



## *Western Upper Peninsula Center for Science, Mathematics and Environmental Education*

*A partnership of*

Copper Country & Gogebic-Ontonagon Intermediate School Districts and Michigan Technological University  
Serving schools and communities in Houghton, Baraga, Gogebic, Ontonagon and Keweenaw Counties

### **Food Chains: What's for Dinner?**

**Duration: 90 minutes**

**Age Group: Gr. 3**

#### **Objectives**

*After this presentation, students will be able to:*

1. Give examples of consumers, producers & decomposers.
2. Describe adaptive behaviors utilized by animals to avoid being eaten
3. Explain what a food web is and how living organisms in an ecosystem are interrelated.
4. Dissect and identify parts of a flower.

*Standards:* SCI: II.1.E4; III.2.E2; III.4.E2; III.5.E.1-2; MAT: III.1.E1; III.3.E1-2.

**Summary:** Students will learn about predator/prey relationships and strategies animals have developed to avoid being eaten. Students will also explore why birds sing and how animals use their senses to communicate with each other.

#### **List of All Materials Needed**

- Magnifying lens
- Food Chain scavenger Hunt
- Michigan Ecosystem posters
- Tape
- Whiteboard and markers
- Flags to mark boundaries
- String (For posters and hawks & chickadees game)
- Flower Diagram
- Post-it Notes for flower dissection
- Pencils
- Clipboards

#### **Introduction:**

What is an ecosystem? Within an ecosystem...producers, consumers and decomposers interact with each other.

What are producers?

- Get their energy and food from sunlight.
- Have them name some- trees, plants, flowers, grass.

What are consumers?

- Get their energy from eating plants and animals.
- There are 3 types of consumers... what are they?
  - Herbivores = only eat plants.
  - Carnivores = only eat animals.
  - Omnivores = eat both plants and animals.

Have them name specific animals for each category.

What are decomposers?

- Decomposers eat and recycle dead plant and animal material back into soils and the earth.

Have them name some- fungi, ants, earthworms.

Do producers, consumers and decomposers interact in nature? How?

- They interact and form a food chain.
  - Consumers eat producers and decomposers recycle both dead plant and animal material.

## **ACTIVITIES:**

### **Form A Food Chain**

1. Break up students into groups of 4.
2. Explain that even the state of Michigan has different ecosystems and that there will be some different and similar food chains.
3. Each group will get a Michigan Ecosystem poster, using string and tape they will connect their food chains on their poster. Try to give each group a different poster; there might be some duplication depending on the size of the group. Explain that they need to find at least 3-4 different food chains.
4. After 10-15 minutes, groups will share their food chains on their posters with the rest of the group. Can be done inside or outside.

### **Food Chain Scavenger Hunt**

1. Have students stay in groups, but each student gets a scavenger hunt card.
2. Have them go out into the forest and look around for producers, consumers and decomposers. Tell them to be specific if possible. Encourage them to identify trees, ex. - pine tree. For signs of consumers have them write the sign and what kind-of animal made it.
3. Give students 15-20 minutes, gather back together in large group and share findings.

### **Hawks & Chickadees**

1. Divide the group into 1/3 hawks and 2/3 chickadees. Scatter beans around the playing area. The beans are the insects the chickadees eat. The chickadees are the food for the hawks. Place the 3-8' diameter yarn circles on the ground. These are "safe" circles for the chickadees/
2. The hawks line up around the boundary of the play area.

3. Chickadees must go out and collect 3 beans and get back to a “safe” circle. If a hawk tags them, they are dead.
4. Give the chickadees a head start to get their food (insects=beans). The activity leaders calls “Chickadees” to get the chickadees going and then “Hawks” to get the hawks after the chickadees. Play until the last chickadee is left. If a chickadee is caught (tagged) or does not get 3 beans before it is back in a safe circle, it is dead.
5. \*\*\*The key to this game is the time allowed between releasing the chickadees and the hawks. How much time you should allow depends upon the size of the playing area, the density and visibility of the beans and the ages and size of the students. As a rule of thumb, **release the hawks when roughly ½ of the chickadees are safely back in a circle.**
6. Discuss food chains and challenges to survival.
7. Variation #1: Lump some beans together in several piles rather than scattering them all over. Compare hunting success rate. Discuss concentrated food supplies (ex. Ant hill)
8. Variation #2: Lump some beans together in several piles rather than scattering them all over, and require that the chickadees get one of each bean type. Discuss concentrated food sources, camouflage, and food variety. Have students name animals that have great camouflage.
9. As the end of each round, add one new hawk for each two hawks remaining (i.e. offspring). If a hawk has not caught a chickadee, the hawk is dead. Add one new chickadee for each pair of chickadees left (offspring). If you play with their variation, you will have to release the hawks a little sooner than in the simpler version of the game.
10. Graph the number of hawks and chickadees at the beginning and end of each round. Discuss predator-prey relationships.

**Nature’s Recyclers??** Allow students to investigate the forest floor and decomposers. Record on data sheet.

**Dissect a Flower:**

1. Explain that we have looked at other parts of the food chain-- producers, consumers and decomposers.
2. Explain that producers make up the most energy and food of the food chain, and that we are going to take a closer look at flowers.
3. Have each group go out in the forest and collect a flower to bring back.
4. Once they have brought the flower back, they will need to dissect it and look at the flower diagram to label the parts with their post-it notes. Have them use hand lenses to look closer.
5. Dissections work well with a daffodil, tulip or gladiola—have students try to locate one of those or a blooming flower.
6. For each group, cut the flower lengthwise and look for eggs/seeds in the ovary.
7. Have group gather round and take a look at each other’s flowers.

**Summarize:**

Ask students what an ecosystem is? What are producers, consumers and decomposers? Relate back findings of the day to food chains. What are food chains? Last of all...make sure they had FUN!!!