

## Snakes in a Food Chain



**GRADE LEVEL:** First Grade

**SCIENCE CONCEPT:** How snakes fit into a food chain/food web

**RELATIONSHIP TO CALIFORNIA SCIENCE CONTENT STANDARDS:** Plants and animals meet their needs in different ways. As a basis for understanding this concept: Students know animals eat plants or other animals for food and may also use plants or even other animals for shelter and nesting.

**LEARNING OBJECTIVE:**

Students will create a food chain/food web with a snake as a part of it that consists of at least 3 things.

**EVALUATION IDEAS:**

1. Formative: Assessment can be done throughout the lesson on how they answered the questions that were asked. Some of the questions may be a little difficult for them to answer without help, but the questions will get them thinking
2. Summative: Completion of the food chain that consists of at least 3 things.

### **CONCEPTUAL BACKGROUND:**

An ecosystem is a community of different types of living things (organisms) and their physical environment (including sunlight, rocks, soil, water, hills, holes, etc.) Each organism has a role (or "niche") in the ecosystem. Each living thing in the ecosystem depends on other living things.

The sun supplies energy for all life on Earth and thus all Earth's ecosystems. Plants convert sunlight to make their own food, which they use to support their own lives. When animals eat plants, they eat this "ready-made" food, formed from energy originally provided by the sun. The sun's energy is thus passed along to them. In this way, the sun's energy fuels every living thing. Plants are called producers because they produce or make their own food. Animals are called consumers because they consume (eat) food but do not produce it on their own. There are different kinds of consumers: those that eat only plants are called primary consumers or herbivores; those that eat only animals are called carnivores; and those that eat both plants and animals are called omnivores.

Some organisms in the ecosystem are called decomposers. They decompose or break down dead matter by digesting dead plants and animals. (In this sense, they are also consumers.) They break down dead matter into basic materials, which are recycled into the soil and become nutrients that can be used by plants and some other living things. Therefore, they play an essential role in the ecosystems.

#### The Direction of the Arrows

The arrows in a food chain or food web go from the thing that is being eaten to the thing that eats it to show the transfer of energy. When students try to reason about food webs, they often reverse the direction of the arrows to show what eats what.

#### EXAMPLES of animals that eat snakes

Other snakes

Alligators

Crocodiles

Large Monitor Lizards

Birds of prey

- Owls
- Eagles
- Hawks
- Buzzards
- Storks

Fox

Skunks

Raccoons

#### EXAMPLES of things that snakes eat

Snakes are carnivorous and will eat anything that will fit into their mouths.

Rodents

Frogs

Eggs

Lizards

Slugs

Insects

Birds

Snakes

Fish

Salamanders

Turtles

### **LESSON IMPLEMENTATION PLAN:**

**ENGAGE** – Ask students if they knew that snakes help get the food they eat to their dining plates? Tell them that some snakes help farmers. Ask students if they know **how** snakes help farmers. (The answer is that they help control pests on farms.)

**EXPLORE** – Ask what might happen on a farm if all the snakes disappeared? (The answer is the rodent population would become so large that it could cause a huge loss to stored grain and other types of food.) Ask what would happen if the animals that eat snakes disappeared? (There would be too many snakes.)

**EXPLAIN** – Tell students snakes are carnivores, meaning they only eat other animals. Have students guess what kinds of animals' snakes eat. Show or tell them some animals that they may not have named. Show students pictures of snakes eating other animals. Ask students what animals eat snakes. Show or tell them some animals that eat snakes. Make sure to tell them that snakes will also eat other snakes. Show them pictures of animals eating snakes. Explain to the students that a food chain starts with the sun giving energy to plants, the plants get eaten and give energy to animals and then other animals eat some of those animals. Tell students that in a food chain the arrows mean that thing gives energy to the way the arrow is pointing. For example: Sun=>Grass=>Cows=>Humans. So the sun gives energy to grass which gives energy to the cow and the cow gives energy to humans. Tell students that they will be drawing their own food chains that must consist of a snake.

**ELABORATE** – Introduce terms such as producer, consumer, and herbivore, omnivore, and carnivore.

**EVALUATE** –

(a) Summative – Completion of the food chain that consists of at least 3 things.

(b) Formative – Assessment can be done throughout the lesson on how they answered the questions that were asked. Some of the questions may be a little difficult for them to answer without help, but the questions will get them thinking.

### **DIFFERENTIATION PLANS:**

**Behavioral for Student A:** Commend student for behaving appropriately and allow student to be a teachers' helper before the unwanted behavior starts.

**Cognitive for Student A, B, C:**

- Help student by not requiring them to place the arrows and just have them draw pictures of animals that eat snakes and animals that snakes eat.
- Draw pictures for the student and just have them place the arrows in the correct direction.
- Use explicit instruction to explain concepts and terms.

**Affective for Student**

- Allow student extra time to finish task

**Language Demands for Students E, F, G**

- Front load terms and build prior knowledge.
- Use pictures and drawings to explain terms.
- Learn to say some of the terms in the native language of the student.

**LIST OF MATERIALS (PER GROUP):**

Crayons

Pencils

Worksheets or Paper

Suggested Reading:

Wexo, J. B. (1987). Snakes. Mankato, MN: Creative Education.