

# Sponge Spicule Lab

**Grade Level:** 8<sup>th</sup> grade and above

**Summary:** Students will discuss the basic anatomy of a sponge, feeding, reproductive and defense mechanisms that these simple organisms possess. Sponge spicule composition and function will be discussed before students dissolve various species of sponges in order to locate and identify spicules with the use of a compound microscope.

## Program Objectives:

- Students will understand that even the simplest multicellular animals must survive as an animal: feed, reproduce and defend
- Students will understand the physical composition of Phylum Porifera
- Students will use a compound microscope in order to identify sponge spicules of various local species

## Concepts Covered:

- Basic sponge anatomy
- Function and composition of sponge spicules
- Cellular organization of sponges
- Survival characteristics amongst Phylum Porifera
- Use of compound microscope for spicule/sponge identification
- Importance of sponges in the subtropical marine ecosystem

**Vocabulary:** holdfast, filter feeder, spicule, spongin, chemical defense, calcium carbonate, silica oxide, asymmetry, sclerocyte, spongocoel, choanocyte, archaeocyte, totipotent

**Procedures:** Activity is preceded by a discussion on sponges: feeding, reproduction and defense. Basic sponge anatomy described and diagrammed. Students work in pairs to break up pieces of dried sponge and soak in diluted bleach to isolate sponge spicules. Microscope slides of this spicule solution are made and compound microscopes are used to identify spicules and correlate with appropriate species.

## Extensions:

**Resources:** Pechenik, Jan. "Biology of Invertebrates." 2015



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