

TEXAS FOOD WEBS

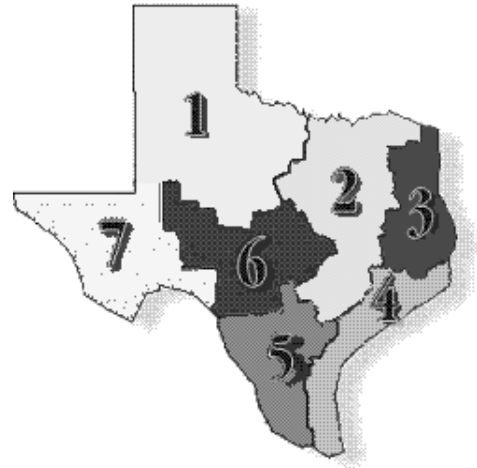
Purpose: To identify components of an ecosystem; and describe how organisms including producers, consumers, and decomposers live together in an environment

The Task: To build a mobile that shows interacting food chains in one of the Texas Ecoregions



Background Information: Texas is a BIG state; so big that it can be divided into several smaller regions. Each of these regions has different plants, animals, landforms, and weather. There are different ways of dividing the state into regions; the different regions are sometimes given different names. For this project we will use the seven regions described by the Texas Department of Parks and Wildlife. These seven regions are:

1. Panhandle Plains (Rolling Plains, High Plains, Llano Estacado)
2. Prairies & Lakes (Blackland Prairies)
3. Piney Woods
4. Gulf Coast
5. South Texas Plains
6. Hill Country (Edward's Plateau, Llano Uplift)
7. Big Bend Country (Maintains & Basins, Trans-Pecos)



Food Chains are models that describe how energy in the form of food passes from one organism to another; in other words, they show the movement of energy in an ecosystem. The *sun* is the original source of energy, in the form of light, for the food chain.

A **Food Web** is made up of two or more interconnected food chains. It is a model that describes how energy in the form of food moves through a **community**. A food

web is a series of overlapping food chains that show the food relationships among organisms in a community.

Food chains and food webs start with the Sun. Green plants capture energy from the sun, carbon dioxide from the air, and water from the soil and convert it to glucose in the chemical reaction we call photosynthesis. Glucose can be converted into energy during another chemical reaction called cellular respiration. Most of the energy made by plants is used to carry on the plant's life activities. Because green plants can make their own energy during photosynthesis, they are known as PRODUCERS.



The energy not used by a plant is passed on as food to the next level of the food chain.

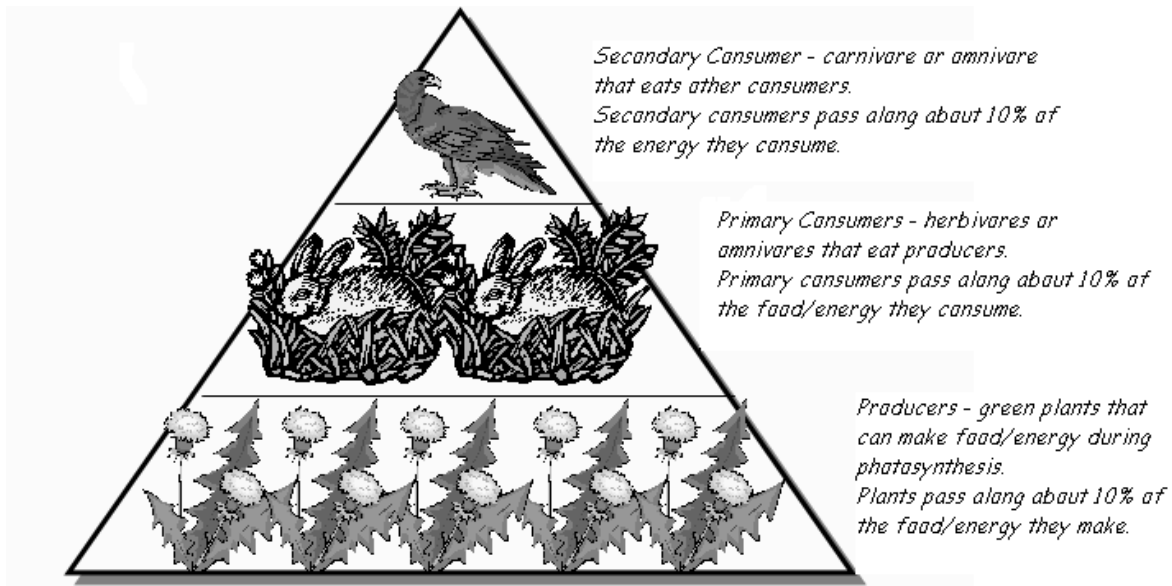
All animals get energy from their food. Nutrients (glucose) from digested food and oxygen brought into the body by the respiratory system are converted into energy in cells through cellular respiration. Because animals cannot make their own food (energy), and must get it from other sources, they are known as CONSUMERS.

A food chain models how each organism gets its food. Some animals eat plants and some animals eat other animals. Some animals eat plants and other animals. Each link in a food chain is food for the next link. A food chain always starts with plant life and ends with an animal. Animals that eat only plants are called *herbivores*. Animals that eat other animals are called *carnivores*. Animals that eat both are called *omnivores*.

There are **more herbivores than carnivores** in a food chain.

Energy is passed from organism (one link in the chain) to another. When an herbivore eats, only about $1/10^{\text{th}}$ of the energy (that it gets from the plant food) is used by the animal; the rest of the energy is lost as heat or used up by the herbivore as it moves. Similarly, when a carnivore eats another animal, only about $1/10^{\text{th}}$ of the energy from the animal food is stored in its tissues. In other words, organisms along a food chain pass on much less energy than they receive.

The further along the food chain you go, the less food and energy is available.



An **Energy Pyramid** models the decreasing amount of food/energy available to organisms in a food chain.

Most food chains have no more than four or five links. There cannot be too many organisms in a single food chain because the animals at the end of the chain would not get enough food / energy to stay a live.

Your Task: Use the links provided to at http://science-class.net/TX_food_webs to create four possible food chains for your assigned ecoregion. The chains should form a food web.

Each food chain must have at least two consumers.

There is a folder on Scommon with pictures and photos of Texas plants and animals for you to use to make the mobile. Find the folder by going to:

My Computer → Scommon → Poarch → TX_Food_Webs

Important Stuff to Remember:

Every food chain begins with the sun.

Every food chain must have a producer.

Four food chains means there must be four producers.

Your food web must include herbivores, omnivores, and carnivores.