

Diet

An animal's diet is made up of six nutrients which work together to ensure survival.

The first of these nutrients is water. *Water* is very important because without it, animals will often not intake food, which gives the animal the other five nutrients it needs to live. *Carbohydrates* are important nutrients, because they serve as a source of energy to the animal, particularly herbivores. Herbivores obtain most of their carbohydrates from cellulose, starch, and sugars obtained from the plants they eat. *Fats* are full of energy and often improves the taste of foods for animals. It also provides the animals with essential fatty acids. Fats are more important in carnivore diets. *Proteins and amino acids* are important in the construction of tissues and muscles in the animal body. Proteins are also important components of animal hooves, horns, and antlers. *Minerals* like calcium, phosphorus, and iron are all essential to the general health of the animal. *Vitamins* are important to a healthy animal life as well.

An animal's health can be compromised if all its dietary requirements are not met.

Animals need all of the six nutrients as a part of their daily dietary requirements. The amount of each nutrient that the animal needs is species specific. If any of the six nutrients are not present to the animal's specific requirement, the animal may experience poor reproductive rate, a weakened immune system, or even death. Animals get many of their nutrients like carbohydrates, fats, proteins and amino acids, and vitamins through their diet. Water can be found both in the diet and in the animal's habitat.

Animals can be classified as herbivores, omnivores, or carnivores.

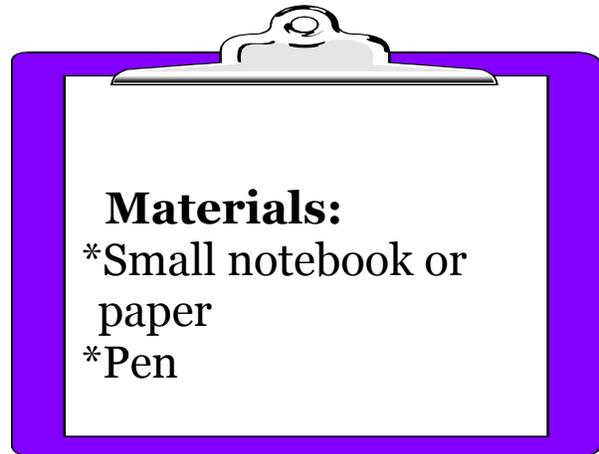
Herbivores are animals which have a diet that consists mainly of plant material. They frequently have a hard palate and lack top incisors. They use their palate and bottom teeth to grind up their food. Herbivores are animals like giraffes, gazelles, and deer. Carnivores have sharp teeth with which to tear flesh and meat, their primary diet. Carnivores are animals like lions and tigers. Omnivores are animals whose diet consist of both plant and animal matter. Most humans are omnivores.

Giraffe's Pantry

Objective: The students will evaluate how the animals at Global Wildlife Center get the six nutrient requirements needed daily for their survival. (Water, carbohydrates, protein, fats, vitamins, and minerals.)

Introduction:

The students will observe on tour how different animals get their six nutrient requirements. Close attention should be paid to facts their tour guide gives them regarding species specific diet and eating



habits. The students should be able to differentiate that although most of the animals at Global Wildlife are herbivores, they obtain the six nutrients needed in their diet by different ways.

Activity:

1. The students should bring a notebook on tour take notes as to what natural vegetation the animals are eating when they observe them.
Example: Camels—leaves and grasses
Giraffes— leaves
Blackbuck—grasses
2. The students should also notice as they are on tour damages made to the vegetation and trees by the animals, and should question their tour guide as to what type of animal might have been feeding on it. (Ex: bark missing from trees is part of the camel's diet, the bottom branches of the trees are stripped from the giraffes foraging for leaves)
3. When the tour passes a lake or pond, tell the students to note what type of animals are drinking from the pond. How do the animals at Global Wildlife Center get their water? Water is a daily requirement for all animals, but some animals get their water in different ways. For example, the camel gets most of the water it needs from eating leaves and grasses that have a high water content. Scimitar horned oryx migrate with rainstorms, because they get all of the water they need by foraging when there is moisture on the grass. Other animals like the deer prefer to get the water they need by drinking from the ponds.
4. The animals at Global Wildlife get all essential nutrients except water from the Herbivore diet specially formulated for them by Nutrena Feeds and our veterinarian. Find out from your tour guide which animals are supplement fed, or spot fed extra portions of the herbivore diet. What does this mean, and why are some animals supplement fed and others not?
5. Have the students write a short paper about the different eating and drinking habits of at least three species of animals at Global Wildlife Center.

Closure:

Have the students create a “shopping list” for three different species at Global Wildlife Center that fulfills all nutrient requirements. Pick five different things from their pantry at home, and list which nutrient requirement it fills in a human diet.

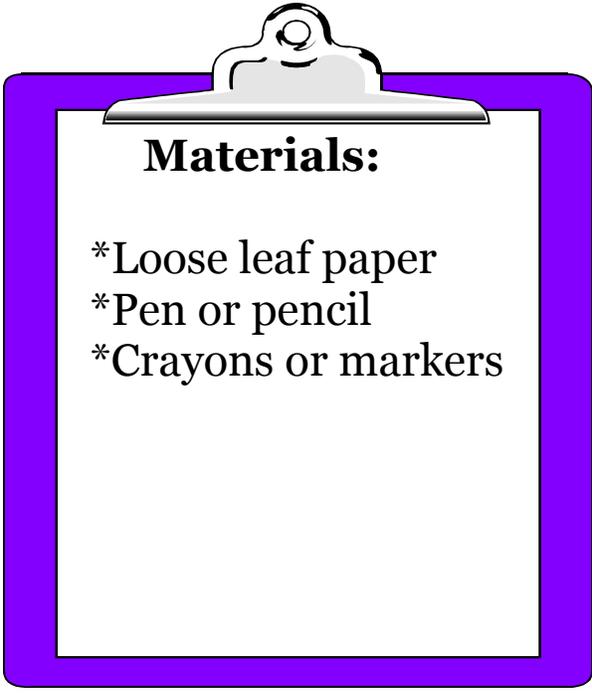
Food Web

Objective: The students will identify the components and illustrate a food chain found at Global Wildlife Center.

Introduction:

Before the fieldtrip to Global Wildlife Center, the teacher will explain and give examples of food chains found in nature, and stress the importance of each link in the food chain.

Even though Global Wildlife Center has no predators, there are still many examples of the food chain to be found at the preserve.



Materials:

- *Loose leaf paper
- *Pen or pencil
- *Crayons or markers

Activity:

1. Have the students make a list of every animal, insect, bird, reptile, and fish they see at Global Wildlife Center. Ask the students to pay particular attention to the forms of life they see at the Visitor Center while waiting for their tour. (Spiders, flies, bats, sparrows, egrets, blue herons, turtles, coy, catfish, deer are some examples)
2. For each life form that they see, ask them to list what type of food it eats.
3. After making their lists, have the students arrange the components to create food chains with the different plants and animals found at Global Wildlife Center. At least three items should be found in each chain, but the more components the better.
Examples: **water insect-catfish-turtle** or **fly-spider-bat** or **grass-cow-fly-cattle egret** or **fly-spider-frog-rhea** or **fly-spider-sparrow-hawk**
3. Global Wildlife Center does not have any carnivores who prey on the hooved animals at the wildlife preserve, but the students can brainstorm or take notes from the tour guide as to what predators they would have in the wild and incorporate them into their food chains.
4. Have the students draw and color a picture of each component of their food chain and draw arrows to illustrate which direction the food chain flows.

Closure:

Ask the students what would happen if any one of those components in their food chain were to become extinct? What would most likely happen to every animal in their food chain?

Habitat

Habitat is the environment in which an animal lives.

All animals have a habitat in which they live. An animal's niche is the specific area in the habitat which the animal occupies. The habitat can be compared to a neighborhood, while the niche can be compared to your house.

There are many different types of habitats in which animals live.

Although there are many different types of habitats in which animals live, all habitats must have some components. Shelter, space, climate, terrain, food, and water are all important parts of an animal's habitat and its ability to thrive in it. All of these factors will change with each different habitat.

Grasslands are found on all but one continent.

Grasslands are great open areas of land which are covered with grasses ranging in height from two to five feet. All continents except for Antarctica have grassland habitats. Grasslands have very little shrubbery or trees, and receive from ten to thirty inches of rainfall per year. They are also called prairies and steppes. The American Midwest, the Pampas in South America, and the Serengeti in Africa are all examples of grassland habitats. Because of the wide open spaces, large herds of herbivorous mammals are commonly found in grasslands. Some of these are zebras, elephants, bison, prairie dogs, etc.

Desert habitats are some of the harshest places to live on earth.

Desert habitats are very hard to live in. Deserts can be both hot and cold and are climates in which there is less than ten inches of rainfall per year. While deserts can be over 100 F during the day, the temperatures can drop below 50 F at night, so animals living in the desert habitat must cope with both. The terrain is typically sandy or gravelly, but can be downright rocky. Deserts are found all over the world as well. There is the Arabian desert, the Kalahari in southwest Africa, the Mojave in North America, the Sahara in northern Africa, and the Thar in India. Australia has several deserts also. Animals like bighorn sheep, coyotes, addax antelope, kangaroos, camels, and springbok live in desert habitats.

Temperate deciduous forest habitats have four complete seasons.

Temperate deciduous forests are found in Canada, Russia, Europe, China, Japan, and the eastern United States. The average temperature is 50 F, and the forests usually receive around thirty to sixty inches of rainfall per year. Temperate forests normally have both hot summers and cold winters. In the winter, the rainfall is seen as snow. Trees found in the temperate deciduous forests drop their leaves in the fall in order to protect the tree from the cold. The drop in temperature signals to the tree to stop producing chlorophyll, which makes the leaves green, and the other colors, like yellow, red, and purple show through. Animals like raccoons, gray squirrels, turkeys, and quail live in temperate deciduous forests.

The tundra habitat is found in the northern hemisphere of Canada, Europe, and Asia.

The tundra biome covers one fifth of the earth's surface. It is characterized by extreme cold and a layer of permafrost, or frozen soil. Annual precipitation is normally less than ten inches. The animals adapted to life there either hibernate in the winter, or have developed a thick layer of fur to protect them from the cold temperatures. The habitat is characterized by small trees that are found around streams and lakes. Animals that live in the tundra are polar bears, arctic foxes, caribou.

The taiga forests are the largest biome found on earth.

The taiga stretches across Canada, Europe, and Asia and exists in the Rocky Mountains in North America. Winters in the taiga are very cold and snowy, with the temperature below freezing for over six months throughout the year. Summers are frequently warm and rainy. Many evergreens are found there, growing from the ten-thirty inches of precipitation yearly. Food is scarce in the wintertime, and many taiga animals go south for the winter or hibernate. Some animals found in the taiga are the moose, Canadian goose, red fox, and weasel.

Rainforest habitats are home to half of the plant and animal species found on earth.

There are two types of rainforests, tropical and temperate. Rainforests are located near the equator, and are found in southeast Asia, Latin America, the Pacific Islands, West Africa, and the Pacific coast of North America. The rainforests are lush, rich in plant life, and receive anywhere from 80-400 inches of rainfall per year. The mean temperatures are very warm, from 70-85 F. Because of the rainforest's unique environment, the animals and plants found there are very specialized. The rainforest is a carefully balanced ecosystem that is in danger of vanishing if steps are not taken to protect it.

Where are you from?

Objective: The students will choose an animal from Global Wildlife Center and identify its home continent and where it is found on the globe.

Introduction:

The students will learn about geography by studying the seven continents and by placing animals in their habitat. They will research the characteristics of the continents and also notice that there are no animals found at Global Wildlife Center that come from Antarctica.

Materials:

- *Large world map or globe
- *Pens or pencils
- *Markers or crayons
- *Library access
- *Handouts

Activity:

1. Refer to the animal glossary and choose one animal for every student (if possible) and give them the animal's name to research. Have the students research the animal and take notes on its physical characteristics, habitat, and where it comes from. After the students are finished with their research, help them to identify the continent that the animal lives in.
2. After the students have identified which continent is home to their Global Wildlife Center animal (North America, South America, Australia, Africa, Europe, or Asia), ask them to find other classmates with the same continent, and divide into groups accordingly.
3. Have the students return to the library and research their animal's continent. They should draw a picture of it, be able to identify it on the world map in front of the class, and tell about the continent's terrain, climate, population, and five different countries (if applicable) located on them.
4. Instruct the students to complete the accompanying handout on their animal.
5. Have the group members address the class in presentation form about their continent and point out the continent on the world map or globe. Ask them to write the animals found on their continent on the chalkboard.
6. After the students give their presentations and all animals and homeland continents are written on the board, ask the students to number a sheet of paper 1-10. Pass out the map handout. The teacher will call out ten animals for the students to write down on their paper. Ask them to use the map, and place the corresponding continent letter next to the animals. They should be able to use the board as a reference. The teacher may collect and grade the paper if he/she wishes.

Closure:

Ask the students to try and find their animal while they are touring at Global Wildlife Center. Does it look the same as it did in pictures?

Where are you from?



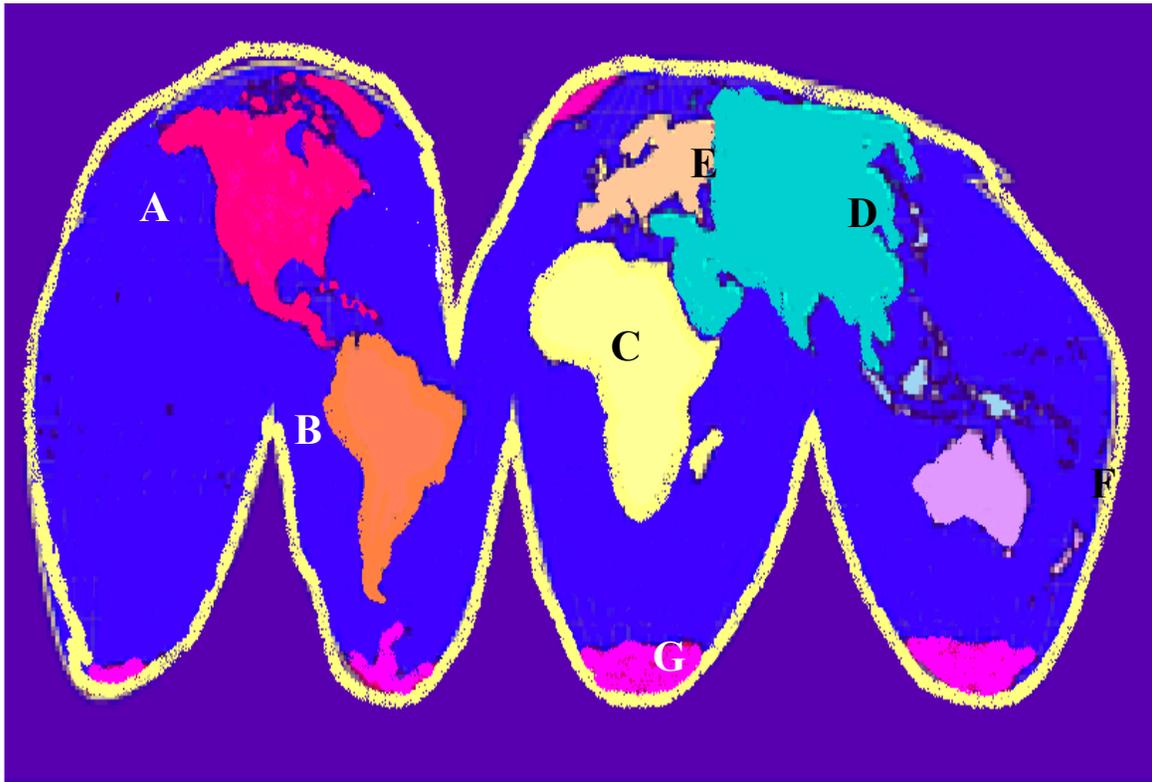
Animal Name: _____

Animal Homeland: _____

Draw a picture of your
Global Wildlife Center animal below!

Where are you from?

Number a sheet of paper 1-10. As your teacher calls out a Global Wildlife Center animal's name, write it next to the number. Then, looking on the board and below, match the animal's homeland continent letter with the animal.



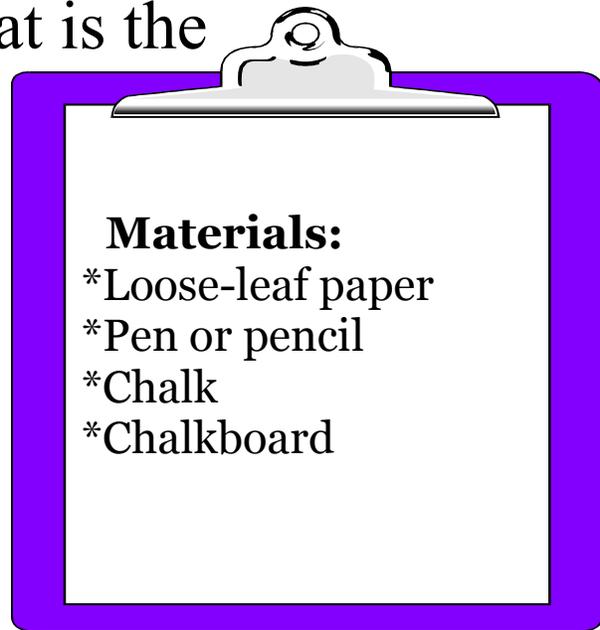
A zoo, or not a zoo, that is the question!

Objective: The students will understand the difference between a wildlife park habitat like Global Wildlife Center and a zoo habitat.

Introduction:

In many ways, Global Wildlife Center is a unique home for animals. Most importantly, the Global habitat is a natural one where animals are allowed to roam freely.

The students will compare and contrast Global Wildlife Center to a zoo they have visited.



Activity:

1. Ask the students to name animals at a zoo and list them under the heading "ZOO" on the chalkboard. Do the same with animals at "GLOBAL WILDLIFE CENTER." Now ask them to name two verb phrases that apply to each animal. Examples: giraffes-eat leaves from trees, zebra-runs really fast, lion-eats meat, kangaroo-hops great distances, penguin-swims in icy water, deer-runs in woods.
2. Analyze the verb phrases they name. Give them the previous examples. Are the animals able to do these activities in a zoo? Why or why not? Why are they able to do some things in a wildlife park that they cannot do in a zoo?
3. At Global Wildlife Center, animals have plenty of room to roam. They can run across wide open fields, they can eat plenty of grass, they can cool off in a natural pond, they can even eat leaves from trees. Most importantly, animals at Global Wildlife Center are not confined to any small area. They are able to go wherever they want to. This also means they do not have to compete with other animals in an exhibit for food, water, or shelter. They can get all these things naturally from the trees, vegetation, and ponds. They don't have to worry about "bully animals."
4. Ask the students to give reasons why Global Wildlife Center cannot have some animals found in zoos. Example: crocodile, lion, penguin, monkey, bear. Global Wildlife Center cannot have these animals for one of the following reasons: they will kill some of our endangered wildlife, they might hurt one of our visitors, they can climb our fence (since Global Wildlife has no cages).
5. Ask the student to tell you which type of facility would have more different types of animals-a zoo or a wildlife park. Have the students write an essay pretending they are an animal of their choice. Have them tell in the story where they live and whether they would prefer living in a zoo or a wildlife park and why. Ask the students to incorporate many of the animal's daily activities in the story.

Closure:

Share the stories with the staff of Global Wildlife Center.

Home on the Range

Objective: The students will understand and discuss the distinguishing physical characteristics of a grassland habitat.

Introduction:

The students will construct a grassland habitat of their own and better understand the habitat of the grasslands, where most of the animals at Global Wildlife Center live.



Activity:

1. Go over the different biomes found in the introduction to Habitat with the students. Especially emphasize the grassland biome.
2. Ask the students to look through National Geographics or Ranger Ricks in the library. They should find two pictures of animals in their native grassland habitats. Ask the students to bring the pictures on an assigned day. Show all the pictures to the class. Have the students brain-storm as to the physical characteristics of the grasslands. Examples: short grasses, tall grasses, open plains, flat lands, few and scattered trees. Ask the students to brainstorm as to where these habitats would be found. Answer: North America, South Africa, Asia. Ask the students for two North American animals found in grasslands. Possible answers: bison, prairie dogs, pronghorn antelope.
3. Ask the students to locate these places on a world map.
4. Read to the students the song “Home on the Range” found on the following page. The teacher may want to give everyone a copy.
5. Ask the students to write down any clues that they may find in the song “Home on the Range” as to the characteristics of a grassland. What do some of the lyrics refer to? Examples: **grassland fauna**- “where the buffalo roam, where the deer and the antelope play” **weather**- “skies are not cloudy all day” (hardly ever rains) **terrain**- “bright diamond sand flows leisurely down the stream” **climate**- “the breezes so balmy and light” **terrain**- “wildflowers in this dear land of ours.”

Closure:

Ask the children after the tour whether they think the Global Wildlife Center terrain is like that of a grassland and why.

Home on the Range



Oh, give me a home

Where the buffalo roam...

Where the deer and the antelope play;
Where seldom is heard a discouraging word
And the skies are not cloudy all day

Home, home on the range
Where the deer and the antelope play
Where seldom is heard a discouraging word
And the skies are not cloudy all day.

How often at night when the heavens are bright
With the lights from the glittering stars
Have I stood there amazed and asked as I gazed
If their glory exceeds that of ours.

CHORUS

Oh, give me a land where the bright diamond sand
Flows leisurely down the stream;
There the graceful, white swan goes gliding along
Like a maid in a heavenly dream.

CHORUS

Where the air is so pure, the zephyrs so free,
The breezes so balmy and light,
That I would not exchange my home on the range
For all of the cities so bright.

CHORUS

Oh, I love those wild flowers in this dear land of ours,
The curlew I love to hear scream,
And I love the white rocks and the antelope flocks
That graze on the mountain tops green.

