

Sunlight to Otter

Trace food energy back to sunlight.

5-PS3-1 "Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. Clarification Statement: Examples of models could include diagrams, and flow charts."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB In the flow chart, underline Sun, circle eelgrass, and number the two eating arrows 1 and 2. This traces where the energy begins and how it reaches the otter.

Energy Along the Coast

- ① On a sunny coast, eelgrass grows in shallow water. Like other green plants, eelgrass captures light from the sun. It uses that light to make sugars, which store chemical energy. A sea urchin may eat eelgrass. Then a sea otter may eat the sea urchin. Energy moves through this food path, even though the animals do not catch sunlight themselves.
- ② A flow chart can model this path: Sun → eelgrass → sea urchin → sea otter. The first arrow does not mean the sun eats eelgrass. It means eelgrass captures sunlight and stores some of its energy in sugars. Each later arrow means an organism gets energy by eating the organism before it. At every step, some energy is released to the surroundings, so less is available.
- ③ The otter uses energy from its food to swim, grow, repair damaged body parts, and keep warm in chilly water. The energy for these jobs was once sunlight captured by eelgrass. Food gives the otter energy, but food does not create new energy. The flow chart helps show where the energy began and how it reached an animal.

2 ANSWER WITH EVIDENCE Use the passage

1 What does the arrow from Sun to eelgrass show?

2 How does energy move from eelgrass to the sea otter? Write the two eating steps.

3 Name two jobs the sea otter can do with energy from food. Where did that energy originally come from?

4 Why is less energy available at later steps in the flow chart?

3 YOUR TURN Your own words

Create a labeled flow chart for a land habitat with Sun, one green plant, and two animals. Then write exactly two sentences that explain the first arrow and name two body jobs the final animal can do with food energy.

PART 1 • READ AND MARK

In the flow chart, underline Sun, circle eelgrass, and number the two eating arrows 1 and 2. This traces where the energy begins and how it reaches the otter. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What does the arrow from Sun to eelgrass show?	Eelgrass captures sunlight and stores some of its energy in sugars.
2	How does energy move from eelgrass to the sea otter? Write the two eating steps.	A sea urchin eats eelgrass, then a sea otter eats the sea urchin.
3	Name two jobs the sea otter can do with energy from food. Where did that energy originally come from?	The otter can swim and grow, or repair body parts and keep warm. The energy originally came from sunlight captured by eelgrass.
4	Why is less energy available at later steps in the flow chart?	At each step, some energy is released to the surroundings.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Sun → prairie grass → rabbit → fox The first arrow means prairie grass captures sunlight and stores chemical energy in sugars. The fox can use food energy to run and repair damaged body parts.

Accept accurate flow charts that begin with the Sun, include a green plant that captures sunlight, and show two realistic feeding steps. In the sentences, accept any two valid body jobs, such as motion, growth, repair, or keeping warm.