Name Period Date

Unit 1	Handout _____	*Lesson 6: Volvox Observations*

Purpose:	To explore the structures, function, and classification of the protist Volvox.
Instructions:	Follow the detailed instructions below.

Instructions for Part 1:
- See Mr. Ower for a drop of the Vovlox culture. Cover the drop with a cover slip
- With your partner, locate the protist at 100X. Center one in the field of view and move to 400X. If you cannot keep the protist centered at 400X, return to 100X.

Data and Observations

1. Write 1-3 sentences that describe the appearance of the volvox.

The volvox is a sphere of small, green cells held together by fibers. Each cell has two flagella. Each cells looks like it has a red spot which would be an eyespot.

2. Write 1-3 sentences that describe the movement of the volvox.

The volvox spins, twirls, and tumbles through the water. There doesn't seem to be any pattern to how it moves.

Instructions for Part 2:
Please read the following information and use it complete the rest of this sheet.

Volvox are a colony of unicellular organisms that live together. The volvox colony can have anywhere between 500 and 50,000 individual organisms that forms a hollow ball. However, a more recent study estimates that the average is around 6,000 organisms. Because there are so many members in the colony, the individual organisms can take on specific jobs. This means they are specialized.

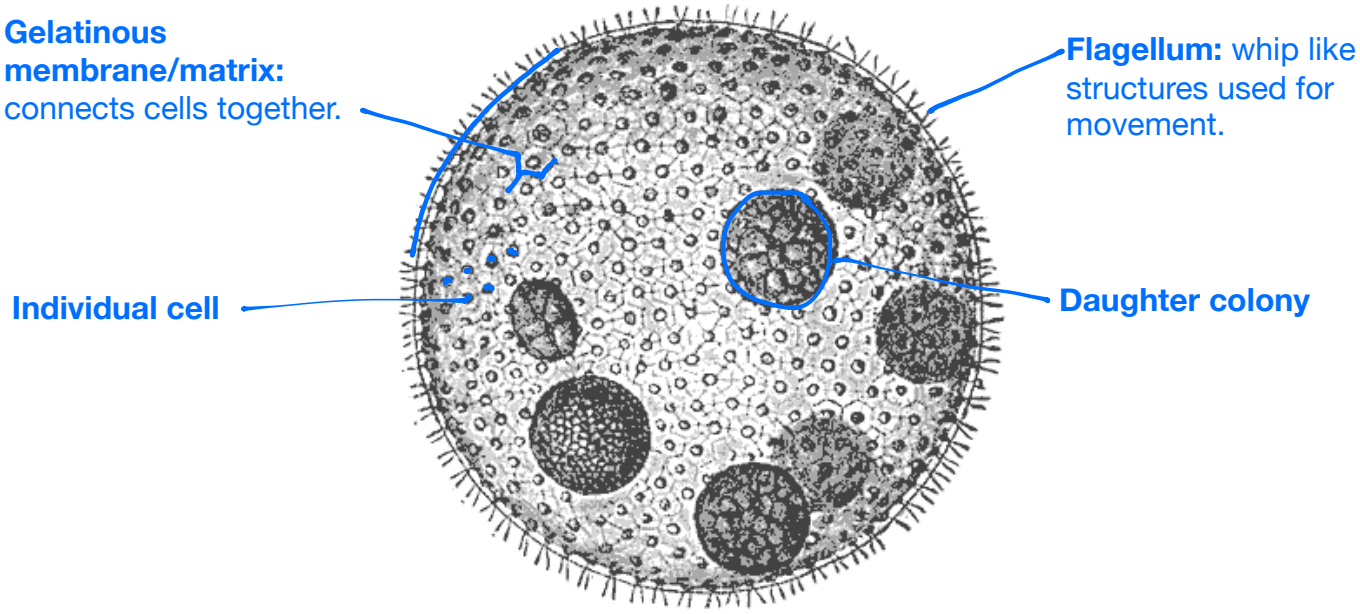
The cells are held together by a substance known as the **gelatinous matrix**. This allows the cells to work and move together. To move, each cell has two **flagella**. Together, the colony beats the long whiplike flagella in a synchronous motion. This directs the colony to where it needs to go.

Like the Euglena, the volvox have an **eyespot** in each cell that helps them detect sunlight. They need sunlight for photosynthesis which occurs in the **chloroplasts** of their cell. This is what gives the volvox its green color.

Volvox can reproduce sexually and asexually. Some of the organisms in the colony are specialized for reproduction. Some of these organisms are male and others are females. They will produce the **daughter colonies**, which are the dark green spheres

found within the colony. Once the daughter colonies are mature, the parent colony breaks apart and release the daughter colony.

Part 2 continued
Below is a drawing of a volvox. Page 83 in your textbook has a great diagram of one you can use to help you label the diagram. Label and define the following parts: daughter colony, flagellum, gelatinous membrane, individual cell, Be sure to use straight lines when drawing your label lines. It is okay to write your labels and definitions within the drawing space.



Reflecting Questions
Write 2-3 sentences that answer each of the following questions.

1. What subgroup of protist do volvox belong to? How do you know?

Volvox belong to the algae subgroup. The volvox have chloroplasts which they use to make their own food through photosynthesis. This makes them autotrophs and therefore algae. They also have eyespots. Eyespots are used to detect light to aid in carrying out photosynthesis.

2. A student says "Volvox are protozoa because they move." They are incorrect. Explain why they are incorrect.

The student is wrong because protists are subclassified by how they get their energy, not based on if they move. Volvox are algae because they are autotrophs.