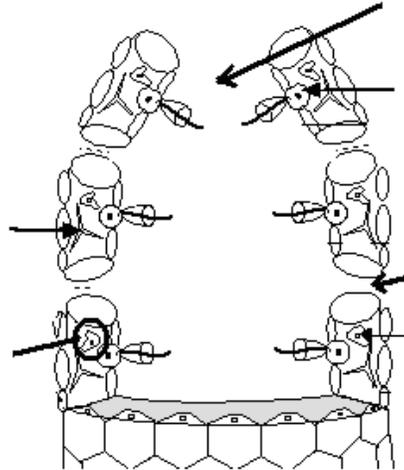


Phylum Porifera

Use your textbook and the page references to answer the questions below. **Miller/Levine:** P561-563. **Nelson:** P304-306

Structure & Function

1. Label the following diagram using the terms osculum, pore, spicule, amebocyte, and collar cell.



2. Describe the function of each of the following structures.

- a) osculum –
- b) pore –
- c) spicule –
- d) amebocyte –
- e) collar cell –

3. Show the direction of water flow through the sponge by drawing arrows in the diagram above.

4. Explain the process of filter feeding in sponges. Be sure to mention the role of the: osculum, collar cells, food vacuoles, amebocytes, and water currents.

Reproduction

1. Explain asexual reproduction in sponges.

Sexual reproduction:

2. Most sponges are **hermaphroditic**. What does this mean?

3. Sponges reproduce only one type of gamete at a time to ensure that they do not self-fertilize.

a. After fertilization of the egg, what happens?

b. This process is called **metamorphosis**. What does this mean?

Ecological Roles

1. Explain ecological roles of sponges.

2. Why are sponges generally safe from predation by other organisms?

3. What would happen to a sponge living in a limited supply of stagnant water?

4. Colchicine is a chemical that stops the action of flagella. What would happen to sponges if colchicine was present in the water that they lived in?

5. Why are sponges especially sensitive to water pollution?