

The Zoo and You

Leader facilitated activities for older scouts

Questions and activities for Cadets, Juniors, Seniors,
Tenderfoot Second Class, First Class, Star, Life, Eagle

The following questions and activities are for Leaders and their troops to do either before or after your Zoo trip.

1. Plan a trip to the NC Zoo.
 - How will you get there?
 - How much money will you need?
 - What type of clothing will you wear?
 - Do you plan to take a meal with you? If so, what kind of food?
2. Complete the *Wildlife Observations* lesson for students (see below).
3. Have a discussion on cages vs. natural habitat exhibits. All animals require food, shelter, space, water, and sometimes companionship. The Zoo must take into account the needs of each species when designing and building the exhibits. Remember that a good home for a person is not usually a good habitat for an animal!
4. Complete a project to benefit the environment. Be creative! We are giving you a few examples, but try to come up with some of your own.
 - Plant a wildlife attraction garden
 - Plant one, or several, trees
 - Plan and conduct a recycling project
 - Create a bird feeder station
 - Adopt a stream
5. Discover the history of zoos and their purposes from their beginnings to present day.
6. Design your own zoo and include a list of animals and why you selected these animals. This could be a troop activity with each Scout designing a certain area. Build a model of one of the exhibits in the zoo.
7. Make a list of endangered animals and plants. What has caused some animals and plants to become endangered? Identify animals within the Zoo that are endangered species. What are some things you can do to help make the Earth a healthier place for all living things?
8. Construct and stock an aquarium or make a terrarium.
9. Look for some characteristics of plants that may help them survive in the native habitat. Examine (with your eyes!) plants within the Sonora Desert, RJ Reynolds Forest Aviary and the native woodlands between these two exhibits for these adaptations. Some adaptations you might see would include: thorns, waxy coating on leaves, rough or thick bark, large or small leaves, nuts, seeds, fruits or berries, fragrant blooms, growing on another plant, fuzz or “hair” on the leaves.

10. Research and learn about the Association of Zoos and Aquariums (AZA) and the American Association of Zoo Keepers (AAZK) organizations. Discuss their functions in the zoo world.
11. Discuss how the Zoo might serve the community and state in the future.
12. Create and present a puppet show or play about how children should act at the Zoo; for example, not feeding the animals, showing respect by not teasing the animals or crossing barriers, and refraining from touching plants and birds in the Aviary.
13. Prepare a short story or poem about three of your favorite zoo animals. Share these writings with the troop at a meeting or in your newsletter.
14. Bring your camera to the Zoo. Make a collage of the different areas within the Zoo or classifications of animals. Have a photography contest for the best pictures of Zoo plants and animals.
15. Explore careers available at a zoo – such as zoo director, education curator, veterinarian, animal keeper, horticulturist, exhibit designer, etc.

Scout's signature: _____

Leader's signature: _____

Date patch completed: _____

Wildlife Observations

OBJECTIVES *correlated with the NC Competency-Based Curriculum*

Students will:

- demonstrate the ability to observe
- use senses to investigate the natural world
- investigate the environmental adaptations of living organisms
- demonstrate the ability to communicate
- demonstrate the ability to infer
- develop an understanding of the need for conservation, preservation and wise use of natural resources

Materials:

- Wildlife Observation work sheet - one per student
- chart paper - approximately five sheets per team
- pictures of animals that may be seen at the Zoo (optional)
- access to reference materials such as encyclopedias, *ZooBooks*, *Ranger Rick* magazines, other nature books and/or videos

BEFORE VISITING THE ZOO

1. Inform students that it is possible to learn a lot about plants and animals by observing them very carefully. Scientists in the field spend many, many hours watching animals and recording what they see.
2. Divide students into cooperative learning teams, with four per group.
3. Explain that teams will be making and recording observations of at least five Zoo animals. Each team may choose the animals to be observed or you may assign them. A partial listing of the Zoo's collection is in this packet. Keep in mind that occasionally some animals may not be visible or on exhibit.
4. Each team needs an "ears observer", an "eyes observer", a "feet and toes observer", and a "body coverings observer." Everyone in the group should watch for postures, expressions, noises and other signals or behaviors that might indicate "communication techniques." Observations should also be recorded of the animals' Zoo habitats. Explain that the Zoo's naturalistic exhibits look very much like the animals native habitats.
5. Urge students to use their senses when making observations. Notice the smells and sounds as well as the sights. Encourage use of descriptive words when recording observations. Sketching and labeling are also good recording techniques. Point out that some exhibit signs provide accurate details of animal adaptations.
6. Instruct students to bring observation sheets back to class for use in the follow up activity.

7 hear and 7 forget.

7 see and 7 remember.

7 do and 7 understand.

- Chinese Proverb



AT THE ZOO

1. Each student will need one observation sheet and a pencil for recording observations.
2. Students should stay with their cooperative learning team while making observations.
3. Chaperones may provide guidance and encouragement as needed.

AFTER VISITING THE ZOO

1. Facilitate a discussion about the things animals need in order to survive and be healthy. How do animals go about getting those things? Do they use their feet, eyes and ears? How might their body coverings help? Does communication play a role in survival?
2. Each team should select an animal they observed and share their observations with one another. It may be helpful to have pictures available of the Zoo animals.
3. On chart paper, record the species, describe the Zoo habitat, eyes, ears, feet, body coverings and communication techniques in a format similar to Fig. 1. (*see answer sheet*). Teams should discuss and record ways each adaptation might help the animal get the things it needs in order to survive. Encourage all team members to contribute ideas. At this point, don't worry about accuracy. Making inferences is the goal. Repeat this procedure with all animals observed.
4. Allow time for each team to share observation charts with the class. Encourage class discussion about ways the adaptations might help with survival. Post the charts around the room. If any teams observed the same animals, have them compare observations and inferences.
5. Use reference materials such as encyclopedias, *ZooBooks*, *Ranger Rick* magazines and other nature books and/or videos to confirm the accuracy of students' ideas. Have students place check marks beside those that can be verified. Cross through the ideas that are not accurate. Place question marks beside the ones for which students can not find references. This search for verification can be an ongoing class project. Students should begin to see some common relationships between adaptations and ways animals survive in their particular habitats.



6. Facilitate a discussion by asking the following: If certain adaptations are suitable to particular environments what might happen if an animals habitat is changed or destroyed? Do humans change and/or destroy animals' habitats? In what ways? As human populations increase what does that mean in terms of sharing the Earth's resources with other animals and plants?

7. Can you think of things we can do to help the Earth be a healthier place for all living things?

Make a Difference

Turn off the water when brushing your teeth.

Begin recycling at home.

Think globally and act locally.

Turn off lights in rooms not being used.

Take your lunch to school in reusable containers.

Wildlife Observation Form

Animal	Description of Habitat	Individual Observation Assignment

- Check One:**
- Ears
 - Eyes
 - Feet & Toes
 - Body Coverings
 - Communication Techniques
(postures, expressions, noises,
other signals/behaviors)

ANSWER KEY Wildlife Observations

AFTER VISITING THE ZOO

1. Animals need clean air, water, food, shelter and space. Among other things, their eyes are used to locate food, water, shelter and each other. Their nose enables them to breath and may help some animals locate food and water as well as detect territorial boundaries. Eyes and ears also help to detect predators. Feet enable animals to move from place to place in search of food and water and to escape from predators. Their body covering provides protection and warmth and often serves as camouflage. Animals may communicate with one another to warn of danger, signal that food has been located and in courtship rituals.

3. Fig 1.

Species: Description of Zoo habitat:	
Description of Eyes:	How Adaptation Might Help Animal Survive:
Ears:	
Feet & Toes:	
Body Coverings:	
Communication Techniques:	

5. Some common relationships may be: the coloration of an animal's body often helps it blend in to its surroundings; sharp teeth and strong muscular feet with claws help some predators catch and hold their prey; eyes located on the sides of the head provide a wide field of vision for prey animals; flippers, webbed feet and streamlined bodies enable animals to swim quickly through water; oversized ears help animals keep cool in hot environments; thick fur and blubber provide warmth in cold environments.

6. If an animal's habitat is changed or destroyed it must adapt to new conditions or it may be unable to survive. Humans change or destroy habitats by clearing land in order to build roads, houses, offices, factories, farms, shopping centers and other development. Drilling for oil and other minerals alters habitats. Air, soil and water pollution affect habitats as well. When people disrupt habitats they not only destroy the natural homes of plants and animals, they upset a delicate system in which all living things depend very much on each other.

As human populations increase, more people use more trees, energy, food and water. That leaves less resources for other species.

7. A few of the many things we can do to help the environment are:

- conserve the natural resources that we share with all living things by using only what we really need
- recycle and reuse products made from natural resources, such as paper, aluminum, glass and plastic
- reduce the amount of trash that we produce by not purchasing things we don't really need and by avoiding over-packaged and non-recyclable products
- carpool, walk and ride bicycles to save energy and decrease pollution
- compost rather than sending food and yard wastes to landfills
- decrease the use of pesticides and other harmful chemicals
- dispose of trash properly so it does not end up in animals' habitats
- put thought and planning into how we use and care for natural resources in the future

Animal Talk

ADAPTATION: Inherited feature or behavior that improves an organism's chance of survival in a particular habitat. (e.g., The long bill of the scarlet ibis allows it to probe in mud for small organisms to eat.)

AMPHIBIAN: A group of cold-blooded vertebrates, such as frogs, toads, and salamanders, that live on land and in the water.

AQUATIC: Living in, on, or near water; having a water habitat

ARBOREAL: Adapted for living in trees. (e.g., opossum, many monkeys, most birds)

BEHAVIOR: An individual's or species' response to a stimulus

BIPEDAL: Having two feet or walking on two feet

BROWSE: To eat shoots, twigs, and leaves of trees and shrubs (such as giraffe)

CAMOUFLAGE: Coloration that enables an animal to blend in with its surroundings

CARNIVORE: An animal that eats the flesh of other animals (e.g., lion, bobcat, cougar)

CLASSIFICATION: Grouping organisms by characteristics into certain categories

COEXIST: To live in harmony with one another

CONSERVATION: The protection and preservation of animals, plants, and natural resources

CREPUSCULAR: Active at dawn or dusk (e.g., lion, dik-dik)

DIURNAL: Active during the day (e.g., Cape hunting dog, meerkat)

DOMESTIC: Animals that have been bred over many generations for use by people

ECOLOGY: The scientific study of relationships between organisms and their environment

ECOSYSTEM: A system in which organisms interact in their environment

ENDANGERED SPECIES: A species that is in danger of extinction throughout all or a portion of its range (e.g., polar bear, gorilla, chimpanzee)

ENVIRONMENT: All external physical biological factors that act upon an animal

EXTINCT: A species no longer living (e.g., Carolina parakeet, dodo)

EXOTIC: Animals from another country

FLOCK: A group of animals herded together

GESTATION: Period of pregnancy (e.g., human gestation is 9 months.)

GRAZE: Animals that feed on grasses and other terrestrial plants, not on leaves or bark from trees and shrubs

GREGARIOUS: Living in a large group

HABITAT: The particular part of the environment where an animal lives. For example, the habitat of an earthworm is moist soil.

HERBIVORE: An animal that feeds on plant material (e.g., impala, giraffe, zebra)

INTERDEPENDENCE: The interrelationship of organisms

INVERTEBRATE: An animal that doesn't have a backbone (mollusks, insects, spiders, starfish).

LITTER: Mammal offspring born at the same time

MAMMAL: A group of warm-blooded vertebrates that nourishes its young with milk and has a body covering of hair

MIGRATIONS: Regular, usually annual, movements from one location to another

MOLT: To shed hair or feathers periodically

NICHE: The role that an animal or plant has in its habitat

NOCTURNAL: Active at night

OMNIVORE: An animal that feeds on animals and plants

ORGANISM: Any living thing

PLUMAGE: The protective covering (feathers) of a bird

PREDATOR: An animal that kills and eats other animals for food

PREHENSILE: Adapted for grasping or holding, as a giraffe's tongue or a human's hand

PREY: An animal hunted or killed for food

PRIDE: A group of lions

REPTILE: The group of cold-blooded animals that includes snakes, lizards, turtles, and crocodiles; These animals breathe with lungs and are covered with scales

SCAVENGER: An animal that feeds on the remains of dead animals

SOCIAL ANIMAL: Animals that live in organized groups

SPECIES: Animals that are capable of reproducing

TERRESTRIAL: Pertaining to the earth; living on the ground, not in water or trees

THREATENED: Species likely to become endangered if conditions do not change

TROOP: Term used for a group of some of the primate species such as baboons and chimpanzees

VERTEBRATE: Animal that has a backbone such as fish, amphibians, reptiles, birds, and mammals