



WORKSHEET 10

School: Ba Sangam College  
Year: 13

Subject: Biology  
Name: \_\_\_\_\_

<b>Strand</b>	<b>13.3 Biodiversity Change and Sustainability</b>
<b>Sub strand</b>	<b>13.3.2 Diversity Of Life</b>
<b>Content Learning Outcome B13.3.2.2</b>	<b>Kingdom Monera Describe the characteristics that separate organisms in this kingdom to different categories</b>

**Phylum Porifera (Sponges)**

(3 marks)

- Pore bearer
- Multicellular
- Sessile in nature
- Asymmetrical and some are radially symmetry
- Porous body
- They live in colonies
- Are aquatic
- Have free-moving (Motile Layers)
- Are closely related to choanoflagellates (protists)
- They have no mouth-water enters sponge through ostia and exit through oscula.
- The skeleton is made of spicules.

**2.Pinacocytes**

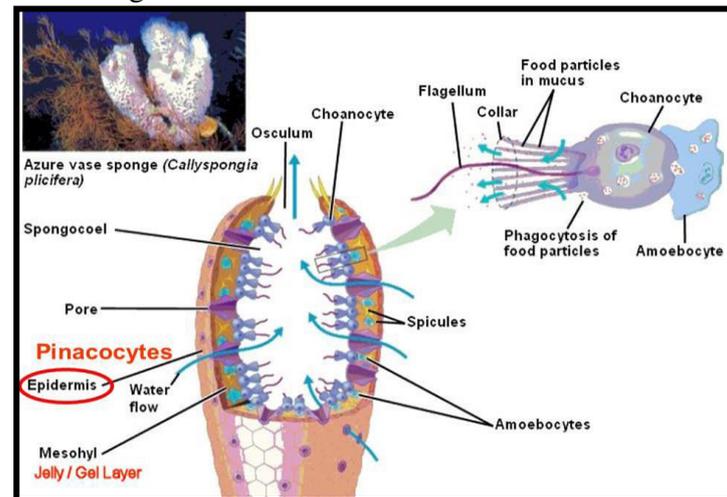
- form outer “epithelium” and sometimes lines inner passages
- thin flat cells
- some are contractile = myocytes in circular bands around oscula is to regulate water flow

**Body Form of a Sponge**

**Cell Types**

**1. Choanocytes (collar cells)**

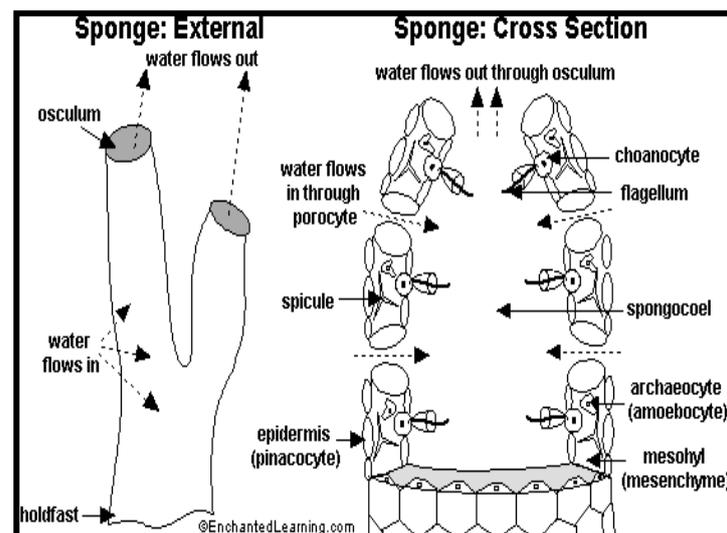
- probably the most distinctive and most important of sponge cells
- Have flagella
- surrounded by a sieve-like **collar** that acts as a strainer
- the flagellum beats to draw the water currents into the sponge
- food is absorbed (phagocytosis) by the collar cell and then sent to other cells in the sponge (amoeboid cells)
- Carry out filter feeding



**Activity**

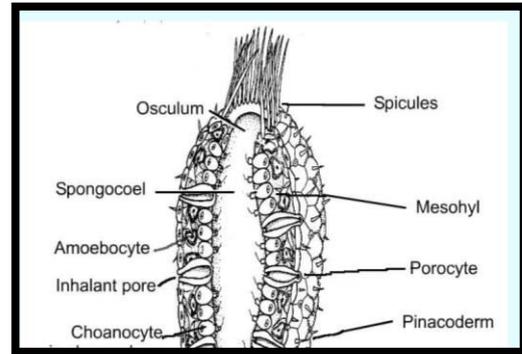
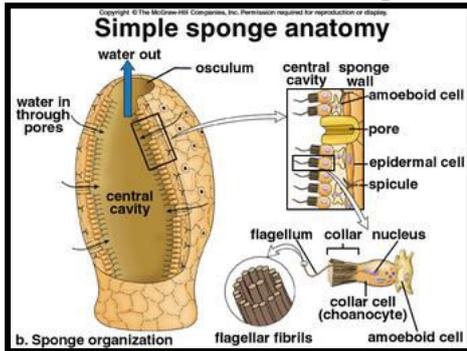
1.State the functions of:

- a.Choanocyte: \_\_\_\_\_
- b.Porocytes: \_\_\_\_\_
- c.Amoebocytes: \_\_\_\_\_



### 3. Porocytes

- Tubular cells form the pores (ostia)



### Support in Sponge

- **Skeleton**-made up of spicules-maintains the shape and keeps pores and canals open.

### Feeding and Digestion in Sponges

- Are filter feeders-feed on detritus, plankton and bacteria
- Archaeocytes- absorb larger particles
- Choanocytes-absorb smaller particles
- Absorb nutrients directly from water

### Reproduction and Development

#### a. Asexual

- **Regeneration**-ability of organism to grow missing parts.
- (i) **Budding**: small buds that break off and lie separately.
- (ii) **Gemmules**-fresh water sponge during cold and dry weather form specialized buds enclosed in encapsulated cells. It can survive harsh conditions.

#### b. Sexual

- Can be monoecious (hermaphrodites)-containing both male and female reproductive organs and dioecious (distinct male and female individual organisms)
- Sperm is released into the water and enter another sponge through ostia or pores to fertilize the eggs.

### Activity

1.State 2 features of porifera.

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(2 marks)

2.Name the 3 cells that are found in the sponge.

### 4. Archaeocytes

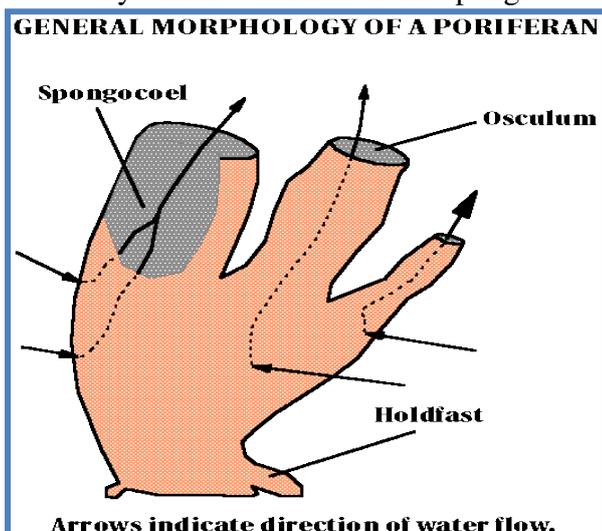
- amoeboid cell types
- move about in mesophyll matrix
- Phagocytize old cells
- different parts of cells are:
- Sclerocytes-secrete spicules
- Spongocytes-secrete spongin
- Collencyotes-secrete collagen\
- Remove particles from choanocytes for digestion.

### 5. Ostia

- incurrent pores that open into a central cavity called the spongocoel;
- it is lined with choanocytes or collar cells.

### 6. Osculum

- opening of the spongocoel to the outside by which water leaves the sponge



\_\_\_\_\_ (3 marks)