



High School Science Virtual Learning

**General Biology**

**Classification: Sponges**

May 6, 2020



# High School Science

## Lesson: May 6, 2020

### **Objective/Learning Target:**

Students will be able to learn about and explain the classification (binomial nomenclature) of Sponges, members of the phylum Porifera

## **Let's get started:**

1. Have you heard of sponges in the ocean? If so, what can you recall about them?
2. Do you know which Kingdom they are categorized in? Are they invertebrates or vertebrates?
3. Are all sponges found in a single Class?

## Let's get started: **Answer Key**

1. Answers will vary for each student. Use this [article](#) to answer this and other questions you might have.
2. Sponges (Porifera) are members of the Kingdom Animalia. They are invertebrates.
3. Sponges are divided into 3 main classes which are: Class Calcarea, Class Hexactinellida, and Class Demospongiae.

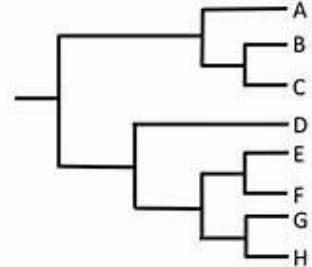
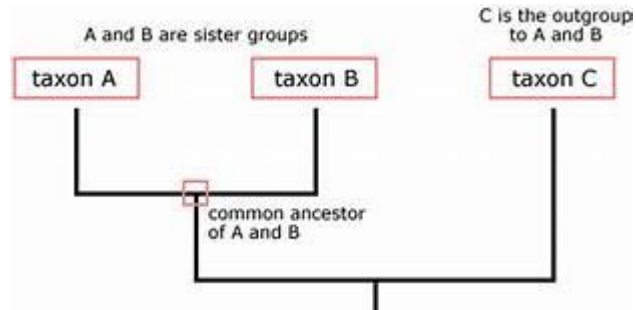
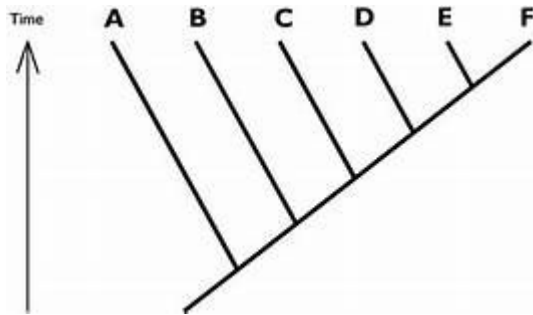
## Lesson Activity:

### Directions:

1. Watch these two videos for interesting facts about sponges: [video1](#) and [video2](#)
2. While doing this, take detailed notes about the facts and your observations in your notebook or on a separate piece of paper.
3. Create a simple phylogenetic tree of sponges, you may do this in your notebook or on a separate sheet of paper.

## Lesson Activity: (continued)

Use these images to help with #3 on previous slide





# Practice



You will use the information from the previous article, videos and your answer keys to help answer the following questions.

## Practice Questions

1. What is the phylum (classification) name given to sponges?
2. Write down some characteristics for each class of Porifera: Class Calcarea, Class Hexactinellida, Class Demospongiae
3. What is being debated on about sponges (hint: classification)?
4. Sponges are sessile filter feeders which mean what?
5. Which class of Porifera has two subclasses?
6. What is a major difference between the choanocytes of these two subclasses?

## Practice Questions (continued)

7. Illustrate in your notebooks each type of Profera talked about in this lesson (try to capture their uniqueness) showing details of differences.
8. Is it true or false that sponges have nerve cells?
9. How many types of reproduction are used by sponges?
10. List the types of reproduction.

## Answer Key

1. The phylum or classification name given to sponges is Porifera.
2. Answer may not include all mentioned in article and videos. Some EX:

Class Calcarea: restricted to shallow water, has 2 subclasses (Calcinea and Calcaronea, mostly small in size (<15cm), form irregular masses, have spicules made of calcium carbonate

Class Hexactinellida: also known as Hyalospongiae, found in deep waters, 6-rayed spicules made of silica, anchor in soft bottom sediments, they are cup, vase, or urn shaped

## Answer Key (continued)

Class Demospongiae: spicules are made of silicon dioxide and/or spongin fibres, most sponges belong to this class, species vary greatly in form and size, many may develop a secondary deposit of silica on its body.

3. It is being debated whether sponges should be in the classification of colonial protozoans (protists) instead of metazoans (animals).

4. Being a sessile filter feeder means that sponges do not move.

5. Class Calcarea has two subclasses which are Subclass Calcinea and Subclass Calcaronea.

## Answer Key (continued)

6. The choanocytes of the Subclass Calcinea arise independently of the nucleus; whereas, the choanocytes of the Subclass Calcaronea arise directly from the nucleus.
7. Each drawing will vary based on observations by each student, but should show the main characteristics of each species.
8. False, sponges do not have nerve cells.
9. There are four types of reproduction used by sponges.
10. They are asexual (budding), regeneration, survival pods, and sexual reproduction.



# More Practice



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For more fun with Porifera knowledge click [here](#) for a Quizlet and for extra reading, you may find these articles interesting: [Article 1](#), and [Article 2](#)