## GRADE

- 5th Grade

## STATE STANDERDS

- 5-LS2-1

## MATERIALS

- Clipboards
- Pencils
- Worksheet

# Food Chain

**Introduction:** Students explore the zoo to figure out the animal food chain.

**Goal:** Students will use observation, reasoning, and evidence from zoo exhibits to identify producers and consumers and explain how energy flows through a food chain.

**Instructions:** Give each student a worksheet. As students walk through the zoo, they should observe animals, habitats, and informational signs to gather evidence about what each animal eats and how it survives in its ecosystem. Students will identify whether each organism is a producer, primary consumer, secondary consumer, tertiary consumer, apex predator, or decomposer. Students will then explain how removing one organism could affect the rest of the food chain.

**Background Information**: A food web is a model that shows the complex feeding relationships within an ecosystem. Energy in most ecosystems begins with the sun. Plants and algae capture this energy through photosynthesis and are called producers because they create their own food. Animals that eat producers are called primary consumers. These are usually herbivores such as zebras or insects that eat plants. Animals that eat primary consumers are called secondary consumers, and animals that eat those predators may be tertiary consumers. Animals that may eat tertiary consumers are apex predators, which are at the top of the food chain. Then there are decomposers who get their energy from decaying plants and animals. These organisms have the important role of adding nutrients back into the soil. Some common examples of decomposers are earth worms and mushrooms. Many animals can eat different foods depending on what is available in their environment. Energy moves from one organism to another when one organism eats another. However, not all energy is transferred. Some energy is used by the organism for movement, growth, and body functions, and some is lost as heat. This means that animals higher in the food web usually need to eat many organisms to get enough energy.

**Conservation Message:** Food chains are delicate systems. If one species disappears, it can cause a chain reaction that affects many other organisms. For example, if predators decline, prey populations may grow too large and overeat plant resources. Human activities such as habitat destruction and pollution can disrupt these important relationships. By protecting habitats, reducing pollution, and supporting wildlife conservation, we can help maintain healthy ecosystems and balanced food chains.

**Answer Key:**

- Producers are organisms that make their own food using the energy from the sun, like plants or algae. These organisms are called “producers” because they make their own food.
- Primary consumers are animals that feed on producers. These animals, such as deer, zebras, rabbits, and giraffes, are most commonly known as herbivores. These animals play a crucial part in the food web by transferring energy from plants to predators.
- Secondary consumers are animals that feed on primary consumers. Typically, carnivores or omnivores, these animals play a vital role in regulating the herbivore population. Some of these animals include foxes, snakes, birds of prey, seals and dolphins.
- Tertiary consumers are animals that feed on primary and/or secondary consumers. They usually have few to no natural predators, often serving as apex predators in their ecosystems. Some of these animals are sharks, polar bears, lions, and crocodiles.
- Apex Predators are animals on the top of the food chain. They are typically large animals like bears, lions, crocodiles, reticulated pythons, and orcas.
- Decomposers are organisms that break down dead plants, dead animals, and waste which recycles essential nutrients back into the ground. Some of these organisms are worms, millipedes, fungi, and slugs.

Name: _____

FORT WAYNE ZOO

**Directions:**
Choose six animals and write the animals' names. Then write what role the animals play in the food chain. Once completed, write how you think removing one of these organisms could affect the food chain.

**Animal Food Chain Roles:**
producers, primary consumers, secondary consumers, tertiary consumers, apex predators, decomposers

| Animal: | This animals role is: |
| --- | --- |
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**How can removing one of these organisms affect the food chain?**