

Food Webs and Energy Flow

Grade 5 • SCIENCE • Students practice tracing energy and matter through food webs involving producers, consumers, and decomposers. • Standards: 5-LS2-1

Answer each question about how energy and matter move through food webs. Remember that arrows show the direction energy flows from one organism to another.

1. In this food chain, grass → rabbit → hawk, which organism is the producer?
2. In this food chain, oak tree → caterpillar → robin, which organism gets energy directly from the oak tree?
3. A mushroom breaks down a dead log into nutrients that return to the soil. What role does the mushroom play in this food web?
4. In this food web, algae → minnow → bass → heron, how many consumers are shown?
5. Clover plants grow in a meadow, mice eat the clover, and snakes eat the mice. If the arrow shows energy flow, which direction should the arrow point between mice and snakes?
6. In a pond ecosystem, lily pads make their own food, tadpoles eat algae, dragonfly larvae eat tadpoles, and bacteria break down dead dragonflies. Which two organisms are producers in this food web?
7. A food web shows: wheat → grasshopper → frog → snake → owl. If all the grasshoppers disappeared, which organism would lose its direct source of energy?
8. Wildflowers capture energy from the sun, bees drink nectar from wildflowers, spiders eat bees, and earthworms break down dead spiders. Trace the path: where does the energy in the earthworm originally come from?
9. In a forest food web, moss and ferns are producers, slugs eat moss, beetles eat ferns, salamanders eat both slugs and beetles, and foxes eat salamanders. How many different organisms can provide energy directly to the salamander?

10. A coastal food web shows: kelp → sea urchin → sea otter, and kelp → small fish → sea otter. Bacteria decompose dead sea otters and release nutrients that kelp absorbs. Explain how matter cycles back to the producer in this food web.

Answer Key — Food Webs and Energy Flow

For the teacher / parent. Do not distribute with the worksheet.

1. grass (*Producers make their own food using sunlight.*)
2. caterpillar (*The arrow points from oak tree to caterpillar, showing energy flows to the caterpillar.*)
3. decomposer (*Decomposers break down dead organisms and return nutrients to the environment.*)
4. 3 (*The minnow, bass, and heron are all consumers that eat other organisms.*)
5. from mice to snakes (*Energy flows from the organism being eaten to the organism eating it.*)
6. lily pads and algae (*Both lily pads and algae make their own food through photosynthesis.*)
7. frog (*The frog receives energy directly from the grasshopper according to the arrows shown.*)
8. the sun (*All energy in food webs originates from the sun, which producers capture and convert to food.*)
9. 2 (*The salamander receives energy directly from slugs and beetles.*)
10. Bacteria break down dead sea otters and release nutrients that the kelp absorbs and uses to grow. (*Decomposers return matter to the environment where producers can use it again, completing the cycle.*)