

Food Webs and Energy Flow

Grade: 4 **Subject:** Science **Time:** ~45 min + ~15 min extra **Work mode:** By yourself · pencil only Science

Start Here

This is a **paper science activity**. You will read a little, look at a picture, and answer questions with a pencil. You do **not** need a computer or any supplies. Work by yourself and do your best. If a question is hard, skip it and come back. You may read the words out loud to yourself.

Start Notice & Wonder 5 min

Think about a grassy meadow with animals living in it.

1 In a meadow you might see **grass**, a **grasshopper**, a **mouse**, a **hawk**, and an **owl**. Write **one thing you notice** about what eats what.

2 Write **one thing you wonder**. Start with the words "**I wonder...**"

Build Read the Science 5–10 min

How energy moves in a food web

Every living thing needs **energy** to grow and move. In a meadow, that energy starts with the **Sun**.

- **Producers** make their own food using sunlight. Plants like **grass** are producers. They are the start of the food.
- **Consumers** cannot make their own food, so they **eat** other living things. A grasshopper, a mouse, and a hawk are consumers.
- **Decomposers** break down dead plants and animals and put nutrients back into the soil. A **mushroom** and an **earthworm** are decomposers.

A **food web** is a picture that shows what eats what. In a food web we draw **arrows**. An arrow means "**energy goes to.**" The arrow points **from** the thing that is eaten **to** the thing that eats it.

grass → **grasshopper** means "energy goes **from** the grass **to** the grasshopper that eats it."

Tip: the arrow always points the same way the energy travels — toward the eater.

Word Bank

producer

a living thing that makes its own food from sunlight, like a plant.

consumer

a living thing that eats other living things for energy.

decomposer

a living thing that breaks down dead plants and animals.

energy

what a living thing needs to grow and move.
food web
a picture with arrows that shows what eats what.

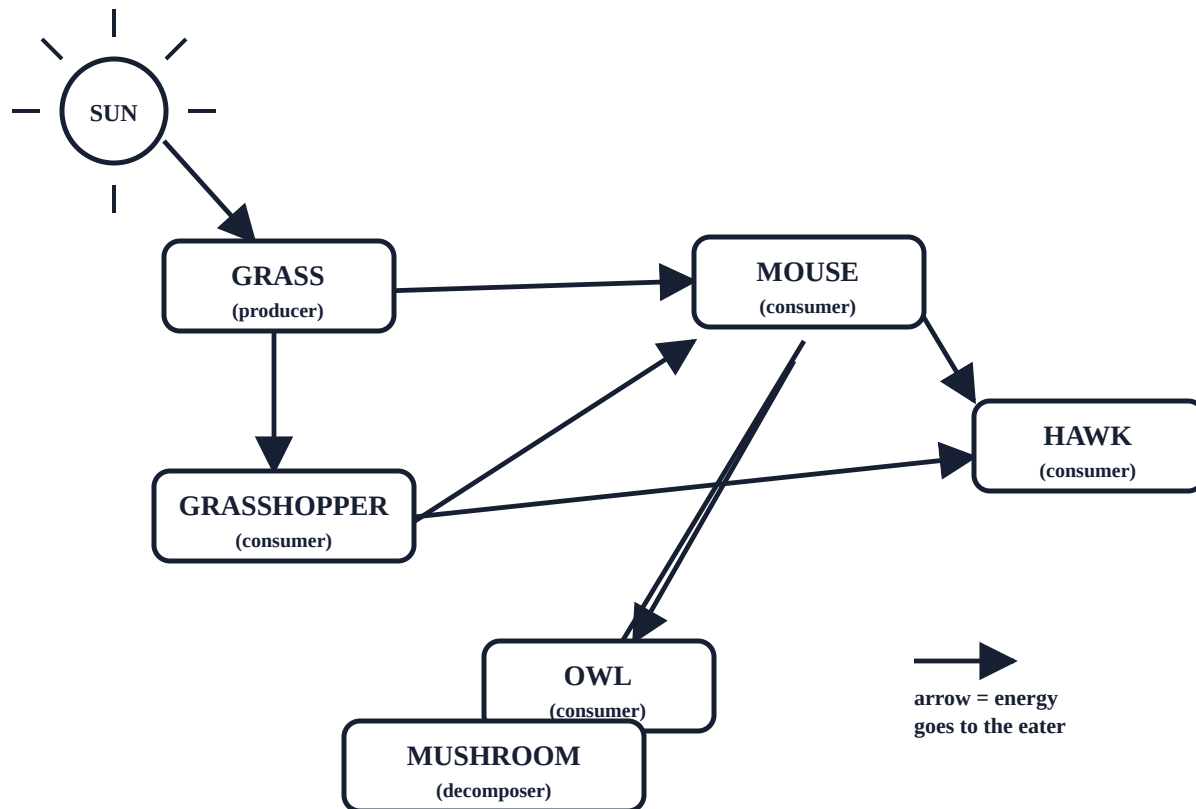


Figure 1. A meadow food web. Each **arrow** points **from** the living thing that is eaten **to** the one that eats it, showing which way the **energy** travels. The drawing is black and white, so it is clear without color.

3Look at Figure 1. The arrow from **grass** to **grasshopper** means the energy goes which way? Fill in the blank:
energy goes from the _____ to the _____.

Apply Use the Food Web 20 min

Use Figure 1 on the page before to answer these questions.

4Label each living thing. Write **P** for producer, **C** for consumer, or **D** for decomposer.

- ___ a) Grass
- ___ b) Grasshopper
- ___ c) Mouse
- ___ d) Hawk
- ___ e) Mushroom

5Trace one energy path. Follow the arrows to write one **food chain** that is inside the web. Start with the Sun and use three more living things. Write them in order with arrows.

Sun → _____ → _____ → _____

6What if? Imagine all the **grass** in the meadow dries up and is gone. What do you think happens to the **grasshopper**? Use the food web to explain **why**.

7Observation or inference? An **observation** is something you see. An **inference** is an idea you figure out. Write **O** or **I** for each.

- _____ a) In the food web there is an arrow from the mouse to the hawk.
- _____ b) The hawk gets some of its energy from the mouse.
- _____ c) The mushroom grows on the dead mouse.

Explain Claim–Evidence–Reasoning 5–10 min

Question 8. A sickness makes **all the mice** in the meadow disappear. Predict what happens to the **hawk**. Use the food web as your evidence.

Sentence starters you may use: "I think the hawk will..." · "In the food web I see an arrow from..." · "This will happen because..."

Claim (what happens to the hawk)

Evidence (an arrow from the food web)

Reasoning (why that happens)

Close ACE Wrap-Up 5 min

Articulate

In your own words, what does an arrow in a food web mean?

Connect

Point to one producer and one consumer in Figure 1. Write their names.

Extend

Where does the energy in this whole food web first come from?

Continue Early Finisher optional · ~15 min

If you finish early (no new supplies needed):

Add a new living thing to the web. On the back of this page, draw a **rabbit** and add it to the meadow food web. Draw the **arrows** that show its energy. Think: **What does the rabbit eat?** and **What might eat the rabbit?** Remember, each arrow points toward the eater. Label the rabbit as a producer, consumer, or decomposer.

Turn in: Hand in this whole packet with your name, class, and date filled in. Make sure questions 1–8 and the ACE box are answered. The early-finisher drawing is optional — turn it in too if you did it.

G04_SCI_FoodWebs_01 — Food Webs and Energy Flow Student Packet