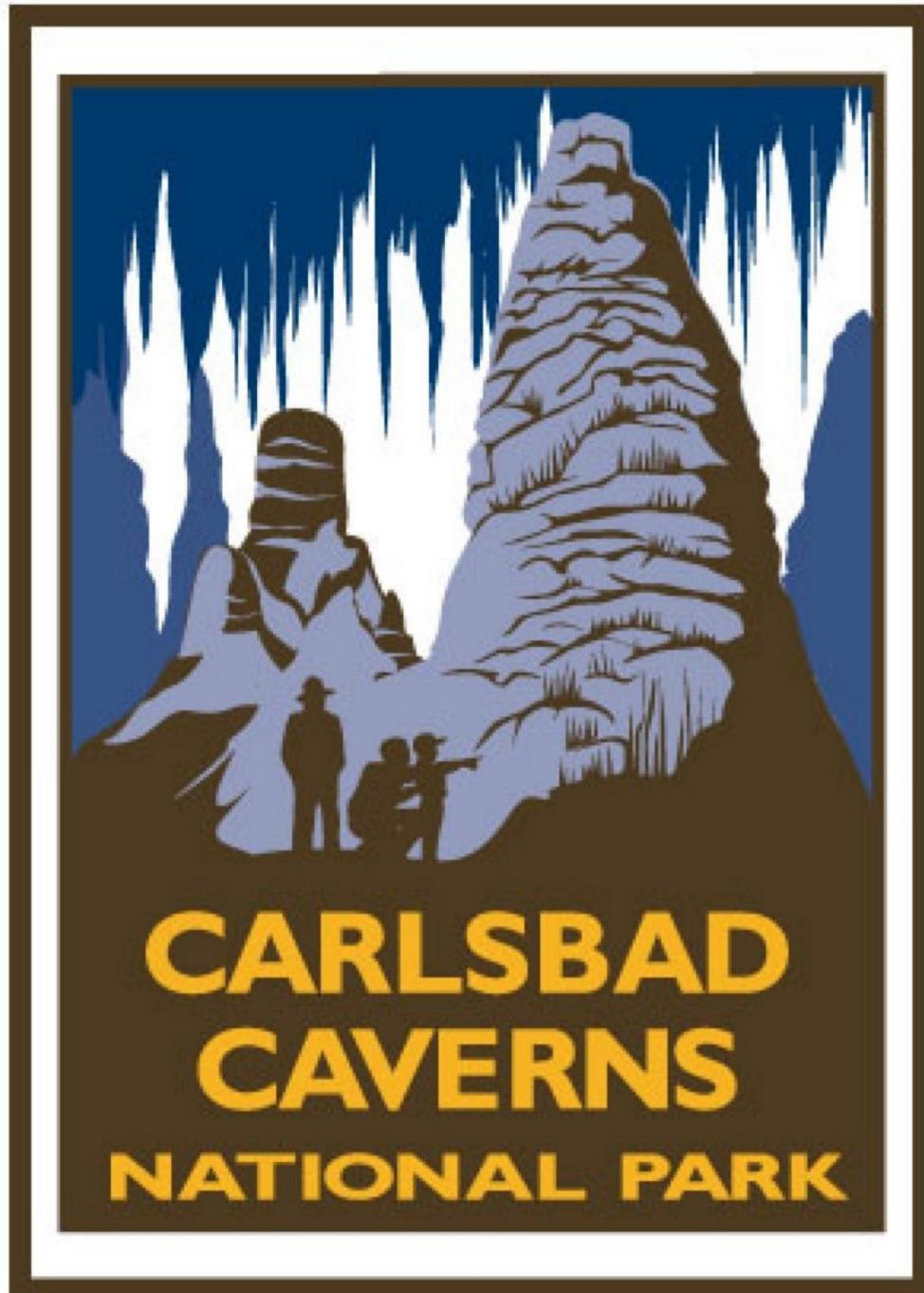


# About Bats, Caves, & Deserts

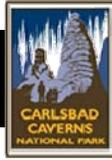
A curriculum and activity guide for Carlsbad Caverns National Park



## *Elementary School*

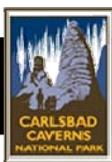






## Section 6 – Animal Activities

- Riparian Area Activities
- Bird Watching
- Fishing for Bugs
- Habitat Cards
- Whoooo's Been Here?
- Home is Where the Nest is
- Camouflage
- Freeze
- Alike and Different
- Sometimes Alike



## Riparian Area Activities

### Pre-Visit, Field-Trip and Post-Visit Activities

#### Intermediate Level

**Science** (Inquiry, Life), **Mathematics** (Unifying Concepts, Numbers & Operations)

**Monitor One Week at Home, 45-Minute Session, 2-Hour Field Trip**

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**Objective(s).** Students will investigate water usage, water flow and pond life in order to better understand and appreciate the Rattlesnake Springs Unit of Carlsbad Caverns National Park.

Students will determine impact of a riparian zone in a desert environment.

Students will identify Rattlesnakes Springs as a riparian zone by determining the characteristics of a riparian zone.

**Related NM Content Standards with Benchmarks.** SC5-M2, SC6-M2, SC10-M1, MA2-M2, MA4-M2, MA7-M4

**Method.** Students conduct activities at home, in the classroom and at Rattlesnake Springs.

#### Materials.

- Water, Water, Everywhere: paper, pencils
- Water Speeds: ping-pong balls, stopwatch, paper, pencils
- What's Bugging You?: jars, white trays for viewing, insect and pond life identification books
- Flyin' High: bird feathers, glass of water, glass of oil, soil

**Key Vocabulary.** riparian, velocity, preen

**Background.** Rattlesnake Springs is an area known as a riparian zone. The term riparian refers to an area bordering a stream, lake, spring or tidewater. Carlsbad Caverns National Park has a few riparian areas within its boundaries. In stark contrast to the dry areas of the Chihuahuan Desert, these water-available zones are alive with plant and animal life in a way that one would expect to find in a more temperate climate.

**Suggested Procedure for "Water, Water Everywhere."** Inform students that they will monitor water usage for a week. Make two small charts. The first chart will be used by each student to measure his/her individual water usage. The second chart will be used by each student to measure his/her household water usage. A third chart will be larger. It will be used by all students to record the amount of water students use collectively while at school. At the end of the week have students answer the following questions:

- How much water was used in a week per student?
- How much water was used in a week per household?
- How much water was used in a week by the class during school hours?

During the field trip, have students count the Cottonwood trees at Rattlesnake Springs. Inform students that each mature Cottonwood tree at the Springs uses 250 gallons of water per day. Then ask students the following questions:

- How much water is used daily by the Cottonwoods? Per week?
- How much water is used by the Cottonwoods weekly?
- How much water is used by the Cottonwoods monthly?
- How much water is used by the Cottonwoods yearly?
- What is the average amount of water charted at the Springs for the year?
- What is the average rainfall for the area?
- Where does the water come from?

**Suggested Procedure for “Water Speeds.”** As a post-visit/homework assignment, have students measure water flow (velocity) by floating ping-pong balls in water at various locations. Instruct students to measure the time it takes for the distance covered.

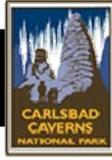
**Suggested Procedure for “What’s Buggin’ You?”** During the field trip, have students carefully catch insects in jars without harming any. Using white trays for viewing and insect/pond life identification books, have students identify what common insects live in a riparian area. Are there some insects that live in the water? Release all insects back to their proper environments upon completion of this activity. Remind students that it is against park regulations to collect insects at a national park—even for a required insect collection project!

**Suggested Procedure for “Flyin’ High.”** Discuss with students that clean water is important in many ways. During the field trip, collect three bird feathers **from the ground**. Show students how the feather’s barbs separate and then close the barbs back up. Discuss bird preening.

**Teacher’s Note:** Questions for discussion and demonstrations.

Ask why birds have feather? Dip one feather in a glass on water, one in a glass of oil and one feather in some soil. Next, *rough up* the feathers and discuss the results. Soil comes off quickly. Water does not stick to the feather. But what about oil? On some rivers you will see oil slicks or film just on the surface. What problems does this cause for water birds? What would be possible consequences of oil on their skins?

Note: Please be sure that your class remains on national park land. One area is a Nature Conservancy Preserve.



## Bird Watching

Pre-Visit, Field-Trip, Post-Visit Activities

Primary and Intermediate Levels

Science (Inquiry, Life)

One Class Session and a Field Trip

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**Objective(s).** Students will exercise observation skills.

**Related NM Content Standards with Benchmarks.** SC5-E2, SC6-E1, SC10-E1

**Method.** After a bird study, students will sharpen their observation skills through bird watching.

**Materials.**

- Each Student: small notepad, pencil, binoculars (if available)
- The Class: several good field guides to share, bird calendar

**Key Vocabulary.** ornithologist

**Background.** An ornithologist is a scientist who studies birds. But, you do not need to be a scientist to learn the art of birdwatching. Millions of people from all around the world enjoy birdwatching. The Rattlesnake Springs unit of the park is a popular place to watch birds because more than 300 species birds have been spotted there. Some bird watchers come equipped with only an observant mind; others bring along a pair of binoculars. Many bird watchers rise early to spot birds that are most active at dawn. The goal of some bird watchers is to see for themselves as many of the more than 8,600 species of birds in the world as they can. To keep track of the birds they have seen, they keep a *life list*. It is a list of every type of bird that they have ever identified. An average list for a bird watcher in North American might have seen between 300 and 500 birds. Bird watchers who travel the world, have more than 6,000 birds on their lists.

You too can be a bird watcher. Just remember that there is more to birds than counting them. Take your time, observe each bird's way of life and its beauty. With practice, you will sharpen your observation skills and be able to identify birds by their body structure, by their colors, by their habits and by their songs.

Migration provides a wonderful opportunity to watch birds. You may see birds that you would never otherwise see. Migration generally occurs in the spring and fall, along routes that run north and south. Migrating birds follow the same routes year after year. These routes are called *flyways*. The birds exhibit an extraordinary sense of direction and an ability to recognize landmarks. Some birds navigate by the sun and moon, others by the positions of the stars and constellations. Some birds have a built-in *compass* which enables them to sense the earth's magnetic field. Just as the sun rises in the east and sets in the west, you can count on the flyways of migrating birds.

**Suggested Procedure for Pre-Visit Activity.** Following a study unit on birds, use one class period to prepare students for a bird watching field trip to the Rattlesnake Springs unit of the park. Below are listed points that should be covered.

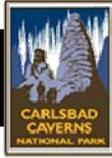
1. Birds have very keen senses and some are wary of people.
2. Pay attention to your appearance. Wear clothing that blends in with the surroundings in which you will be watching for birds. Avoid bright colors.
3. Pay attention to the noise you make. Wear clothing that you can move silently in. Avoid making sudden movements or noises; be still and quiet as much as possible.
4. You will describe birds better when you know what to look for. As you watch birds, ask these questions:
  - What size and shape is its body?
  - What does its tail, head and bill look like?
  - Does the bird have a distinctive pattern of color?
  - Does it flick its tail as it perches?
  - Does it run down the tree trunk or climb up it?
  - Does it feed on the ground?
  - What does its song sound like?

To accurately describe a bird, you will need to know terms for the parts of the bird and for other characteristics that vary from bird to bird. Features of a bird include the following: tail feathers, tail coverts, rump, back, mantle, nape, crown, forehead, bill, chin, ear coverts, throat, wing coverts, breast, belly and flank.

**Suggested Procedure for Field Trip Activity.** If your school is able to visit Rattlesnake Springs, plan your field trip in advance so that arrangements can be made for a park ranger to assist the group with bird watching. The park has a number of binoculars that students may use.

**Suggested Procedure for Post-Visit Activity.** Make a bird calendar on which to record the arrival of birds to your area in the spring. On the calendar, have columns for the name of the bird, the date it was observed, where it was seen and who saw it. Consult a field guide to determine which birds are migrants from or to your area and which birds are year-round residents.

Bird Calendar				
Bird	Date	Location	Seen By	Migratory



## Fishing for Bugs

Field-Trip Activity

Primary/Elementary, Intermediate and Secondary Levels

Science (Inquiry, Life)

2-Hour Field Trip

**Objective(s).** Students will identify several types of aquatic insects.

**Related NM Content Standards with Benchmarks.** SC6-M1, SC10-E1, SC10-E2, SC10-M2, SC10-H2, SC11-E2, SC11-M2

**Method.** Students observe and identify insects from the canal at Rattlesnake Springs.

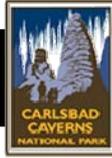
**Materials.** insect and pond life identification books, jars, magnifying glasses, shallow white pan or bowl

**Key Vocabulary.** aquatic, insect, specimen

**Background.** Numerous types of insects live in the waters of Rattlesnake Springs. Many cling to the bottom side of rocks. Some even build tiny rock homes around them. These insects are easy to find by just simply picking up rocks and looking at the rock closely. You may also place the jar just down stream of a rock, then lift the rock gently. Some insects may float right into the container!

### Suggested Procedure

1. Ask students what they expect to find in a canal.
2. Have students collect a few specimens of insect life. Place about a half-inch of water from the canal into the pans, then add the insects.
3. Use the magnifying glass to get a closer look. Using the guides, identify each organism. Are they all insects? What is unique about these animals? How do they breath? How do they stay on the rocks without being swept away by the water? What do they eat? What eats them? What stages of insect life are represented? How will the larvae look as adults? How do they get around?
4. Stress to students that the organisms are to be released unharmed and undamaged. Remind students that all living creatures play important roles in the ecosystem.
5. Have students return the insects to the canal after observing them.



## Habitat Cards

Pre-Visit or Post-Visit Activity

Intermediate Level

Science (Life), Language Arts (Unifying Concepts, Expressive Language),

Art (Visual)

Two 50-Minute Sessions

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**Objective(s).** Students will compare and contrast habitats found in Carlsbad Caverns National Park.

Students will distinguish the flora and fauna that live in those habitats.

Students will use related vocabulary.

**Related NM Content Standards with Benchmarks.** SC10-M2, LA1-M2, LA5-M3, AE8-M9

**Method.** Students study vocabulary words pertaining to wildlife (flora and fauna) and their habitats.

Students design and produce a mural depicting one or more habitats and their inhabitants.

**Materials.** habitat cards (17 vocabulary words made according to directions), clock or stopwatch, paper, pencils, copies of "Habitat Survey" student worksheet

**Key Vocabulary.** habitats, flora, fauna, indicator species, sotol, lechuguilla

**Background.** Carlsbad Caverns National Park is one of the few protected areas within the Chihuahuan Desert ecosystem. What at first glance appears to be a sparse wasteland, actually provides habitat for a rich diversity of breeding birds, mammals, reptiles and insects. The Chihuahuan Desert, the largest of four major desert regions in North America, has unique ecological features that create a living observatory for biological discovery.

The Cavern supports the northernmost and largest colony of cave swallows in the United States. The park has 76 species of mammals, including mule deer, rock squirrel, ringtail and the Mexican free-tailed bat.

Many of the 800 plant species found in the park are at the edge of their geographical distribution, including several threatened and endangered species. The lechuguilla plant and the sotol plants grow only in the Chihuahuan Desert, making them indicator species of the Chihuahuan Desert.

See "Wildlife at Carlsbad Caverns National Park" in Section 2 – Just the Facts.

### Suggested Procedure

1. Discuss with your class various habitats found at Carlsbad Caverns National Park, as well as plant and animal life found in each.

2. Have students research each habitat. Make a class list of characteristics specific to each habitat, as well as examples of flora and fauna common to each.
3. While students work, prepare seventeen vocabulary words that name something found in Carlsbad Caverns National Park. (Use flora, fauna and various habitat words—cavern walls, desert floor, riparian area, etc. Write one-half of each word on different pieces of colored poster board. For example, if you choose the word *peregrine*, write *pere* on a green piece of poster board and *grine* on a blue piece of poster board. When the green and blue sections of poster board are placed correctly side by side, they spell out the word *peregrine*.)
4. Shuffle the completed cards and give each student one card, face down. At a given signal, have students show their cards and try to find their mate in three minutes or less.
5. When time is up, review and define the vocabulary words with your students.
6. Ask the pairs who are displaying the habitats to spread out across the room. Ask the remaining pairs to locate and stand behind the habitat which is common to their vocabulary word.
7. Facilitate a class discussion about the selections made by each pair. Are there other possibilities? What happens to habitats when pollutants are introduced? How might development change various habitats? What natural factors cause destructions of natural habitats?
8. Instruct students to choose their favorite habitats and complete the student worksheet. Upon completion, allow students to share their surveys within groups of seven.
9. Have students design a mural depicting one or more habitats and their inhabitants. Place mural in school hallway to exhibit their knowledge of life science and their artistic talents.

## Habitat Survey

Student Worksheet

### Choose a Habitat

What is your favorite plant or wild animal?

What habitat are you presently “standing” in?

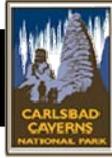
How much moisture is available?

### Species Diversity

List two plants that live here.

List two animals that live here.

Does your favorite plant/animal live in this habitat?



## Whoooo's Been Here?

Pre-Visit or Post-Visit Activity

Intermediate Level

Science (Unifying Concepts, Inquiry, Life), Language Arts (Receptive Language)

45 Minutes

**Objective(s).** Students will dissect owl pellets to determine owl diet and determine their contents.

Students will make determine the position of the owl in the food chain.

**Related NM Content Standards with Benchmarks.** SC4-M3, SC5-M2, SC10-M2, SC 11-M2, LA4-M1, LA4-M4

**Method.** Students listen to a story. Students study the diet of a carnivorous bird by dissecting sterilized, regurgitated owl pellets and classifying the bones and other hard remains of consumed prey. Students make generalizations about the food eaten by owls while studying the food chain to which the owl belongs.

**Materials.** *Owl Moon* (source: school library, public library, book store), one owl pellet per student (source: Pellets, Inc., 3004 Pinewood, Bellingham WA 98225; or, Carolina Biological Supply Company, 2700 York Road, Burlington NC 27215, 1-800-334-5551), tweezers, metric rulers, metric weights, balance scale, chart paper, mark, toothpicks, copies of a bone sorting chart (included in the Owl Pellet Study Kit ordered through Carolina Biological Supply Company)

**Key Vocabulary.** raptor, bird, mole, rodent, shrew, regurgitate

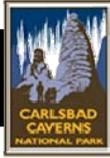
**Background.** Owls are a type of bird known as a raptor, which means they hunt at night for rodents and small birds. When they catch something, they eat it whole. Later they regurgitate the bones and fur as a small oval-shaped pellet. Most raptors use this behavior.

When visiting the Rattlesnake Springs Unit of Carlsbad Caverns National Park, be sure to look for a horned owl in one of its natural habitats.

### Suggested Procedure

1. Order owl pellets.
2. Have a student volunteer to read the book, *Owl Moon*, aloud to the class.
3. Facilitate a class discussion about how owls eat and hunt.
4. Give each student an owl pellet and a metric ruler. The student is to measure the pellet and record its length and its weight.
5. Supply students with bone sorting charts for identification purposes.
6. Give students tweezers and a few toothpicks. Have them separate the pellet and remove the bones. Instruct students to match and sort the bones by type.

7. Have students make a class chart of their discoveries.
8. Discuss impact on owls when the food source population grows or depletes.



## Home is Where the Nest is

### Pre-Visit and Field-Trip Activities

#### Primary/Elementary Level

#### Science (Unifying Concepts, Life)

1 Hour

**Objective(s).** Students will construct a model of a nest without using their thumbs and then explain how a bird builds a nest.

Students will describe where a bird may build its nest and what materials could be used.

Students will identify bird nests on a field trip to Carlsbad Caverns or Rattlesnake Springs.

**Related NM Content Standards with Benchmarks.** SC2-E3, SC2-M3, SC11-E1, SC11-E7

**Method.** Students search for places that appear safe from predators and direct sunlight. They will then build nests using the same materials a bird would use. By taping their thumbs to their hand, students create the nest mimicking the manner in which a bird builds a nest.

**Materials.** camera and film, bird research books, nesting materials, tape (masking, packaging or adhesive)

**Key Vocabulary.** predator

**Background.** Birds build nests in a variety of places—in trees, in caves, floating in marshy areas, even in cacti! Nest building supplies may include any of the following: mud, sticks, stones, grass, cacti, spider webs, snake skins or feathers. Some birds are very choosy where they build their nests and the materials they use. Others are not.

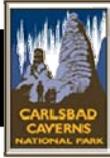
#### Suggested Pre-Visit Procedure

1. Select birds common to your area, such as the Cave Swallow and Canyon Wren, and any that may be nesting in your school yard or a nearby park. Divide students into groups, assigning each a different bird.
2. Have students research the bird's nesting habits (what the nest is made of, where the bird prefers to build its nest, etc.) What considerations does a bird take into account when building a nest? Discuss.
3. Take students to the school yard or park and ask them to find a good nesting site for their bird. Remind them that most birds build their nests where they are sheltered from rain, sun and predators. After visiting the *nest sites*, have the class collectively decide which is the best site.
4. Using the same materials the bird would use, have each group build a nest. Before they begin tape their thumbs to their hands. Explain that birds do not have thumbs to help them build nests and that they should build their nests similar to the way the bird does. Each nest should be approximately the correct size and shape. You may elect to have all the teams work together to find materials. When they are finished, display the nests

and talk about each one. Show your students that you are pleased with their efforts by taking pictures of the process from beginning to end.

5. Arrange to have their nests displayed at the park's visitor center during migratory bird week.

**Suggested Field-Trip Procedure.** Take your students on a field trip to Carlsbad Caverns National Park to look for different types of nests. The Guano Trail and Rattlesnakes Springs are both excellent areas for hiking. If you hike portions of the Guano Trail in the spring or summer, stop by the natural entrance of the cave to see Cave Swallows. Look at the cholla plants for the Canyon Wren. Keep your eyes open because they are well hidden!



## Camouflage

Pre-Visit or Post-Visit Activity

Primary/Elementary Level

Science (Unifying Concepts, Life)

45 Minutes

**Objective(s).** Students will simulate how predators use their eyes to find food.

Students will describe ways in which animals use camouflage.

**Related NM Content Standards with Benchmarks.** SC2-E3, SC10-E1, SC11-E1

**Method.** Students play a game in which they are the hungry predator.

**Materials.** 15 gray pieces of yarn, 15 green pieces of yarn, 15 red pieces of yarn, 15 yellow pieces of yarn, 15 purple pieces of yarn, 15 pieces of yarn that matches the color of the playing surface (Yarn pieces should be two inches long.), poster board

**Key Vocabulary.** predator, camouflage, prey

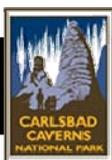
**Background.** Many animals camouflage themselves in their surroundings for survival. Rabbits with their brown fur blend with brown grass. Lizards who have gray bodies and darker gray patches blend with the rocks. Camouflage is a disguise, keeping predators from spotting potential victims. Predators also use camouflage. Those who blend in with their surroundings are able to hide as they draw closer and closer to their prey.

Why do soldiers or hunters dress in camouflage? Why do soldiers now have two different colors and patterns of camouflage—one with shades of green and the other with shades of tan? Which color of camouflage would be most usual in a Middle East desert environment? Which color of camouflage in a forest?

### Suggested Procedure

1. Before students arrive, scatter the pieces of yarn around the playing field.
2. Explain the term camouflage. Ask students to think of animals that use camouflage. How does camouflage help them survive?
3. Divide the group into two to four equal teams. Tell them that they will be *birds* and they will have to hunt to survive.
4. Show students the *worms*.
5. Arrange the groups at the starting line. Tell them that when you say “go,” they must run out into the playing field and find a *worm*. When they do find a worm, they must run back and sit with their group. The first group to have each *bird* find a *worm* and return, wins.
6. After one round, record the results onto the poster board. What color worms were found? What color was the most common? What color was the least common? Why?

7. Have the teams repeat the game. Record the results. Was it harder to find the worms this time? Why?
8. Repeat the game until all the *easy* colors have been found. After most of the *worms* have been found, discuss the results. Do not forget to collect all your *worms*!



## Freeze

Pre-Visit or Post-Visit Activity

Primary/Elementary Level

Science (Unifying Concepts, Life)

45 Minutes

**Objective(s).** Students will define predator and prey.

Students will describe the importance of adaptation.

Students will participate in a food gathering model in order to better relate to predator and prey.

**Related NM Content Standards with Benchmarks.** SC2-E3, SC10-E1

**Method.** Students play a modified version of freeze tag.

**Materials.** red material, pieces of cardboard for food tokens (3 per student), 4 or 5 hula hoops

**Key Vocabulary.** predator, prey, adaptation, native species, non-native species, ecosystem, negative impact

**Background.** Animals display a variety of behaviors in predator/prey relationships. These adaptations help them survive. Some animals run to get away from a predator. Animals may also signal to others that danger is near. If a predator is too close to the prey and cannot run away or hide, the prey may freeze. Sometimes being very still can help the animal go unnoticed by the predator. Also, the color of the prey's body can help it camouflage itself.

By law, wildlife within the boundaries of Carlsbad Caverns National Park is protected. In most cases, park rangers do nothing to protect animals against their animal predators. That is because it is often best to allow nature to take its own course. However, to preserve a natural ecosystem, park rangers sometimes have had to protect native species from their non-native predators. Animals, such as mule deer, raccoons, rock squirrels, several species of rattlesnakes and lizards, ringtails, coyotes and mountain lions are native to Carlsbad Caverns National Park. On the other hand, Bayberry sheep and cow birds are not native. These non-native species have negative impacts on some of the park's native species.

### Suggested Procedure

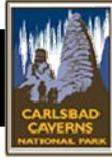
1. Select predators and have them wear a red piece of material to identify themselves as predator. (There should be 1 predator for every 4 to 6 prey). Using a gym or playing field, identify one end as the food source and the other end as shelter. In between these areas, scatter the hula hoops around on the ground. These will represent temporary shelters. Scatter the food tokens (pieces of cardboard) on the ground in the food source areas.
2. The prey must collect 3 food tokens to survive. They must do this, however, without being caught by a predator. The predator must catch 2 prey in order to survive.

3. To begin, all the prey should be in the permanent shelter. The predators should be scattered about between the permanent shelter and the food tokens.

At the command of go, each prey moves toward the food source. Prey can avoid being captured by a predator by having one foot in a temporary shelter. A predator cannot tag prey that is in a shelter. Prey can also avoid capture by freezing when a predator is within 5 feet. A predator cannot tag a prey that is frozen.

Each prey tries to move to the food source without being tagged. He/She tries to pick up 1 food token at a time and return to the permanent shelter. Efforts continue until each prey has 3 tokens. However, if a prey is tagged in the process, he/she must stand on the sidelines.

4. Play several rounds and allow each student to be both a predator and a prey. After the game, discuss which ways of escape worked best. Which were easiest? What did predators do when the prey froze?



## Alike and Different

Pre-Visit or Post-Visit Activity

Primary/Elementary Level

Science (Life), Language Arts (Unifying Concepts), Art (Theater, Visual)

2 Hours

**Objective(s).** Students will compare and contrast reptiles and amphibians.

Students will explain the importance of a healthy, global ecosystem.

**Related NM Content Standards with Benchmarks.** SC10-E1, SC10-M2, LA1-E2, LA1-M2, AE1-E10, AE1-M10, AE1-E14, AE1-E15

**Method.** Students reach stated objectives by making puppets and presenting a puppet show.

**Materials.** The Class: pictures of reptiles and amphibians, chart paper, copies of play, stapler, 2 long tables for a stage, two bed sheets

Each Student: copies of the puppet show script, old socks, construction paper or felt, glue and/or tape, crayons or markers, thin cardboard, scissors, rulers, pencils or small sticks

**Key Vocabulary.** amphibians, reptiles, metamorphosis, global ecosystem, tuatara, herp

**Background.** See “Reptiles and Amphibians” in Section 2 – Just the Facts.

### Suggested Procedure

1. Hang pictures of reptiles and amphibians on a bulletin board. Place a table under the pictures with an aquarium containing an easily cared for amphibian. Another aquarium could contain reptiles. Have students observe and discuss what they notice about amphibians and reptiles. Have students dictate a class list comparing and contrasting the animals.
2. Tell students that they will be taking part in a play about amphibians and reptiles. Distribute copies of the script and assign parts. Prepare the puppets, using as a reference, pictures of amphibians and reptiles. And let the show begin!
3. After the show, review the similarities and differences between reptiles and amphibians.

**Puppet Preparation of Snakes and Caecilians.** Use long socks to cover the hand and arm. The mouth is made between the thumb and hand inside the sock. Make eyes and tongue from construction paper or felt, then glue in place. Use colored socks (green, brown, etc.) or color with crayons or markers to look like the animal.

**Puppet Preparation of Other Animals.** Fold thin cardboard in half and draw the animal’s face and front of body on one side. Cut out the animal holding both halves together, giving a front and back to the puppet. Staple or glue the edges of both sides together, leaving the bottom open. On the second half, draw the back side of the same animal. Color both halves, then insert a ruler, pencil or small stick in the bottom. Glue, tape or staple the puppet in place.

## Tips

- Because there are only 13 characters, present the show twice so all students may participate. The repetition will help students learn.
- Allow the class to read from their scripts.
- Cover a long table with a sheet for a stage. Have students kneel down behind the table with their puppets showing above the table. All puppets remain on stage at all times. Each puppet moves as it says its lines.

## Script for Alike and Different Puppet Show

### Cast of Characters:

Narrator: Fancy Frog  
Amphibian Chairperson: Caesar Caecilian  
The Reptiles: Bossy Boa  
                  Granny Gecko  
                  Too-Old Tuatara  
                  Iffy Iguana  
                  Colorful Chameleon  
                  Timely Turtle  
                  Alley Alligator  
The Amphibians: Tidy Toad  
                  Buddy Bullfrog  
                  Salamander Sal  
                  Spanky Spadefoot Toad

Fancy Frog. Amphibians and reptiles from all over the world have gathered to discuss an important issue. They're tired of being thought of as creepy, crawling, unimportant animals. Let's listen . . .

Caesar Caecilian. As chairperson, I call to order the first meeting of SARA—Society for the Advancement of Reptiles and Amphibians. We all know why we're here, right?

Tidy Toad. We're going to show everyone that we are important animals worth knowing.

Bossy Boa. Yes, let's put the squeeze on those who think we are worthless and gross.

Everyone. (Cheer with your animal sounds!)

Caesar Caecilian. Order, order! (Pound on table.) Does anyone here have some serious suggestions for what we should teach others?

Buddy Bullfrog. I have one! We should tell them what it's like to be cold-blooded.

Timely Turtle. That's a good idea, Buddy. Cold-blooded animals like us spend a lot of time looking for places where we won't get too hot or too cold. We don't need as much food as warm-blooded animals, so we eat less than birds and mammals.

Buddy Bullfrog. That's for sure! Some mammals never stop looking for food. I bet Sylvester the Shrew hasn't ever taken a break to sit in the sun; he's always running around looking for insects and salamanders to eat.

All Amphibians. (Gasp.) How Horrible!

Granny Gecko. Hey, I think this skin thing is really important. Some folks think that it's disgusting that we shed our skin all at once and then eat it. Well, don't they know that they shed tiny pieces of skin every day?

Iffy Iguana. That's true, but I must admit, people don't shed their skin so obviously. And people don't eat their own skins. (pause) However, I have seen more than one person eat chicken skins!

Everyone. (Laugh with your animal sounds.)

Iffy Iguana. Personally, I like the taste of my own skin—and it's full of protein!

Salamander Sal. Well, I have a complaint. I'm tired of being called a lizard. Lizards are okay, but I'm an amphibian. I think we should make it clear that we salamanders are not reptiles.

All Amphibians. (Cheer with your animal sounds.)

Colorful Chameleon. I'm soooo confused! What IS the difference between reptiles and amphibians?

Timely Turtle. Colorful, sometimes I think you have the IQ of an earthworm. There are some big differences!

Caesar Caecilian. Now, now, Timely. You must remember that we are not here to make fun of each other.

Alley Alligator. Caesar, for one thing, most amphibians have smooth, moist skins, unlike us reptiles. Special glands in their skin keep them slimy. And other glands make them taste bad to predators.

Bossy Boa. You aren't kidding! Have you ever tasted a toad?

Salamander Sal. And the eggs that amphibians lay don't have shells. We lay our eggs in water, which keeps them from drying out. At least, that's what most of us do.

Granny Gecko. So that's why so many of you amphibians live in wet places!

Iffy Iguana. We reptiles have dry, scaly skin. And our eggs have shells. We can lay our eggs on land. If it doesn't get too hot, they won't dry out.

Spanky Spadefoot. What a minute! I'm an amphibian, but my skin isn't moist. It's bumpy and dry. And I live in the desert!

Buddy Bullfrog. That's right, Spanky. There are some exceptions. You have a lot of neat tricks for staying alive in the desert, like burrowing three feet under the ground before the hot summer season hits.

Timely Turtle. And that's another thing—we aren't all the same. There are a lot of unusual reptiles and amphibians in the world!

Salamander Sal. Hold on, Timely! Don't forget the one thing that makes most of us amphibians—METAMORPHOSIS!

Timely Turtle. Wow, I sure would have felt silly if we forgot that one!

Salamander Sal. Many of us amphibians hatch from eggs laid in water. Then we go through metamorphosis and become adults. After that, many of us spend a lot of time on land.

Alley Allegator. Most reptiles also hatch from eggs, but we lay our eggs on land. And unlike most of your amphibians, we don't go through metamorphosis.

Caesar Caecilian. Well, now that we've talked about the differences between amphibians and reptiles—hat else do we think others should know about us?

Bossy Boa. That they'd better watch out for toads—they give you warts!

All Reptiles. (Laugh with your animal sounds.)

Tidy Toad. That's not true, and you know it! You're just an old, dry, scaly-skinned creep!

Everyone. (Reptiles and amphibians start arguing.)

Caesar Caecilian. Order! Order! (Pound on table.) Must I also remind you, Tidy AND Bossy, that we are not here to make fun of each other.

Fancy Frog. I would like Too-Old Tuatara to speak.

Everyone. (Pause for a moment of silence as Too-Old Tuatara slowly comes to a stand.)

Too-Old Tuatara. (Use a shaky, old voice.) I've been alive for more than a hundred years. That's more than most of you put together. I'm a reptile and I'm also a herp. There are lots of important things about both amphibians and reptiles that we can teach others. For example, Colorful Chameleon can change the color of her skin in less than a minute. There are other animals that cannot change the color of their skin in an entire life time. Have you noticed park ranger skin? No matter where they work or travel, their skin never changes color.

Colorful Chameleon. Well now, Timely. I guess it doesn't matter if I do have the intelligence of an earthworm. After all, I have a colorful way of surviving!

Too-Old Tuatara. That's right, Colorful. And some snakes and lizards, and even toads like Spanky Spadefoot, can survive in desert temperatures over 130° F. In those high temperatures finding food and water is difficult.

Spanky Spadefoot Toad. You can say that again! I hung out in my burrow for two years during the last big drought. I pity humans who have to carry gallon bottles of water with them to just survive a few days in the desert.

Buddy Bullfrog. Oh my, what a heavy load they must carry!

Too-Old Tuatara. Before I take my seat, I want to make one thing perfectly clear. We all live on the same planet. All plants and all animals, including humans, have important roles to play in our global ecosystem. Not only must we value each other to survive; we must also respect our natural resources, such as soil, water and air.

Colorful Chameleon. Thanks, Too-Old. I think everyone here today has learned a lot.

Bossy Boa. I think that I'll put the squeeze on some on mammals, birds, insects, and fish to attend our next meeting. We all have our place in a healthy, global ecosystem.

Granny Gecko. I make a motion that we rename our society. I suggest SAL for Society for the Advancement of Life.

Caesar Caecilian. Does anyone wish to second the motion?

Salamander Sal. I will.

Caesar Caecilian. Sal has seconded the motion, those in favor say "aye."

Everyone. Aye!!!

Caesar Caecilian. Those opposed?

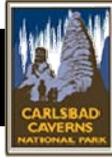
Everyone. (Total Silence.)

Caesar Caecilian. The ayes have carried the motion. For generations to come, our organization shall be known as the Society for the Advancement of Life—

Salamander Sal. (Speak with great expression.) SAL!!! Imagine that, a society named for ME!!!

Everyone. (Very cheerfully laugh with your animal sounds.)

THE END



## Sometimes Alike

Pre-Visit or Post-Visit Activity

Primary/Elementary and Intermediate Levels

Science (Life)

30 Minutes

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**Objective(s).** Students will compare and contrast reptiles and amphibians.

**Related NM Content Standards with Benchmarks.** SC10-E2, SC10-M2

**Method.** Using a Venn diagram, students classify characteristics as to belonging to reptiles, amphibians or both.

**Materials.** copies of *Venn* diagram student worksheet, pencils

**Key Vocabulary.** reptiles, amphibians, intersect, *Venn* diagram

**Background.** See “Reptiles and Amphibians” in Section 2 – Just the Facts.

### Suggested Procedure

1. Distribute copies of the student worksheet.
2. In the left section, have students list the unique characteristics of amphibians.
3. In the right section, have students list the unique characteristics of reptiles.
4. Where the two circles overlap, have students list characteristics that reptiles and amphibians share in common.

# Sometimes Alike

Student Worksheet

Amphibians Only      Both Amphibians & Reptiles      Reptiles Only

