



What is an Animal?

Video Titles:

Sponges: Origins

Activity Subject: Characteristics of an animal, gathering evidence

Grade Level: 7 – 12 grades

Introduction

In this lesson students discuss the definition of an animal. What characteristics do all animals have in common? To introduce the subject the teacher gives a brief discussion of the five kingdoms (see reference below). What evidence is needed to decide that an organism is an animal? Students watch the video *Sponges: Origins* and reconsider the definition of an animal.

Assessments

Written and class discussion

Time

Single period

Group Size

Any class

NEXT GENERATION SCIENCE STANDARDS

PERFORMANCE EXPECTATIONS:

Students who demonstrate understanding can:

MS-LS4-2- Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.

MS-LS1.A - Structure and Function

All living things are made up of cells, which is the smallest unit that can be said to be alive.

An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular).

In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions.

LEARNING OBJECTIVES:

Through questioning, evidence gathering, discussion, and observing video, students evaluate evidence that helps define what is an animal.



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Materials, Preparation and Procedure

Materials and Preparation:

- Science notebooks or "What is an Animal" worksheets
- Access to the internet. You will be referencing one video: Sponges: Origins
- References: http://www.ric.edu/faculty/ptiskus/six_kingdoms/

Procedure:

1. Teacher starts the class by asking the students how would they decide that an organism is an animal. They discuss the kinds of evidence they would need. The types of evidence are written on the board. The teacher tries to direct the class to the basic characteristics.
2. This could include a discussion about why bother to define or classify an organism as an animal.
3. The teacher briefly introduces the five kingdoms to help the students understand about classification. A reference for this discussion is: http://www.ric.edu/faculty/ptiskus/six_kingdoms/
4. The teacher then makes a list of possible organisms on the board and asks the class to consider whether each is an animal or not. (worm, flea, starfish, sponge, venus fly trap, bacteria....)
5. This activity may change the class' definition of an animal.
6. The class watches the video Sponges: Origins
7. The students fill out the worksheet.
8. The class then returns to the discussion about what makes an organism an animal. Hopefully the definition will be refined.



Sponge Lesson Plan Worksheet

What is an Animal? Student's Edition

Procedure

1. What ability did cells evolve that helped lead to the first animal?
2. What modern animal can we study to learn about the first animal?
3. Where do sponges live?
4. A sponge looks lifeless, what evidence did you observe that it is an animal?
5. What can sponge cells do that other animals' cells cannot?
6. How does a sponge's skeleton differ from ours?



Sponge Lesson Plan Worksheet

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Procedure

7. What are spicules? Why do you think they are so diverse?

8. What are choanocytes?

9. What does pumping do for the sponge?

10. What does the inside of a sponge look like?

11. Do sponges have tissues or organs?

12. Write about how your ideas about the first animal have changed after watching this video.