



Find a Food Chain

Outdoor Classroom Field Investigation Lesson Plan & Resources

Online Lesson Plan & Resources: <https://www.alabamawildlife.org/oc-activity-food-chain/>

Students will find evidence of a food chain that exists within the school's outdoor classroom and create a model to show the transfer of matter and energy within the environment between producers, consumers, and decomposers.

The background information below can be used to help introduce the topic, engage the students, and build a foundation to discuss the topic:

Background Information (online as a PDF)

A **food chain** demonstrates the transfer of nutrients and energy (in the form of food) from one organism to another organism. Each organism in the chain is linked together. A food chain for a specific ecosystem describes who eats what and traces the flow of energy and nutrients through the ecosystem. All living things, including plants and animals, need nutrients and energy to move, grow, stay warm and survive.

The **original source of energy** for ALL food chains is the **sun**. Just as you can feel the sun's energy as heat on your skin, plants collect the sun's energy when sunlight touches their leaves. The plants use the energy from the sunlight to convert water from the soil and carbon dioxide from the air into sugars (or food). This process is called photosynthesis.

Because plants can produce their own food using energy directly from the sun, they are called **producers (autotrophs)** in a food chain. Animals cannot produce their own energy like plants can, so they must eat plants and animals for their energy. Therefore, animals are called **consumers** of energy in a food chain.

Animals that eat only plants are called herbivores, while animals that eat plants and animals are called omnivores. When an animal eats a plant (or parts of a plant such as the leaves, flowers, nectar, seeds, nuts, acorns, roots, etc.) it is the **primary consumer** in a food chain.

Animals that only eat other animals (they do not eat plants) are called carnivores. In a food chain, the animals that eat the primary consumers are called the **secondary or tertiary consumers**.

The energy is passed from the sun, through the producers to the consumers, until it reaches the top predator, also called the **apex predator**. The apex predator does not have any other animals that hunt it for food. Humans in Alabama and throughout most of the United States are apex predators. There are no other animals that view humans as a food source in Alabama.

Decomposers (or detritivores) are the final part of a food chain, eating the remains of dead plants and animals. Decomposers can be scavengers such as vultures or various bugs such as worms, snails. Other decomposers, fungi and bacteria, help break the organic waste down even more and return the nutrients that provide energy back to the soil. This completes the life cycle and makes nutrients available to producers, allowing the whole process to take place again through a food chain.

Only 10% of the original source of energy is passed on during each part of the food chain from the sun to the producers (plants), from the producers to the primary consumers, from the primary consumers to the tertiary consumers, from the tertiary consumers to the apex predator, and from the dead plants and animals to the decomposers.

