Kelp Connections

Trace how changes along a coast affect living things

5.RI.3 "Explain the relationships and interactions between individuals, events, ideas, concepts, or steps in procedures in historical, scientific, or technical text using text evidence."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline two causes of kelp loss, circle what otters eat, and number the linked changes after otter hunting in the order they happened.

What Happened to the Kelp?

1. Along the Pacific coast, giant kelp grows in tall underwater forests. Each kelp plant holds to a rock with a part called a holdfast. Sunlight helps it make food. Sea urchins eat kelp, sometimes biting through the holdfast so the plant floats away. Sea otters eat urchins. Where otters eat many urchins, fewer urchins remain to chew living kelp.

2. In the 1700s and 1800s, hunters killed many sea otters for their thick fur. In some coastal areas, fewer otters meant more urchins survived to graze. The urchins stripped large patches of kelp from the rocks. Without thick kelp forests, young fish had fewer places to hide from larger fish. A change in one animal had reached another animal through the kelp.

3. Today, sea otters have returned to some places where they were once rare. By eating urchins, they can help kelp forests grow again. But otters cannot make kelp grow on bare sand, because kelp needs rock to hold on to. Kelp also needs sunlight. If muddy water blocks the light, even fewer urchins may not be enough to bring a forest back.

2 ANSWER WITH EVIDENCE

Use the passage

1. How does an otter's feeding affect what happens to living kelp?

2. How did hunting otters lead to the loss of kelp in some coastal areas?

3. How did the loss of thick kelp forests affect young fish? Use a detail from the passage.

4. How can an urchin's feeding change a kelp plant's connection to a rock?

3 YOUR TURN

Your own words

A ranger sees many otters but little kelp. Write three or four sentences explaining two different reasons the kelp might not grow back and how this could affect young fish. Use at least two details from the passage.

ANSWER KEY

Kelp Connections

GRADE 5 · 5.RI.3

PART 1 · READ AND MARK

Underline two causes of kelp loss, circle what otters eat, and number the linked changes after otter hunting in the order they happened. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How does an otter's feeding affect what happens to living kelp?	**Otters eat urchins, so fewer urchins remain to chew living kelp.**
2	How did hunting otters lead to the loss of kelp in some coastal areas?	**Hunting left fewer otters. More urchins survived and stripped large patches of kelp from the rocks.**
3	How did the loss of thick kelp forests affect young fish? Use a detail from the passage.	**Young fish had fewer places to hide from larger fish because thick kelp forests had sheltered them.**
4	How can an urchin's feeding change a kelp plant's connection to a rock?	**An urchin can bite through the kelp's holdfast, which holds it to a rock. The kelp then floats away.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Many otters could eat urchins, but kelp might still have no rocks for its holdfasts. Muddy water could also block the sunlight kelp needs to make food. With either problem, a thick kelp forest might not grow. Young fish would then have fewer places to hide from larger fish.

Accept responses that connect a lack of rocks and blocked sunlight to poor kelp growth, then connect sparse kelp to less shelter for young fish. Students may use different wording if both relationships are clear.