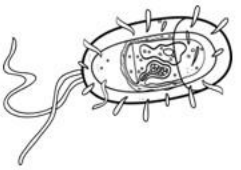
Name: KEY

SHAPE OF LIFE: SPONGES

1. When did life on Earth first appear? 3.5 billion years ago

2. Describe the living things that existed before there were animals on Earth.



Single-celled; had a membrane that enclosed them

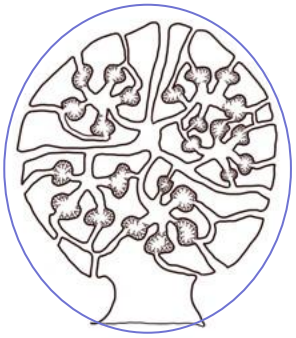
3. Are sponges ancient or relatively new organisms compared to other life on Earth?

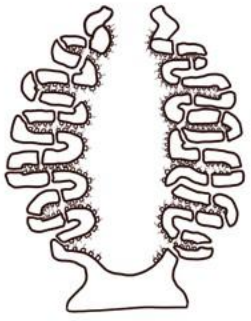
Ancient

4. True or False: Sponges all take the same shape. False

5. The video discusses sponges with pores (ostia), canals, and digestive cavities. Circle: which sponge canal system was described?


ASCONOID CANAL


LEUCONOID CANAL


SYCONOID CANAL

6. How many species of sponges have been discovered and described so far? more than 9,000

7. Circle the environments that a sponge can live in.

warm saltwater

freshwater

cold saltwater

on land

8. What happens if you cut a section of a sponge off?

The cut area will grow back as if nothing happened.

9. What happens when a sponge is passed through a sieve?

The cells begin to come back together again and build new sponges. No other animal can resurrect itself in this way.

10. What protein holds the cells of a sponge together (and is also found in all animals on Earth)?

Collagen

11. In addition to soft collagen, what are the sharp, crystalline structures embedded in a sponge that give it rigidity and form?

Spicules

12. In the box, sketch one of the spicules that you saw displayed in the video.

13. How does a sponge feed?

A sponge pumps water and filters out the food

14. To get one ounce of food, how much water does a sponge have to pump? 1 ounce

15. What happened when the biologists injected colored dye into the water outside of a sponge?

The sponge absorbed the water and dye through its ostia and into its body. The water/dye was then pumped out of the osculum.

16. If you put your hand above the osculum (large opening at the top) of a sponge, would you feel water flowing out or flowing in?

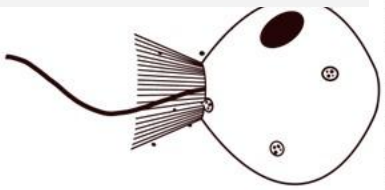
Flowing out

17. As the video takes you on a journey through the canal system of a sponge, record one interesting observation or quote.

You can see a sclerocyte; the walls of the canals are able to absorb nutrients

18. How do choanocytes power the pumping action of a sponge?

Choanocytes have whip-like flagella that create a current



19. Other than feeding, what other function does the pumping of a sponge have?

Reproduction

20. What was the first animal to reproduce using sperm and eggs? Sponges

21. Do all sponge sperm successfully fertilize the egg of another sponge? Why or why not?

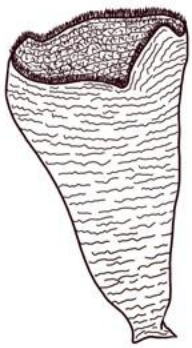
No. The sperm have to actually make it to the sponge, which is very difficult.

22. Conclusion Question: What are two pieces of evidence that you observed in the video that support the classification of sponges as animals?

Sponges feed. Sponges are able to reproduce. Sponges are made specialized cells that perform a variety of functions. Sponges have collagen in their body.

23. Conclusion Question: Why would life on land be impossible for a sponge?

Sponges require the pumping of water for survival. They use this water for food, breathing, reproducing, and getting rid of waste. Without water pumping through their body, survival is not possible.



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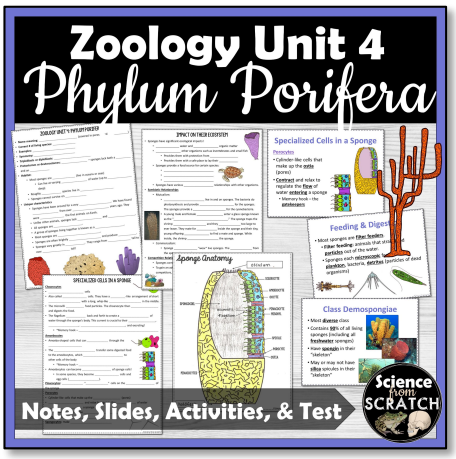

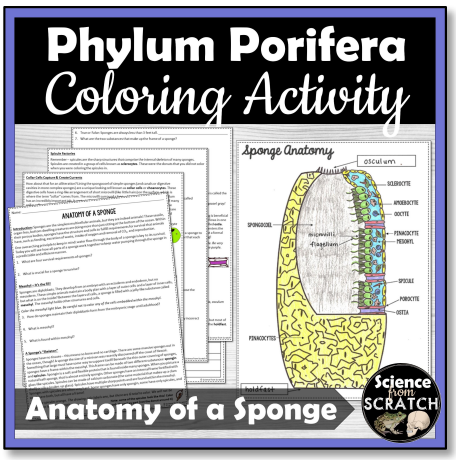

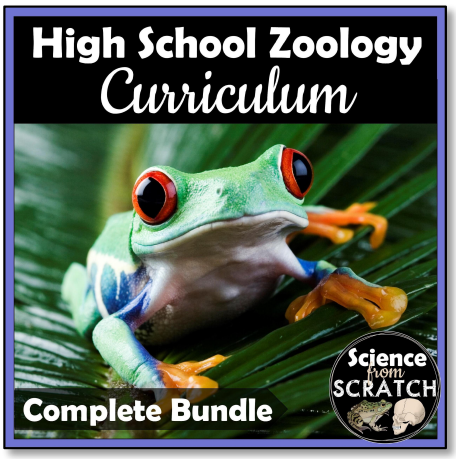

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