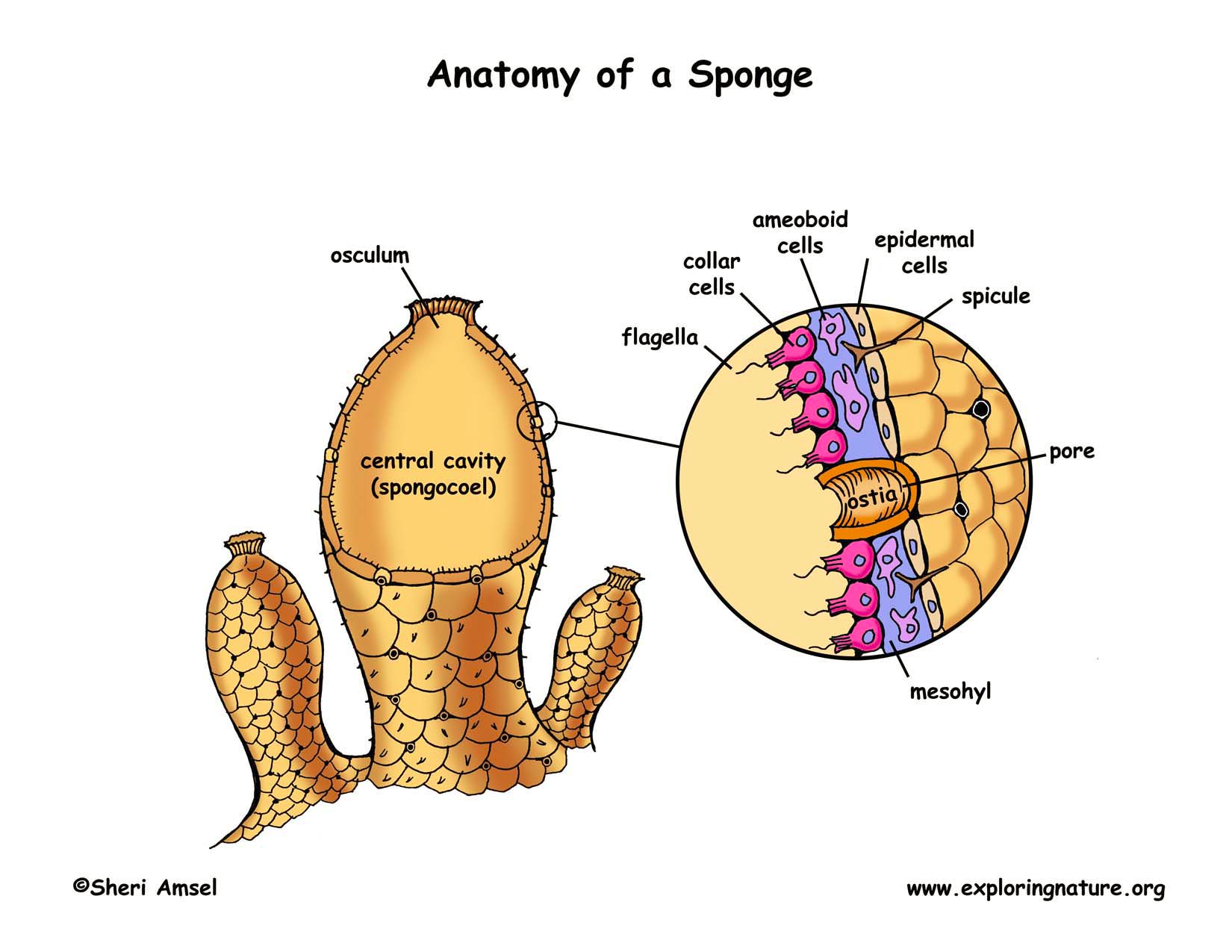
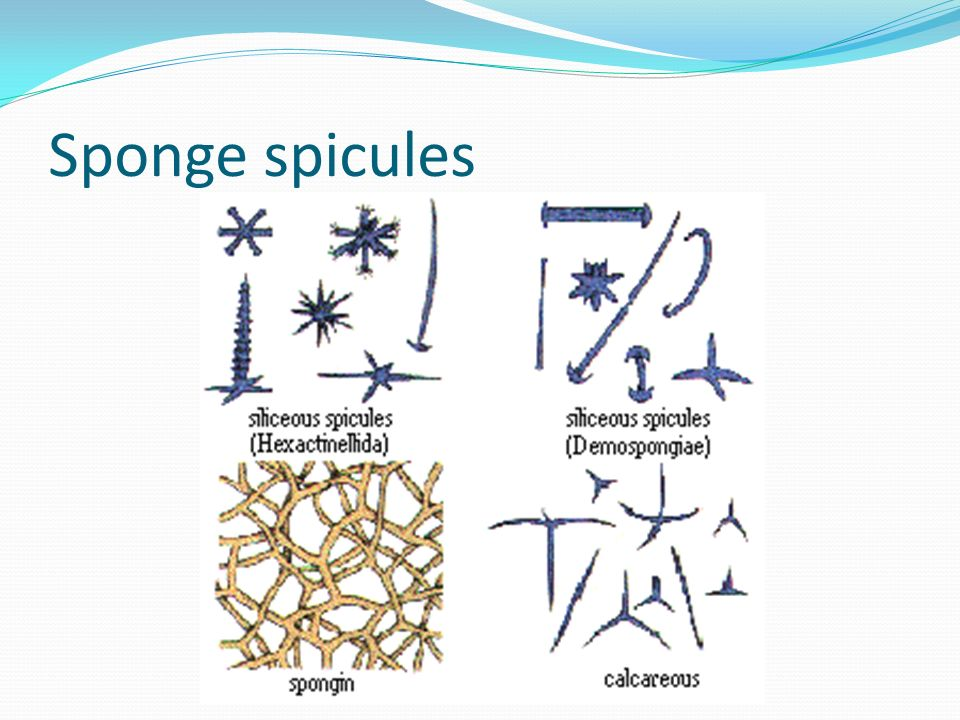
**Phylum Porifera: The Sponges** Name: Date:

**Phylum Porifera**

* Porifera = ‘\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_’
* One of the simplest and most unusual animals
* Have been on earth for at least 540 million years
* Most of them live a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ life in the ocean
* Most commonly used by humans for natural sponges for bathing
* They are considered animals because they are m\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, e\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, h\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and their cells lack \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* This phylum represents the first experiment in multi-cellularity for animals
* There are specialized cells, but they do no work cooperatively together - not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Simplest and most \_\_**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** animals
* Have changed little since they evolved

**Body Plan**

* Sponges are mostly \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , have no front or back ends, and no left or right sides
* Think of a large, hollow, cylindrical water pump
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (collar cells) are specialized cells that use flagella to move water through pores into the sponge
* Water exits the sponge through the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, large hole at the top
* This movement of water is for feeding, respiration, circulation, and excretion
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (archaeocytes) are motile cells which have a variety of functions including delivering nutrients to other cells and creating eggs for sexual reproduction
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (epidermal) cells are flat cells which cover the outside of the sponge
* Sponges have a simple skeleton
* ****In harder sponges, the skeleton is make up of spiny \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* A spicule is a spike-shaped structure made up of chalklike calcium carbonate or glass-like silica
* Softer sponges have an internal skeleton made up of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, a network of flexible protein fibres

**Spongin Spicule**

**Feeding, Respiration, Circulation, and Excretion**

* The movement of water through their bodies is to carry out body functions
* Sponges are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which means they filter food particles from the water using their choanocytes.
* Oxygen from the water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and waste products like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into the central cavity and out the osculum

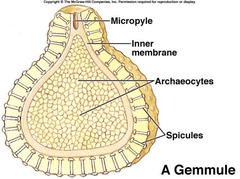
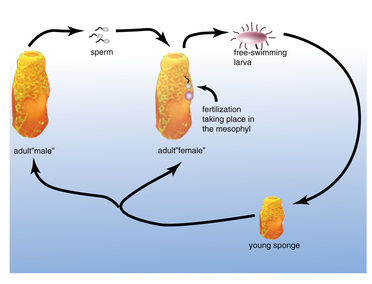
**Response**

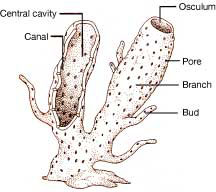
* Sponges do not have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that would allow them to respond to their environment however, some sponges create toxins that are unpalatable or poisonous to potential predators.

**Reproduction**

* Sponges can reproduce either sexually or asexually
  + Sexual - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Larvae are motile and move to a different location
  + Asexual – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a new sponge clone forms on the side and

eventually forms a clone

****- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: in unfavourable conditions, the sponge can surround ameobocytes (archaeocytes) in spicules forming a gemmule which can survive the harsh conditions then regrow the sponge

****

**Can You …**

**… draw and describe the body plan of a typical sponge including each cell’s role within the sponge?**

**… explain water’s role in sponge survival?**

**… describe how a typical sponge reproduces and obtains nutrients?**