



Food Chain Fun – Student Worksheet

Name: _____

The four basic needs that every living thing requires are F _____, W _____, S _____ and S _____

A _____ is a producer; it receives its energy from the sun.

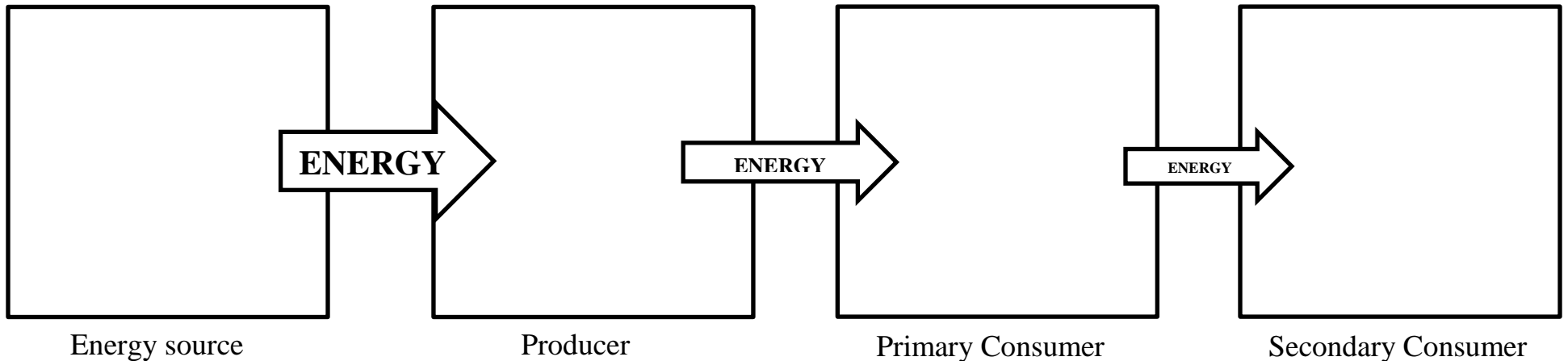
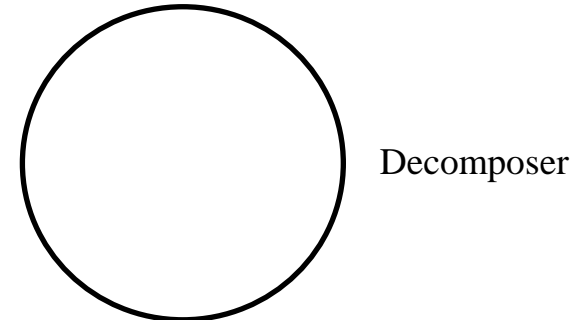
An animal that receives its energy from plants is a primary consumer, or _____.

A carnivore or omnivore that receives energy by eating primary consumers is a _____ consumer.

Some examples of secondary consumers are: _____.

A _____ is important because it breaks down dead animals and returns nutrients to the soil.

Draw your own food chain below:



FOOD CHAIN FUN



Objective:

Students will create human models of food chains and demonstrate the flow of energy (formation of links) and the effect on a food chain when a link is broken.

Materials:

Provided

Food Chain Cards (set of 24)

Non Provided

Scissors

Safety pins or tape

Green yarn

Red yarn

Vocabulary:

bacteria, basic needs, carnivore, conservation, consumers, decomposer, ecosystem, energy, food chain, food web, herbivore, land stewardship, native, omnivore, photosynthesis, producer, wildlife

Activity Preparation:

1. Using scissors cut out the provided *Food Chain Cards*.
2. Using scissors cut eight (8) pieces of green and red yarn between twelve to fifteen (12-15) inches long.

Background:

- All living things have basic needs of food, water, shelter, and space.
- All living things need food for energy. Living things use energy to grow, maintain their bodies, and to reproduce.
- Plants receive energy from the sun through photosynthesis.
- Plants are the first link in a food chain because they are able to make their own food, therefore without the sun's energy there would be no life on Earth.
- Three groups of living things, or consumers, are herbivores (mostly plant eaters), carnivores (mostly meat eaters), and omnivores (plant and meat eaters).
- For teaching purposes, arrows connect food chains. The arrows represent "gives energy to." For example: Grass → Rabbit → Bobcat
The sun gives energy to the grass so it can make its own food. Grass gives energy to the rabbit. The rabbit gives energy to the bobcat.
- Depending on what a living thing eats, or what eats that living thing, determines the link or place it resides in a food chain. A food web is made of several food chains that are interconnected.

For this activity, the animals are either an herbivore, or a carnivore.

Herbivores:	Rabbit	Squirrel	Grasshopper	Deer	Mouse	Porcupine	Prairie Dog	Fish
Carnivores:	Fox	Hawk	Frog	Bobcat	Coyote	Mountain Lion	Badger	Snake

Procedure and Activity:

Engage students by viewing the following video, *Food Chains*, (3:00)

<http://studyjams.scholastic.com/studyjams/jams/science/ecosystems/food-chains.htm>

1. Initiate a discussion to help students understand the concept of a food chain.
2. Explain that they will participate in an activity to help them better understand a food chain. During the activity, students will role-play the plant or animal identified on their card. It may be helpful to rearrange tables or desks to allow plenty of space, if the activity takes place inside.
3. Provide each student with a *Food Chain Card* and pin or tape the card to his or her shirt. Explain that the pictured plants and animals are all native to Texas, and explain meaning of the term “native.”
4. Instruct students to imagine they are the plant or animal that is on their shirt.
5. Instruct students to ask themselves the following questions to stimulate thinking.
“Do I give energy to animals that eat mostly plants, do I give energy to animals that eat mostly meat, or am I at the top of the food chain?”
6. Give students that received plant cards a piece of green yarn and instruct them to line up side-by-side in the middle of the classroom, allowing ample room between themselves. Explain that plants use the sun’s energy to make their own food; therefore, plants are producers. Introduce the word “photosynthesis” to older students.
7. Instruct students (animals) that eat mostly plants to gather on one side of the room and for students (animals) that eat mostly meat to gather on the opposite side of the room. It may be necessary to guide students to the correct side, as some may be unsure of what their animal eats or to whom they give energy. Use the table on page one (1) for reference.
8. Give students with cards that eat mostly plants a piece of red yarn. Tell them they represent herbivores. Introduce the word “herbivore” to students as an animal that eats mostly plants.
9. Tell the students on the opposite side of the room that they represent carnivores. Introduce the word “carnivore” to students as animals that eat mostly meat.
10. Stand behind the students who represent plants and hold the sun card. Explain that you are providing the energy that plants need to make their own food.
11. Plants will be the first to provide energy for others. Instruct these students to say the following sentence at the same time. *“I am a plant, or a producer, and I use the sun’s energy to make my own food.”*
12. The same students will begin the creation of each food chain by holding one end of their green yarn in one hand. One at a time, they will choose a student from the herbivore group and invite them to stand in front of them and take hold of the free end of the green yarn. When all herbivores are in place, ask all of the plants to repeat the following sentences at the same time. *“I am a plant, or a producer, and I give energy or food to an herbivore or a (name of the animal). Herbivores eat mostly plants.”*
13. Herbivores are the next consumed in the food chain, as they provide energy for carnivores. One at a time, herbivores will choose a student from the carnivore group and invite them to stand next to them, on the opposite side of the plant, and take hold of the free end of the red yarn. When all carnivores are in place, ask all of the herbivores to repeat the following sentences at the same



time. “*I am an herbivore and I give energy or food to a carnivore or a (name of the animal). Carnivores eat mostly meat.*”

14. Students that represent carnivores will likely wonder who will eat them. Explain that some carnivores will eat other carnivores. These carnivores are “apex predators” and are at the top of the food chain.
15. Tell students that when any wild living thing in a food chain dies, it will begin to decompose. There are organisms that will assist with the decomposition process, and eventually the living thing will either become nutrients for the decomposer or recycled into the soil.
16. Stand at the end of the food chain and hold up the bacteria sign. Explain that bacteria break down dead organisms for food and replenishes the soil with nutrients in the process.
17. Choose three (3) food chains. Select one student who represents a plant, one who represents an herbivore, and one who represents a carnivore and ask them to break their link(s) of yarn and sit down. Discuss what may happen in each situation when the food chain is broken. Discuss some reasons why the food chains were broken, possibly due to disease, floods, or loss of habitat.
18. Initiate a discussion about stewardship, in regards to both land and wildlife, and ask for volunteer responses about its meaning. Ask students what they can do to be good land stewards both at home and at school. Discuss ways that good land stewardship practices can benefit the members of a food chain that live in a park or on a ranch.

Extension:

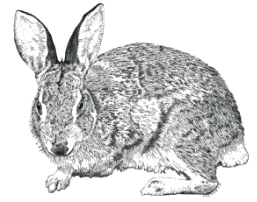
If desired, allow older students to use the *Critters of Texas Pocket Guide* or another wildlife guide and identify an animal that might receive energy from one of the carnivore animals in the game. Explain that many animals eat both plants and meat and introduce the term “omnivore.” Allow students time to create and share their own food chains using the guides. They may include omnivores.



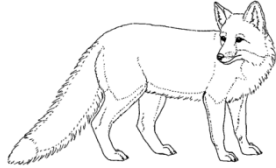
Plant



Rabbit



Fox



Plant



Squirrel



Hawk



Plant



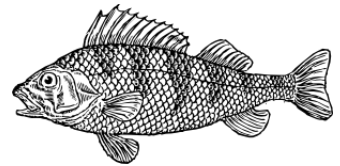
Grasshopper



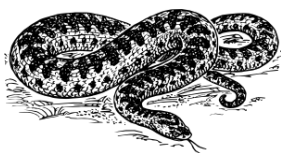
Frog



Fish



Snake



Deer



Plant



Bobcat



Plant



Mouse



Coyote



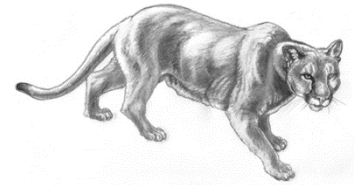
Plant



Porcupine



Mountain
Lion



Plant



Prairie Dog



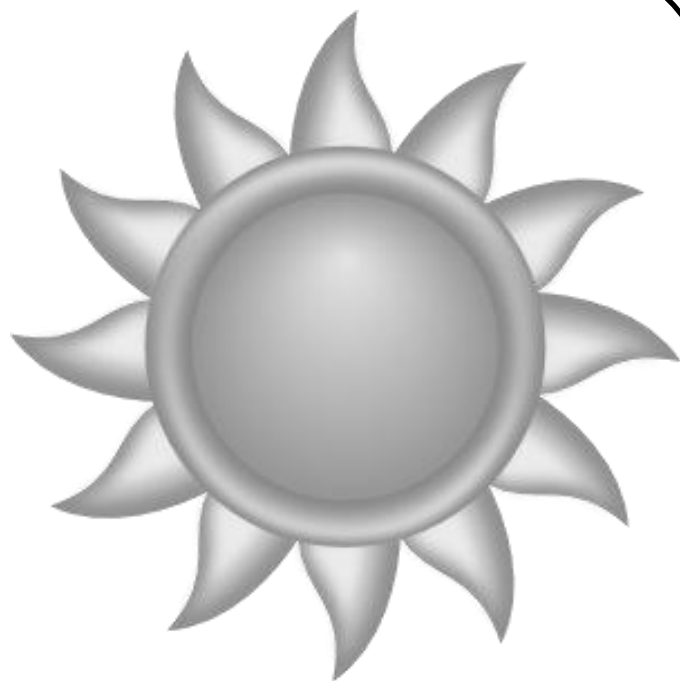
Plant



Badger



Sun



Bacteria

