

Texas Wild!



Teacher Resource Materials



Crittterman[®] Safari Guides

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TEACHER'S GUIDE

Group Learning Activities

These activities are appropriate for students of all ages. Suggestions are listed to adapt the activities to the student's different learning levels.

Animal Learning Center

OBJECTIVE: To encourage students to study independently.

Environmental News

OBJECTIVE: Heightens student awareness about environmental conservation efforts in the U.S.

Texas Animal Mural

OBJECTIVE: Students conduct library research, study, and create different ecosystems.

Animals & Texas History

OBJECTIVE: Introduces students to animals in Texas history. Activities introduce animals and terms that relate to history and wildlife status.

Animals and Texas History: Timeline Activity

OBJECTIVE: The timeline allows students to see what changes have taken place concerning native Texas wildlife, and relating them to other important historical events.

Crossword Puzzle

OBJECTIVE: Reinforces terms mentioned in the Animals and Texas History introduction.

Vulnerable, Threatened, Endangered, and Extinct Animals of Texas Activity

OBJECTIVE: Reinforces information in introduction.

PART I: Have students list animals of Texas individually or do this activity a class. Have students compare their list with the list of endangered, extirpated, and extinct animals.

PART II &

PART III: Reinforces animal status terms.

Native American Indians & Animals

OBJECTIVE: Teaches students about the Native American's respect of and relationship with animals and nature.

A Native American "Thanksgiving" Custom

OBJECTIVE: Students learn the origin of the practice of feeding wild birds. Students make their own natural bird feeders.

Apples?

OBJECTIVE: Students learn about the origins of an important Pioneer staple.

Time Machine

OBJECTIVE: Stimulates students to think of ways to care for the planet Earth. Students are asked to compare their lives and possessions today with their ancestors of 100 years ago.

Wild Things

OBJECTIVE: Students to identify life size "paw" prints of 6 different Lone Star species and match them up with their animal owners.

Making Tracks

OBJECTIVE: Students hone their observation skills to locate animal tracks. Instructions on how to prepare a plaster cast of an animal track.

Orphaned Wildlife

OBJECTIVE: Gives students information they need to know before they attempt to "rescue" any native wildlife. Guidelines for evaluating the situation and who to call.

Glossary and Animal Fact Sheets

OBJECTIVE: To familiarize the students with some of the terms that will be used during the live animal presentation. Utilizing these sheets will help the students retain information by reinforcing the information use in different ways. It may be helpful to discuss the words listed in the glossary prior to going over the animal fact sheets. This way the students may be able to define the words used in the fact sheets. Younger students can color the fact sheets and take them home to share them with their parents.

Predator vs. Prey Activity

OBJECTIVE: Introduces students to different animal adaptations. Hand out the work sheets. Using the information provided, suggest to the students different parts of the body that are specially adapted for the animal's survival. Ask the students how that animal might use that adaptation.

Food Chain Activity

OBJECTIVE: Introduce students to food chains - a sequence of events in nature (list as an example on board: owl eats a lizard that eats an insect that eats plants) where one living thing depends on consuming another in order to survive. Read about the food chain together. Have students provide the correct sequence of events using the graphics provided. Students may simply label the correct order 1-6 or cut and paste in sequence. Have older students create their own food chain using the information they have learned.

Wild Animals Don't Make Good Pets

OBJECTIVE: Introduces students to the fundamental differences between domestic and wild animals.

Domestic vs. Wild Animals Activity

OBJECTIVE: Challenges students knowledge about which animals are considered domestic and which animals are considered wild.

What Makes a Good Pet? Activity

OBJECTIVE: Reinforces idea that wild animals should not be kept as pets.

Voting Collection

OBJECTIVE: This is one election students are allowed to vote in. Encourages students to participate in the democratic process.

Make the Texas Ocelot Our State Mammal!

OBJECTIVE: Encourages students to participate in the democratic process.

Resource List

Animal Learning Center

Set up a spot in your classroom where students can browse through materials (books, magazines, posters, etc.) and read about native animals independently.

Display a variety of materials containing information about the different habitats found in the state of Texas, and the native animal species that live here. At the back of this packet, you will find a list of additional appropriate resources.

Adopt A Wetland- Wetland Watcher. Grades K-12. USFWS-AAWP,
Ecological Services, c/o TAMU-CC, Campus Box 338,
6300 Ocean Drive, Corpus Christi, TX. 78142 **(512) 994-9005**

Big Fun in the Big Thicket (Activity Book). Grades K-4.
Big Thicket National Preserve in Texas. Grades 5-12.
Big Thicket National Preserve, Superintendent,
3785 Milam, Beaumont, TX 77701 **(409) 839-2689**

Buy Recycled. Grades K-5. Texas General Land Office,
Communications Division, 1700 N. Congress Ave.,
Suite 825, Austin, TX 78701.

My Wetland Coloring Book. Grades K-5. U.S. EPA,
Region 6, 1445 Ross Ave., Dallas, TX 75202.

Operation Wildlife. Grades 1-6. Pride of Texas Conservation Fund,
500 Main St., Fort Worth, TX 76102. **(817) 335-9453**

Texas Nature Celebration: An Ecological Adventure. Grades 4-12.
San Antonio Museum Association, P.O. Box 2601,
San Antonio, TX 78229. **(210) 226-5544**

Texas Wildscapes. Texas Parks & Wildlife Department
Texas Wildscapes Coordinator, 4200 Smith School Rd.
Austin, TX 78744. **1-800-786-8644**

Animal Mural

1. Divide the class into several small groups.

2. Assign each group a specific biome to be portrayed in their mural.

* Younger students may be assigned general ecosystems such as plains, forests, desert, subtropical forest, wetlands, the gulf, etc. Ecosystems you may wish to assign include are listed on the following page.

3. Students should discuss and make a list of the animals that live in their ecosystem or biome. Each mural should contain two or more insects, fish, amphibians, reptiles, birds and mammals. Water and food sources should be portrayed in the murals as well. * Older students may be asked to draw a diagram of food chains that are likely to occur in their ecosystem. Have them research what the niches or jobs of two of the animals are.

4. When the murals are completed, have the students give the mural a title and label each of the animals species, making special note of the species present status in Texas (good, vulnerable, threatened, or endangered). How have or have not, these animals adapted to living in the same areas as humans?

* Older students may also be asked to include animals species, in their murals, that can no longer be found in the wilds of Texas. What happened to these animals species? Where did they go?

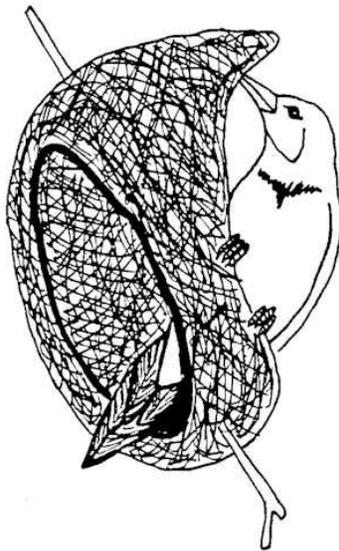
Here are just a few great resources for this project:

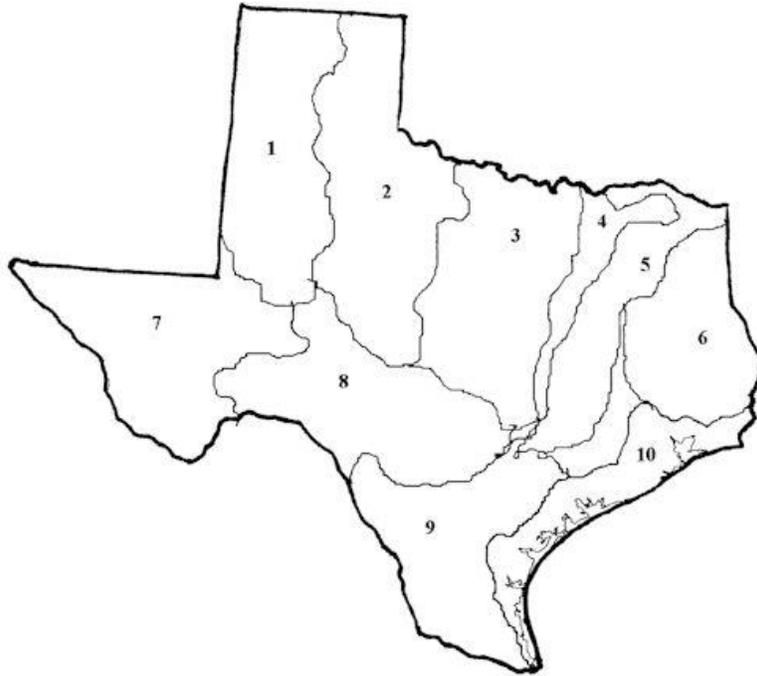
Davis, William B. **The Mammals of Texas.** Texas Parks and Wildlife Department.

Graham, Gary L. **Texas Wildlife Viewing Guide.** Falcon Press.

Hiller, Ilo. **Introducing Mammals to Young Naturalist.** Texas A&M Press, 1990.

Tennant, Alan. **A Field Guide to Texas Snakes.** Gulf Publishing, 1990.





1. High Plains: short grassland, playa lake, juniper shrubland, cottonwood woodland, river

2. Rolling Plains: medium/tall grasslands, mesquite & juniper shrublands, river, rock out crops

3. Cross Timbers & Prairies: oak woodland, tall grassland, lake, river, river woodland

4. Blackland Prairies: tall grassland, river woodland, lake, river

5. Post Oak Savannahs: oak woodland, tall grassland, bottomland hardwood forest, lake, river, bogs

6. Pineywoods: pine/oak forests, bottom land hardwood forest, long leaf pine woodlands, beach/magnolia forest, lake, river bogs

7. Mountain Basins: desert scrubland, desert grassland, mesquite shrubland, pinyon & juniper scrubland, ponderosa pine/douglas fir forest, oak woodland, river woodland, river, rock outcrops

8. Hill Country: juniper/oak woodland, medium/tall grasslands, river woodlands, lake, river, cave, springs

9. Rio Grande Valley: mesquite woodland, woody shrubland, subtropical forest, palm forest, river

10. Gulf Islands, Marshes, & Prairies: fresh/saltwater marshes, hardwood forest, live oak woodland, tall grasslands, sandy dunes, mud flat, bay, open gulf

Animal Match Game

Native Texas animals live in a variety of homes. A home can be a shelter, or, where an animal gets it's food and water. All of these things are found in an animals territory or home range. Challenge the class to name as many different kinds of animals & their homes as they can. For older students, this activity may be adapted to review specialized environments in which various invertebrates live (ameba, protozoa, etc.) or to review animal taxonomy (Kingdom, Phylum, Order, etc.).

1. Have students split up into groups. Appoint a scribe and a spokesperson. * Weather permitting, you may wish to stimulate students thinking by allowing them to explore outside for 10-15 minutes.

2. Remind students that all different types of animals have homes; arthropods (insects, spiders, crustaceans, etc.), amphibians, reptiles, birds, and mammals. If they need help getting started ask them to quietly write their answers to these questions down:

Q. Where does a tarantula sleep?

A. In an underground burrow.

Q. Where do raccoons get their food?

A. From the water (ponds & creeks).

Q. Where do owls lay their eggs?

A. Depends on the species of owl,
(underground, tree or

cactus hollow).

3. Make it a contest with a simple reward. The group who lists the most animal homes, gets to be at the head of the line to the cafeteria, gets an extra five minutes of recess, you know best the little things your students covet. For older students the reward may be a couple of extra credit points added to their next quiz or test.

4. Have the spokesperson from each group read the list of homes. List each groups findings on a chart or chalk-board for everyone to see. Can they think of any other animals they may have missed that live in similar homes?

Environmental News

1. Choose a prominent place in the classroom to display a map of the United States.

2. Send a note home with younger students asking parents to help their child find articles that involve animals, habitats, or projects people are doing to help save the environment. Ask them to please discuss any articles they find with their children, so that the children will be informed about the article they are bringing to class and can express an opinion about its contents if asked. Children's magazines such as "Ranger Rick", "World Magazine", "Owl Magazine", and "Falcon Magazine for Young Conservationists" are good ones.

* You may choose to have older students concentrate on finding articles in local newspapers and magazines (Texas Parks & Wildlife, and Texas Co-Op are good ones), instructing them to cut out any articles featuring animals, natural habitats in Texas, special scientific studies and clean-up projects.

3. Set a block of time aside during the day or class period to add and discuss new articles. Arrange the articles at appropriate points around the map. Cut yarn an appropriate length of yarn, pin one end to the area of the map to show where the story originated and the other to the article.

Your class will soon be able to see at a glance in which parts of the United States wildlife and environmental issues are making headlines!



* ENVIRONMENTAL FACTS *

Here are some facts you can share with the class to help illustrate why it is important to **REDUCE, REUSE, and RECYCLE**. These three things can help make the world a better for both humans and animals to live. Start an environmental facts board in your classroom.

1. Have students illustrate the facts listed below and ask them to come up with simple solutions to solve some of the problems we have in conserving our planet's resources. For example: How could we reduce the amount of garbage buried in Texas landfills? Answer: **reduce** the amount of garbage we generate by not buying cheap products that will not last or ones that have excess packaging; **reuse** or give things away we no longer find useful; **recycle** everything that can be recycled, compost leaves, grass clippings and food scraps.

2. Challenge students to find new facts to illustrate and add to the board.

- * 73% of all garbage generated in the U.S. is buried in landfills.
- * Each and every American throws away about a half a ton of garbage each year!
- * Home recycling programs take only about two minutes a day to maintain.
- * Making one ton of recycled paper uses only 60% of the energy that it takes to make a ton of new "virgin" paper!
- * If everyone recycled their Sunday newspapers every week, we would need to use 500,000 less trees to print newspapers each week!
- * One ton of recycled aluminum saves 95% of the energy needed to make new aluminum!
- * More than half the energy we use at home is used to heat or cool the house. Half of that energy is wasted by insufficient insulation.
- * New LED bulbs use 1/30th the energy of a regular light bulb and last 25 times longer!
- * Taking quick showers uses 1/2 the amount of water that a bath does. With new water saving shower heads you can reduced the amount of water you use to 1/4!

Animal & Texas History

Can you imagine the Texas plains so thick with bison, that a traveler could travel on horseback for three days as the herd stretched from horizon to horizon? Seeing thousands of deer in a single day? Prairie chickens so abundant that they blocked out the sun as they flew overhead? Prairie dog towns twenty-five miles in diameter? This is what Stephen F. Austin and his group of followers found when they first arrived in Texas over 160 years ago.

The rich woodlands of East Texas, also known as the Big Thicket, once supported the greatest diversity of wildlife in North America. With so much wildlife, early Texas settlers felt no need to limit their hunting.

Bison was once the major source of food and clothing for Native Americans Indians. The U.S. government asked hunters to destroy the large herds of bison, so that the Native American Indians would be forced to move elsewhere in search of food and clothing.

Following the Civil War, Texas ranchers brought millions of dollars to the bankrupt state by exploiting wild herds of cattle. This led to the birth of the American cowboy. Cattle quickly took over the Texas plains and pushed out the native wildlife. Ranchers in West Texas extirpated bears, wolves, and other predators on site. Farmers in East Texas shot ducks, geese, and Carolina parakeets, which feasted on grain and fruit crops.

The story of the "taming" of Texas goes on and on. Finally, in 1907, Texas formed a game department, which established hunting seasons and set limits on the number of animals people could legally kill. However, some species, such as the highly persecuted cougar, are still unprotected today.

These days many Texans realize the importance of protecting all species to preserve the delicate balance of nature. We must do all we can to educate others and to protect the species that still remain in the great state of Texas!

Animal & Texas History: Time Line

Materials: Paper, crayons, tacks, blank wall or bulletin board, and pictures of each of the following animals: bison, deer, prairie chicken, prairie dog, black or grizzly bear, red or gray wolf, duck, and goose (Texas Parks & Wildlife Magazine is a good resource).

1. Have students read Animals & Texas History. You will want to read it aloud to young students, taking time to explain and discuss some of the more complex words and ideas as you go. As you read to the students about the various animals, hold up the pictures so they will have an idea of what the animals look like.

2. Following the reading, assign each student or group of students a different idea to illustrate for a time line.

Illustration ideas you may choose to assign:

- "a herd of bison stretching from horizon to horizon"
- "travelers seeing thousands of deer"
- "so many prairie chickens they blocked out the sun"
- "prairie dog towns covering the plains"
- "Stephen F. Austin and his followers"
- "cowboys and their cattle"
- "ranchers hunting wolves and bears"
- "farmers hunting ducks and geese"
- "a game warden watching hunters"

3. Tack string up across the wall or board and label different time periods such as the Stephen F. Austin's arrival in Texas, Post Civil War, 1907 (when the TP&WD was established), and today. Include any other dates and events the students have read about or studied.

4. Post the illustrations at appropriate spots on the time line using the "story" as a guideline. At the end of the time line make a label that reads **"TODAY IF YOU WANT TO SEE A LOT OF ANIMALS AND LEARN MORE ABOUT THEM YOU..."** Have students draw pictures of where they would go (e.g. library, farm, zoo, Sea World, etc...).

CROSSWORD PUZZLE

ACROSS

1. wild ox or American buffalo
4. wild birds or animals hunted for sport or food
6. name for the eastern woodlands of Texas
9. preys on other animals
10. systematically removed, by killing or relocation
11. the line where the sky seems to meet the earth
12. original inhabitant

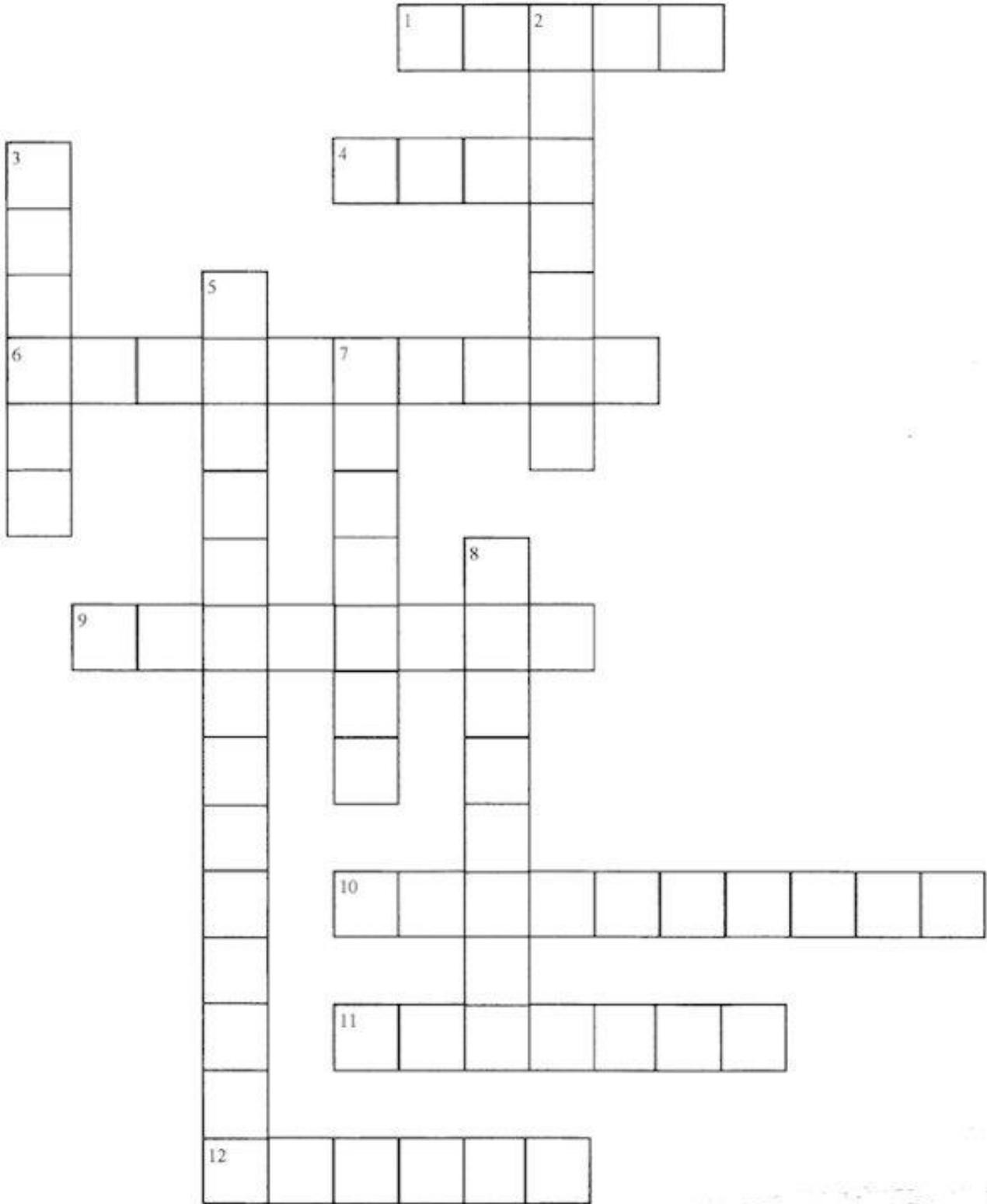
DOWN

2. scientific classification of several similar animals
3. ranch worker who herds cattle
5. Texas pioneer
7. Native Americans
8. _____ State

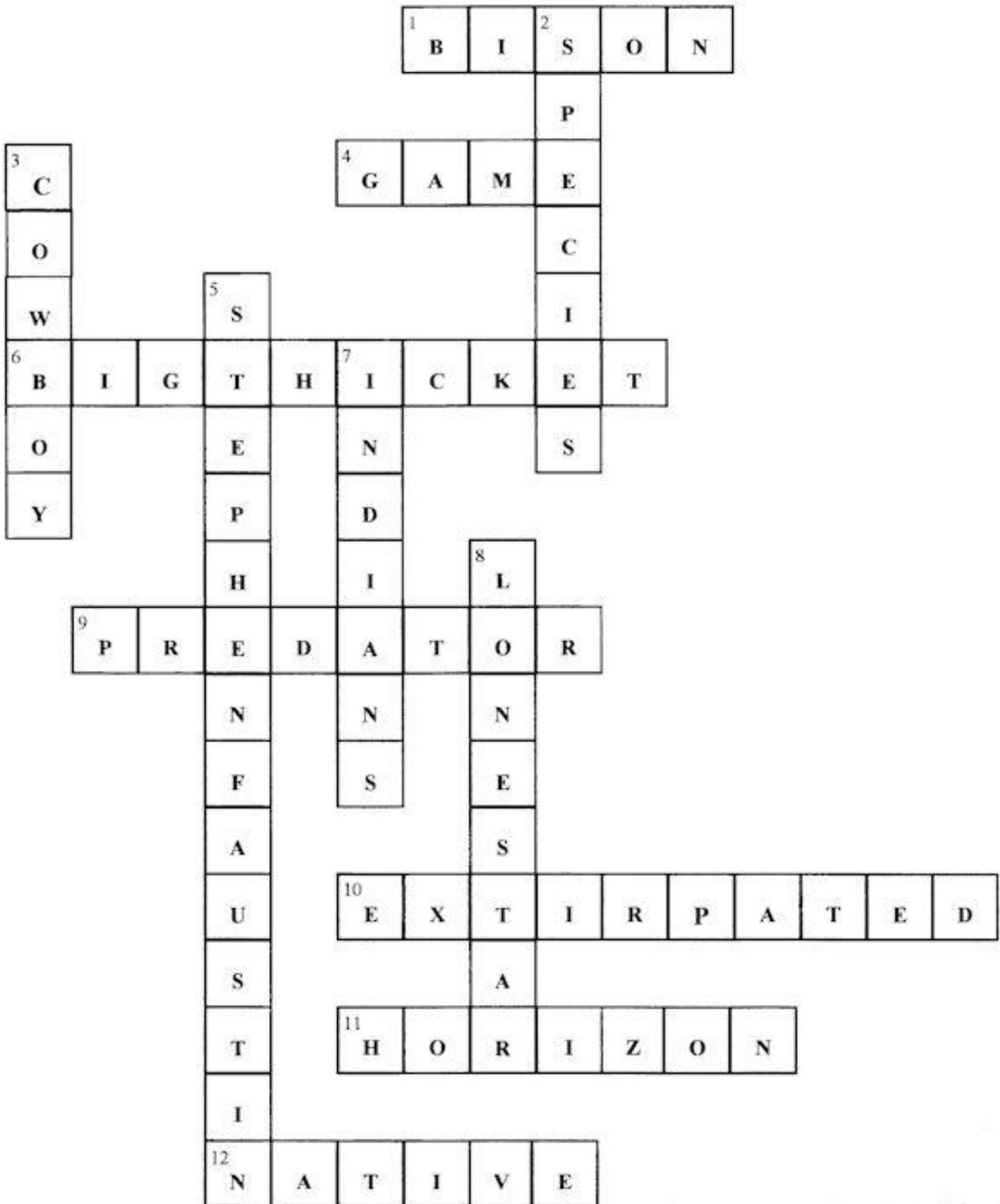
Words in Puzzle

bison
big thicket
cowboy
extirpated
game
horizon
Indians
Lone Star
native
predator
species
Stephen F. Austin

Texas Crossword Puzzle



Texas Crossword Puzzle Answers



Animals of Texas

When people move into wild areas, they make a lot of changes to the **environment**. The plants and animals that live there may become **vulnerable**. Some animals may be able to adapt to the changes, others may have a hard time due to **habitat destruction**, pollution, or hunting.

The animals that have a hard time may then become **threatened**. The threatened animals may then try to leave the area to find a new **habitat**, which could cause them to become **endangered**. If they cannot find a new habitat, and are forced to live in conditions that threaten their survival, the endangered animals could become **extinct**.

We can keep animals from becoming **extinct** by making sure that they have a safe place to live.

Directions Part I:

List below animals that come to mind when you think of Texas.

Now compare your list with the list of extinct, extirpated, and endangered animals. Put an **EX** next to extinct or extirpated animals. Put an **E** next to those animals that are endangered.

Extinct and Extirpated Species of Texas

Bison	Manatee
Black-footed ferret	Merriam's elk
Carolina parakeet	Mountain sheep
Gray wolf	Passenger pigeon
Grizzly bear	Red wolf
Ivory-billed woodpecker	Sharp-tailed grouse
Jaguar	

Endangered Mammals of Texas

Black right whale	Margay
Blue whale	Mexican long-nosed bat
Coatimundi	Ocelot
Fin whale	Sperm whale
Jaguarundi	

Endangered Birds of Texas

American peregrine falcon	Eskimo curlew
Aplomado falcon	Golden-cheeked warbler
Attwater's greater prairie chicken	Interior least tern
Bald eagle	Red-cockaded woodpecker
Black-capped vireo	Whooping crane
Brown pelican	

Vulnerable, Threatened, Endangered, & Extinct Animals of Texas

PART II DIRECTIONS : Place these words in the proper definitions.

Vulnerable Threatened Endangered Extinct

1. A species threatened by extinction is considered _____.
2. _____ means if conditions don't change the animal will become threatened.
3. A species that is gone forever is _____.
4. A species that is close to becoming endangered is _____.

PART III DIRECTIONS : In the puzzle below, find the animals and terms that are listed.

```

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

Extinct	Black bear	Coati	Manatee	Bald Eagle
Ocelot	Jaguarundi	Bison	Red Wolf	Gray Wolf
Fin Whale	Endangered	Blue Whale	Pigeon Passenger	

HINT: Some of the words overlap each other. Some words are diagonal.

Vulnerable, Threatened, Endangered, & Extinct Animals of Texas Answer Sheet

PART II DIRECTIONS : Place these words in the proper definitions.

Vulnerable **Threatened** **Endangered** **Extinct**

1. A species threatened by extinction is considered **Endangered**.
2. **Vulnerable** means if conditions don't change the animal will become threatened.
3. A species that is gone forever is **Extinct**.
4. A species that is close to becoming endangered is **Threatened**.

PART III DIRECTIONS : In the puzzle below, find the animals and terms that are listed.

```

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

Extinct	Black bear	Coati	Manatee	Bald Eagle
Ocelot	Jaguarundi	Bison	Red Wolf	Gray Wolf
Fin Whale	Endangered	Blue Whale	Pigeon	Passenger

HINT: Some of the words overlap each other. Some words are diagonal.

Native American Indians & Animals

People lived in Texas long before Stephen F. Austin and his followers arrived. These people were Native American Indians. Apache, Atapaka, Caddo, Comanche, Kichai, Kiowa. Lipan, Natchez, Tawakoni, Tonkawa, Waco, and Wichita were some of the many tribes that once thrived in Texas.

The Native American Indians insured that the plants, and animals they depended on for their survival would be around for seasons to come, by taking only what they needed. Before, during, and after each hunt, special rituals were performed in order to honor and thank the animals for providing them with food, clothing, and other necessities.

Native American Indians were and still are successful at living as one with nature because they have learned about, understand and respect the balance of nature. Today, many Native American Indians are named after animals, whose qualities they respect and admire. You may have heard of the names "Sitting Bull" and "Crazy Horse".

1. If you were a Native American Indian what animal would you want to be named after? Why?

2. Name two qualities that you admire about the animal you have chosen has.

A Native American “Thanksgiving” Custom

To thank the Great Spirit for a plentiful harvest, Native American Indians hung three ears of corn, and a hollowed-out gourd containing food scraps and seeds outside their teepees for the birds. When the birds came to eat the scraps and seeds, they represented HIM from the heavens accepting the people’s gift.

Students can revive this custom by offering “gifts” to the birds outside the home or classroom. Have students make natural bird feeders to hang in the branches of trees as a way of saying “thank you” for the fall harvest. It is from the fall harvest that you and your family get fruits and vegetables to eat during the many months before the next fruit and vegetable crops can be harvested.

Pine Cone Feeder: Spread peanut butter on all sides of a pine cone and roll it bird seed. Hang it on a tree branch where birds will be able to perch while they are eating.

Dried Fruit Garland: Using a blunt needle and dental floss, string some dried figs, apricots, apples, fresh cranberries and toasted oat cereal. Drape the garland on a tree.



Apples?

Before European settlers arrived in this country, the only type of apple growing anywhere in North America was the bitter crabapple. Birds and other animals liked it okay, but it was too sour for most Native American Indians to eat.

Luckily European settlers brought sweet apples and their seeds with them from Europe. Soon after Native Americans tasted the sweet delicious apples flavor, they started planting apple orchards from the seeds.

Early Pioneers used every part of the apple tree. They used the apples for eating, making juice, cider, vinegar and even for feeding livestock. The wood was used to make furniture, toys and machine parts. If a tree died, they dug up the roots and burned them during the cold winter. Wherever they moved, they always took apple seeds with them.

Try this recipe with an adult at home!

Apple Leather

In Pioneer times, this candy was prepared in the fall, set out in the sun to evaporate, then cut and hung from the kitchen ceiling. It was a favorite sweet treat for school lunches!

1. Core, peel and slice at least six apples. Put in a heavy saucepan with a tight fitting lid. Add 1/4 cup of water to keep the apples from sticking to the bottom.
2. Cook over low heat until they are soft.
3. Let the apples cool. Then using a fork or potato masher, mash them to a desired consistency add a dash of cinnamon.
4. Preheat the oven to 400°. Pour your homemade applesauce into a greased shallow pan. Spread evenly with a spatula.
5. Place the pan in a hot oven and immediately reduce the heat to 180°. Cook for approximately 3 hours (until fruit leather can be peeled from the pan). Cut with scissors to serve.

Time Machine

If you could travel back in time, 100 years ago, what would you change about how the Earth has been cared for?

List items that we have today that our ancestors would not have owned.

Share your thoughts and list of items with the rest of the class. Sit together and discuss your thoughts about life then and now.

Wild Things

Most people don't get a chance to see many wild animals in their natural setting. Many wild animals are nocturnal or just plain shy. Though we may not see them, many wild animals live in or pass through areas close to people (particularly around ponds, lakes and creeks).

Use the list below to match the nocturnal animals (that live here in Texas) to their life size tracks.



Bobcat

Armadillo

Raccoon

Bullfrog

Opossum

Coyote

Wild Things Answer Sheet

Most people don't get a chance to see many wild animals in their natural setting. Many wild animals are nocturnal or just plain shy. Though we may not see them, many wild animals live in or pass through areas close to people (particularly around ponds, lakes and creeks).

Use the list below to match the nocturnal animals (that live here in Texas) to their life size tracks.

Answers: Bobcat-3; Armadillo-6; Raccoon-2; Bullfrog-4; Opossum-5; Coyote-1.



Bobcat

Armadillo

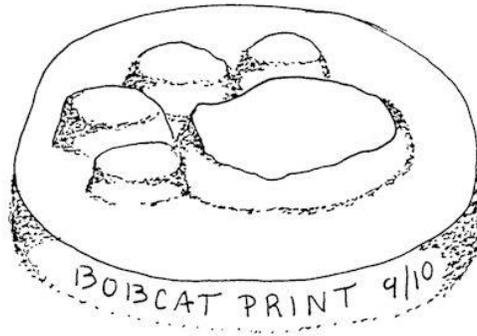
Raccoon

Bullfrog

Opossum

Coyote

Making Tracks



Making plaster casts of wild animal tracks is easy. The most challenging part is finding tracks. Look for tracks early in the morning in damp sand, soft dirt, and mud along streams, near ponds, around lakes and swamps.

Once you have found tracks, choose the deepest, clearest print you can find to make a cast of.

Materials:

Oatmeal or other cardboard container, scissors, bowl, something to stir with, Plaster of Paris, and water.

- 1. Prepare Plaster of Paris, mixing two parts plaster to one part water.**
- 2. Carefully cut a ring of cardboard from the end of the oatmeal container. Set the ring around the print you plan to cast. Careful not to disturb the print. Use the ring as a mold.**
- 3. Pour plaster into the print and let it harden.**
- 4. When the plaster has set, pull up the plaster and gently brush away any sand, dirt or snow that remains.**

Texas Wildscapes

Here are some tips for encouraging wild creatures to visit your backyard or nature site.

1. Conserve water by planting native plant species. Plant native plant species that produce seeds, nuts, and berries to attract wildlife. Fertilize your wildscape with compost made from leaves and grass clippings.

2. Arrange plants in layers to create layers of cover for various urban wildlife. For example: pecan, oak, hickory, or elms could serve as a canopy layer; followed by yaupon, viburnums, or dogwoods as understory. Native grasses, salvias, and vines such as honeysuckle provide food and cover for birds and small mammals.

3. Water is a vital ingredient for any wildscape. Ponds and creeks are great, but pools, bird baths or even an upside-down trash can lid will do. Keep water available year-round for best results.

4. Bird feeders, bird houses, and bat houses are great to supplement natural food sources and tree cavities.

5. Rock walls, rock piles, stacked wood and brush piles provide homes for insects, reptiles, and small mammals.

6. Try to minimize use of chemical pesticides and fertilizers. Always read label closely and follow usage instructions.



Orphaned Wildlife?

Every year in Texas hundreds of young wild animals are unnecessarily picked up by people and taken to wildlife rehabilitators for treatment and raising. A recent study suggested that almost half of the young “orphaned” animals brought to rehabilitators were not orphaned or injured, but mistakenly “kidnapped” from their mothers. The following information can help you avoid this common mistake.

1. Off-spring calling from a nest or den. Parents not present: Many animals avoid the areas where their off-spring are. Such “hiding” behaviors reduce the chance of calling a predators attention to the young. While you may not see the parent, it is often close by and in visual or auditory contact with its off-spring. Patiently observe the area from a distance to see if a parent returns. If you still believe it has abandon, carefully, without touching the nest, place small sticks around it. If after a day the sticks have been disturbed and the off-spring still appears healthy, the nest has probably been visited by a parent.

2. Blown-down nest: If the nest is undamaged and the young birds or eggs are unharmed, replace the nest in a near by tree. If the nest is damaged, it may be placed in a berry basket and may need to be secured to a branch with twine. Birds will not reject their young if they have the “smell” of humans on them. Very few birds have any sense of smell to speak of.

3. Grounded baby bird: It is common for birds to fledge from the nest before they are fully feathered. They will be fed on the ground for a day or two until they are able to fly. If the grounded bird is healthy, you may see a parent tending to it or foraging near by. If the bird is in the street, place it under a near by bush. Never feed or unnecessarily handle or move the chick from the area where it is found.

4. “Abandon” deer fawns: Mother deer typically leave their fawns bedded down while they are away foraging. If the fawn is not crying, covered with fire ants, the eyes are not swollen and there are no visible wounds, do not touch or disturb it.

Remember, a young animals best chance for survival is with it’s natural parents. If after evaluating the situation, an adult determines the animal is orphaned or injured, refer the animal to a local licensed rehabilitator. Do not attempt to treat or raise the animal yourself. If an animal cannot be returned to its parent, a licensed rehabilitator is its next best chance for a successful return to the wild. To contact a licensed rehabilitator in your area, call your local game warden, or TP&W Dept. Information line at 1-800-792-1112.

GLOSSARY

- Adaptations** - Special things about animals that help them live where they do in the world. For example, fish have gills which are an **adaptation** to living under water.
- Camouflage** - Colors or patterns in an animal's fur, feathers, or skin which helps them to hide in their surroundings. A turtle's shell allows it to **camouflage** among rocks.
- Carnivore** - Any animal that eats meat. Cougars eat meat, so they are **carnivores**.
- Diurnal** - To be active during the day. People are usually active in the day and sleep at night. People are **diurnal**.
- Domesticated** - Along time ago people started selectively breeding animals over a period of thousands of years. The people kept only the gentlest animals. Until the animals became used to living with people. This kind of selective breeding is called domestication. Dogs are **domesticated** relatives of the wolf.
- Endangered** - An animal whose numbers have dropped so low that it is in danger of becoming extinct. The coatimundi is an **endangered** species in Texas.
- Environment** - The surroundings an animal lives in. A person's house, town, or community where they live is their **environment**.
- Extinct** - When there are no more of a species left. The dinosaur is **extinct**.
- Habitat habitat** - The surroundings or environment in which an animal or plant lives. The includes all of the other plant life, animals, and physical conditions (such as climate) of the area.
- Habitat destruction** - Everyday, there are more people living on the earth. All of these people need room to live, so they move into places that are already homes to many plants and animals. Forests are cut down, and wild areas are filled with houses and stores. Most of the plants that lived there are destroyed and the animals that once lived there have to leave.
- Herbivore** - An animal that eats plants. Horses eat hay, so they are **herbivores**.
- Insectivore** - Animals that eat mostly bugs. Frogs eat flies, and other bugs, so frogs are **insectivores**.
- Keystone Species** - a species on which other species in an ecosystem largely depend, such that if it were removed the ecosystem would change drastically.

- Marsupial** - A mammal that has a pouch where it's newly born young is fed and sheltered. Kangaroos and opossums are **marsupials**.
- Mimicry** - To closely resemble something else. The Mexican milk snake **mimics** a coral snake.
- Nocturnal** - To be active at night. Owls sleep during the day, and are awake at night. Owls are **nocturnal**.
- Omnivore** - Animals that eat both plants and meat. People eat meat, like hamburgers, but we also eat fruits and vegetables. People are **omnivores**.
- Poacher** - A person that hunts and kills animals that are protected by law. If a **poacher** is caught he will go to jail.
- Predator** - An animal that hunts other animals for food. When an owl hunts for food, such as a mouse, it is a **predator**.
- Prehensile** - To be able to grasp or hold something. People's hands are **prehensile**. Some mammals, like the opossum, have prehensile tails!
- Prey** - An animal that is hunted and caught for food. Mice are **prey** for owls.
- Threatened** - A species that is close to becoming endangered.
- T.P.W.D.** - Stands for **Texas Parks and Wildlife Department**. This is the agency in Texas responsible for protecting the animals of Texas.
- Vulnerable** - If the conditions an animal is living in don't change for the better, that animal's species will become threatened.





Prairie Dog

The largest prairie dog town that ever existed was right here in Texas. It was 100 miles by 250 miles in size, and there was an estimated 400 million prairie dogs. Their **habitat** is the dry, flat grasslands of the great plains.

While many still consider prairie dogs pests, research has shown that they are a **keystone** species. Vacant burrows are used by cottontail rabbits, several species of small rodents and by burrowing owls. There are 150 **species** of animals that benefit from prairie dog towns.

Ferret



The ferret in our programs is a **domestic** ferret. They are a relative of the Black-footed ferret, one of the most **endangered** species of mammals in North America. They once shared the same **habitats** as the prairie dog.

The ferrets long flexible body is an **adaptation** for navigating through tunnels while hunting their primary prey – prairie dogs.

OPOSSUM

Opossums are the only **marsupials** that live in North America! They can give birth to as many as 56 babies at one time. However, the mother can only take care of about 10-13 of those babies. When the babies are big enough to leave the pouch, the mother opossum lets them ride piggy-back where ever they go!

Opossums are **nocturnal omnivores**. Some scientists jokingly call them nature's vacuum cleaners, because they will eat just about anything!



SNAKES

Snakes are **carnivores**. They play a very important role in nature by preying on wild rodents, therefore, controlling the population. Unfortunately, many people misunderstand and fear snakes. There are 68 species of snakes that live in Texas.

An **adaptation** that some snakes have, is the use of **mimicry**. When the Desert King snake feels threatened, it shakes it's tail rapidly in a pile of leaves to mimic the warning sound of a poisonous rattlesnake!

The colors on the back of a Mexican milk snake, mimic the colors on the back of the poisonous Coral snake. These mimicry tactics work because both animals and people want to stay away from what they think could be a poisonous snake!



Owls

There are about 200 species of owls. The two that appear in our programs are both native to Texas. The Barn Owl and the Great Horned Owl.

Owls are **nocturnal** hunters. Their eyes are built to see with very little light. If a human was built like an owl, your eyeballs would be the size of oranges.

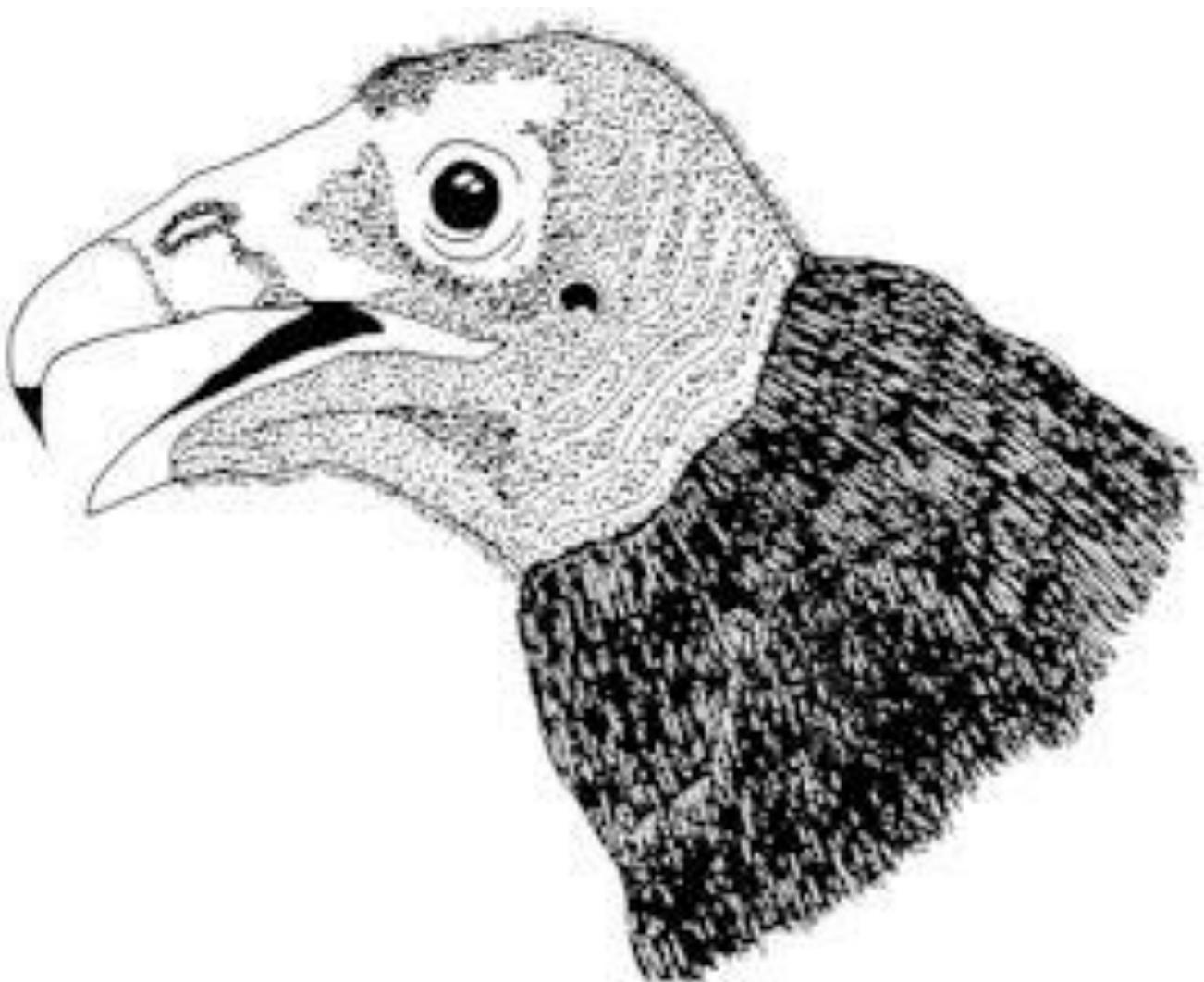
As amazing as their eyesight is, their hearing is just as incredible. Owls have feathers on their face that send sounds into the large holes under the feathers. They can hear a mouse walking through grass from a hundred yards away, that is the length of a football field.



TURKEY VULTURE

This native recycler is often associated with death, because Turkey Vultures eat primarily **carrion**. The Turkey vulture is one of the few birds in the world that have a sense of smell which it uses to find food. Most birds have little sense of smell (so the next time you find a baby bird have an adult put it back in the nest for you, the parents can not smell your scent).

Scavengers like the Turkey vulture fill an important **niche** in the environment because they act as nature's clean up crew. Picking clean the bones of any dead animals they find.





TURKEY VULTURE

Scientific name: *Cathartes aura*

Order: Falconiformes

Family: Cathartidae

Distribution: S. Canada, United States, Mexico and South America

Habitat: Mainly open habitat, occasionally in forests.

Breeding season: Once a year.

Number of young: 1 - 3



Prairie Dog

Scientific name: *Cynomys ludovicianus*.

Order: Rodentia.

Family: Sciuridae.

Distribution: The historic range of the black-tailed prairie dog was from southern Saskatchewan to Chihuahua, Mexico,[4] and included portions of Montana, North Dakota, South Dakota, Wyoming, Colorado, Nebraska, Kansas, Oklahoma, Texas, Arizona, and New Mexico

Habitat: Black-tailed prairie dogs are native to grassland habitats in North America. They inhabit shortgrass prairie, mixed-grass prairie, sagebrush steppe, and desert grassland.

Breeding season: February through April, depending on available resources of food.

Gestation: 34 days. Typically 3 to 5 in a litter, once a year.

Black-footed Ferret

Scientific name: *Cynomys ludovicianus*.

Order: Carnivora

Family: Mustelidae.

Distribution: The historic range largely mirrored that of the black-tailed prairie Dog. They were declared extinct in 1979. In 1981 they found the last 18 in the wild, removed them, and began the black-footed ferret Recovery program. They have Currently, 28 reintroduction sites cover parts of Wyoming, South Dakota, Montana, Arizona, Colorado, Utah, Kansas, New Mexico, Canada and Mexico.

Habitat: Historically native to grassland habitats in North America. They inhabit shortgrass prairie, mixed-grass prairie, sagebrush steppe, and desert grassland.

Breeding season: February through March

Gestation: 42 -45 days. Typically 1 to 5 in a litter, once a year.





OPOSSUM

Scientific name: *Didelphis virginiana*.

Order: Marsupialia.

Family: Didelphidae.

Distribution: United States. Mexico and Central America to Costa Rica.

Habitat: Virtually all situations. Found most frequently in wooded areas.

Breeding season: Spring & Fall

Gestation: 12 to 13 days

Number of young: 7 is the average

Great Horned Owl

Scientific name: *Bubo virginianus*

Order: Strigiformes

Family: Strigidae

Distribution: Most of North America below the arctic circle, Northern parts of South America, and Brazil

Habitat: Found in practically all habitats. From swamps to deserts, to coniferous Forests, suburban neighborhoods.

Breeding season: Once a year.

Number of young: 2 – 3



Barn Owl

Scientific name: *Tyto alba*

Order: Strigiformes

Family: Tytonidae

Distribution: Every continent except for Antarctica.

Habitat: Occupies a wide range of habitats and altitudes, including deserts, grasslands, forests, agricultural fields and urban areas.

Breeding season: Essentially anytime of year, depending upon food supply.

Number of young: Average 2-3



SPECKLED KINGSNAKE

Scientific name: *Lampropeltis holbrooki*

Order: Colubridae

Distribution: Southwestern Illinois to southern Iowa, south to e. Texas, and east to southwestern Alabam

Habitat: Prairies, bushes, forest edges, rocky, wooded areas, and near farms.

Breeding season: April to October

Incubation: 55 to 75 days

Number of young: 6 to 23



Predator vs. Prey

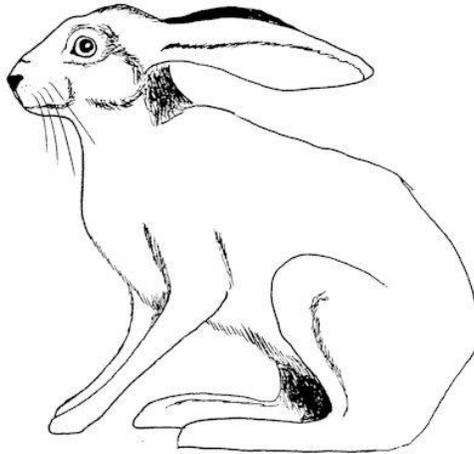
Every animal on earth has something in common. All animals must have food to survive. **Herbivores** are animals that depend on plant matter (like grasses, leaves, fruits, and vegetables) to eat. **Carnivores** depend on catching other animals (**prey**) to eat. **Omnivores** eat both plant and animal matter.

The challenges of getting enough food to eat are quite different for herbivores and carnivores. Herbivores eat food that is stationary (which means it stays put), and is often fairly abundant. The challenge is not in finding the food, but in getting enough to eat while avoiding attack by a **predator**. Carnivores are predators that have to work hard to find and catch prey for a meal. They are not always successful.

In order for a predator animal to live, a prey animal must die. Predation is as important to the prey species as it is to the predator. If there are not enough predators around to keep prey populations down, prey populations grow and grow until there is not enough food for them to survive. If there is not enough food, prey populations will starve to death. Predators hunt the easiest prey they can find, so they weed out the old, the very young, the diseased and injured.

ACTIVITY:

On the following pages provided, list adaptations that help the coyote and jack rabbit survive in the wild. Here's a hint, look at things like the animals eyes, ears, and nose. Write down as many adaptations as you can think of. When everyone runs out of ideas, hold a class discussion and compare notes. The teacher might give you hints to help out if the class is still stumped.

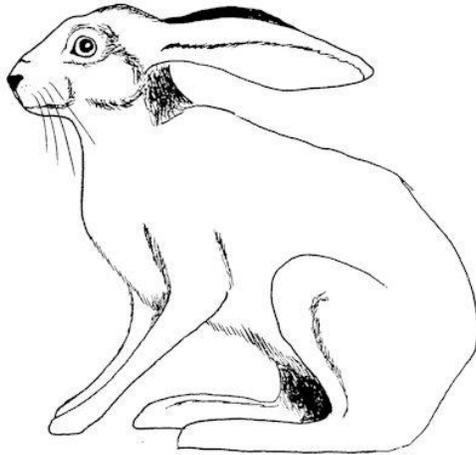


Predator vs. Prey

Animals that are hunted by other animals have adaptations that help them to survive in the wild. List some adaptations that a jack rabbit has below.

- 1.
- 2.
- 3.
- 4.
- 5.

Once a predator is detected, the jack rabbit may remain perfectly still, so as not to call attention to itself. If spotted, the jack rabbit will wait until the last second to burst from its hiding place and zigzag swiftly away hoping to surprise and confuse the predator.



Predator vs. Prey

Animals that are hunted by other animals have adaptations that help them to survive in the wild. List some adaptations that a jack rabbit has below.

1. Large **ears** help detect sounds of an approaching predator.
2. **Eyes** located on the sides of the head helps the jack rabbit to see all around.
3. A good sense of **smell** picks up the odor of an approaching predator.
4. Long powerful **legs** allow the jack rabbit to run and escape quickly.
5. Color of the **fur** allows it to camouflage in surroundings.

Once a predator is detected, the jack rabbit may remain perfectly still, so as not to call attention to itself. If spotted, the jack rabbit will wait until the last second to burst from its hiding place and zigzag swiftly away hoping to surprise and confuse the predator.



Predator vs. Prey

Animals that are hunters constantly struggle to provide food for themselves and their families. List some of the **adaptations** the coyote has to help it catch prey below.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Because many prey species possess such keen senses the coyote may roll in a herbivore's scent (such as a jack rabbit's) in an attempt to cover his own scent; to confuse his prey.



Predator vs. Prey

Animals that are hunters constantly struggle to provide food for themselves and their families. List some of the **adaptations** the coyote has to help it catch prey below.

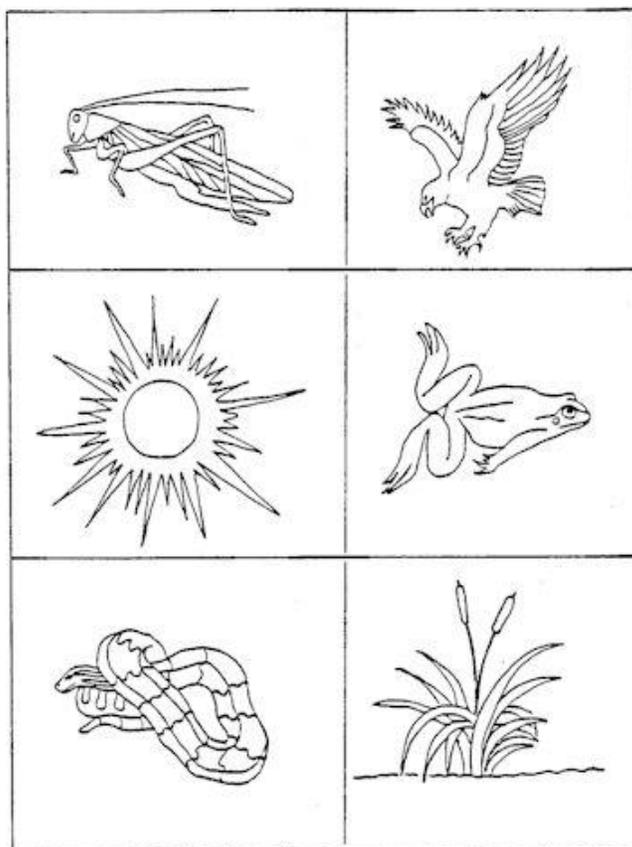
1. Large **ears** help the coyote to detect hidden prey's movement.
2. The coyote has **eyes** in the front of face so it can focus on the prey.
3. A keen sense of **smell** to pick up the scent of hidden prey.
4. Long **legs** allow it to run quickly and pounce on prey.
5. Color of **fur** may conceal coyote from its prey.
6. Sharp **teeth** for catching and eating its prey.

Because many prey species possess such keen senses the coyote may roll in a herbivores scent (such as a jack rabbit's) in an attempt to cover his own scent; to confuse his prey.

Food Chain

Every animal's survival depends on all other forms of life within its **habitat**. There is a natural order in the wild, called the food chain. The removal of one part of the food chain disturbs the balance of nature. For example, in America most of the **predators** (such as wolves and cougars) that once roamed freely, have been removed. As a result **prey** populations (such as deer) have exploded. With no natural predators to keep the herds in check, the deer destroy areas looking for enough food to feed them. Many either die of illness or end up starving to death. If the predators were around to remove the sick, the old, the injured, and the weak the whole herd would not have to suffer. There would be fewer deer and more food to go around.

Number the boxes 1-6 to show the proper sequence of predation in the food chain provided below.



On the back of this page make up your own food chain!

Wild Animals Don't Make Good Pets

Thousands of years ago people started breeding wolves. They kept and bred only the animals they liked. This selective breeding over thousands of years produced what we today call the dog. The dog is still a relative of the wolf, but acts differently because it is domesticated. Wolves are wild.

A lot of people in Texas think if they get a wild animal young enough it will become a pet. This is not true. Wild animals have very different needs from domestic animals. If wild animals are not cared for properly, they may become sick very quickly and die. Someone who expects a wild animal to act like a pet may end up seriously hurt. Most people think of pets as being loyal, affectionate, and well mannered. Remember, it took thousands of years of selective breeding to remove wild instincts from and retrain "man's best friend"!

Domestic vs. Wild

Directions: Draw a line through the wild animals and circle the domestic animals. Some of the species listed below may be considered domestic in some areas where it is found, and wild in others. In that case, put a star next to that species.

llama

house cat

dog

fox

mole

snake

goat

mule

parakeet

bobcat

turtle

monkey

cougar

water buffalo

hawk

Now list the domestic animals below and explain why each species was domesticated to live around people. For companionship, work, or pleasure .

Domestic Vs. Wild Answer Sheet

Directions: Draw a line through the wild animals and circle the domestic animals. Some of the species listed below may be considered domestic in some areas where it is found, and wild in others. In that case, put a star next to that species.

llama *

house cat

dog

~~fox~~

~~mole~~

~~snake~~

goat

mule

parakeet *

~~bobcat~~

~~turtle~~

~~monkey~~

~~cougar~~

water buffalo *

~~hawk~~

Now list the domestic animals below and explain why each species was domesticated to live around people. For companionship, work, or pleasure .

Domestic vs. Wild Answer sheet

Wild llamas live in the mountain areas of South America. **Domesticated llamas** have lived and worked with people in much the same way camels have for thousands of years. The **house cat** is a **domestic** animal. The house cat's wild relatives are in a family called Felids. Foxes are wild animals. **Mules** are **domestic** hoof stock. People sometimes keep snakes as "pets", and farmers may use them for rodent control, but they are not domestic animals. Moles are wild Insectivores. In some countries wild monkeys are used to help people pick fruit from trees, however, they are not considered domestic. In many countries Birds of Prey are used in the sport of Falconry, even so, Birds of Prey are wild animals. Wild **goats** may be found in the mountains of many countries, but, many more goats may be found in **domesticated herds** living with people. Cougars are wild animals. Although many people in many countries have kept parrots for thousands of years, people have not been successful at breeding the wild instincts out of parrots. **Chickens** are **domestic birds**. **Dogs** are **domestic Canids**. **Water Buffalo** are kept as **domestic hoof stock** throughout Asia. Although people in Africa and India train and work with elephants on a daily basis, they cannot be considered domestic animals because they have not been selectively bred. In Ancient Egypt cheetahs were used by Kings and Pharaohs for hunting, much like many people use dogs for hunting today the difference being that dogs are domestic, cheetahs are wild. Dolphins are wild marine mammals that are very social. Many dolphins are trained and used to aid the U.S. Navy in certain underwater procedures still today. **Fish** that are "Farm raised" are considered **domestic**.

What Makes A Good Pet?

Directions: Listed below are several reasons why **wild animals never make good “pets”**. Write a sentence describing the positive aspects of keeping most domestic animals as opposed to wild ones.

1. Wild animals will scratch, bite, and try to run away when they are startled or frightened.
Domestic animals...
2. Wild animals are easily frightened by new things and unfamiliar people.
Domestic are...
3. Wild animals go to the bathroom where ever and when ever they want.
Domestic animals...
4. Wild animals play roughly and can easily tear a person’s skin and destroy their property.
Domestic animals...
5. Wild animals need special medical care. It can be hard to find a qualified vet.
Domestic animals...
6. Wild animals must be kept in large expensive outdoor enclosures with a lock on the door.
Domestic animals...

7. Wild animals are unpredictable. You must never trust a wild animal.

Domestic animals...

8. Wild animals require proper food that can be very expensive to buy, and hard to find.

Domestic animals...

9. Wild animals are illegal to keep in most cities.

Domestic animals...

10. Wild animals can be very dangerous to themselves and to people when they get loose!

Domestic animals...

People who love and work with wild animals learn how to provide proper care for them and expect the unexpected. Injuries are not uncommon when working with wild and exotic animals - even for people who have years of experience!

Additional Resources

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