



Red Tide Activity 2: Is it a plant cell or an animal cell?

Purpose:

To show that some organisms have adapted both plant and animal characteristics in order to survive.

Time Required:

- 20 minutes (after a lesson reviewing the basic parts of a cell)

Safety issues:

None

Materials:

- Copy of "A Typical Dinoflagellate" worksheet for each student
- Article on Harmful Algal Blooms from *Interactive Teacher* magazine (Nov/Dec issue)

Procedure:

- Read to students or have them read the magazine article on plankton.
- Students should have a basic understanding of the typical parts of a cell in order to complete this activity.
- Give each student a copy of the "Typical Dinoflagellate" worksheet. Have the students complete it independently or as a group.
- Discuss how the tiny algae have both plant and animal characteristics.
- Discuss how these characteristics help them survive when conditions change, or they are carried to new areas by ocean currents.

Assessment:

Check for correct answers

1. protective plates, cell wall, chloroplasts
2. mitochondria, flagella
3. golgi bodies, nucleus, chromosomes
4. Cell walls can protect dinoflagellates from changes in salinity, chemicals in the water, changes in temperature, etc.
5. Flagella are used for movement.
6. Answers may vary. They are classified as plant-like protists.

7. You may wish to discuss with the class how successful dinoflagellates appear to be and how we are just learning about how they impact the environment.

Extensions:

Have students look up different types of dinoflagellates to see how they affect the environment.

Use the internet to study ocean current patterns and how they carry plankton around.

Internet Links:

- Use [this gallery of phytoplankton images](#) to test the students' ability to identify parts of a phytoplankton cell.
- Rutgers University - [Project Tomorrow](#) (marine-based science activities).

Background:

This activity requires a student to be familiar with basic cell structure. It also requires a some knowledge of plant and animal characteristics in cells.

Key Words

- Dinoflagellate - One type of single-celled organism known as phytoplankton
- Pusule - Specialized vacuole opening through the cell in the area of the flagella.
- Plates - Armor around the cell that is composed of cellulose and sugar