Hidden Reef Helpers

Read how sponges shape life beneath the water.

ZOO.2.3 "Describe the importance of phylum Porifera in aquatic habitats."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline three different ways sponges help aquatic habitats. Circle the details that explain how each benefit reaches other organisms.

A Busy Life on One Rock

1 A sponge clings to a rock beneath the waves, but it is not a plant. It is an animal in the phylum Porifera. Water enters its many tiny pores and passes through chambers lined with cells that move water and capture food. The sponge takes in bacteria, plankton, and other small particles, then sends water out through larger openings. A sponge does not make dirty water safe to drink, but its feeding removes some suspended material from the water around it. Across a reef, many feeding sponges can help keep water clearer for other organisms.

2 Feeding is only part of a sponge's role. Some sponges also take in dissolved organic matter, material too small to see floating in seawater. As sponges use food, they release waste containing nutrients such as nitrogen. Algae can use those nutrients to grow. Some sponges shed cells that become food for tiny animals on the seafloor. In these ways, material moving through a sponge can return to the habitat in forms other living things can use. The sponge is not simply a filter that traps food and keeps it forever.

3 The sponge itself can be a place to live. Small crustaceans and worms may shelter in its spaces, where they are less exposed to predators. Other organisms can settle on its outer surface. These relationships depend on sponges staying alive. If a storm or construction sends too much sediment into the water, fine grains can cover sponges or interfere with their flow of water. A harmed sponge may filter less water and provide less shelter. Protecting sponge-covered rocks therefore helps protect more than one kind of animal, along with the connections among them.

2 ANSWER WITH EVIDENCE

Use the passage

1. How can a sponge's feeding affect the water around a reef?

2. How can material taken in by a sponge later support other organisms?

3. Why might small crustaceans benefit from a living sponge even if they do not eat it?

4. Why could a large amount of sediment harm more than the sponges it covers?

3 YOUR TURN

Your own words

A harbor crew plans to scrape every sponge from a dock because the sponges look like dirt. Write a five-sentence note recommending a different plan. Explain two ways the sponges support other organisms, predict one effect of removing them, and suggest a practical compromise.

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PART 1 · READ AND MARK

Underline three different ways sponges help aquatic habitats. Circle the details that explain how each benefit reaches other organisms. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How can a sponge's feeding affect the water around a reef?	**It captures bacteria, plankton, and other small particles as water passes through it, removing some suspended material and helping keep the water clearer.**
2	How can material taken in by a sponge later support other organisms?	**A sponge can release nutrient-containing waste that algae use, and shed cells that tiny seafloor animals eat.**
3	Why might small crustaceans benefit from a living sponge even if they do not eat it?	**They can shelter in its spaces, where they are less exposed to predators.**
4	Why could a large amount of sediment harm more than the sponges it covers?	**Sediment can interfere with a sponge's water flow, so it may filter less water and provide less shelter for other animals.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Please do not scrape every sponge from the dock. As sponges feed, they remove small particles from the water. Their spaces also shelter small animals from predators. Removing all the sponges would take away that shelter. You could clear the areas needed for dock work while leaving sponge-covered sections untouched.

Accept other passage-supported benefits, including nutrient release or shed cells that feed tiny animals. For Part 3, look for two distinct benefits, a plausible effect of removal, and a workable compromise.