

Unit
1Handout

Lesson 6: Euglena Observations

Purpose:

To explore the structures, function, and classification of the protist Euglena.

Instructions:

Follow the detailed instructions below.

Instructions for Part 1:

- See Mr. Ower for a drop of the Euglena 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 euglena.

The euglena are elongated and taper at one end. They are green in color. They have a red spot inside them. They also have a long whiplike tail.

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

The euglena swim and twirl about. They are able to change directions by bending their bodies.

Instructions for Part 2:

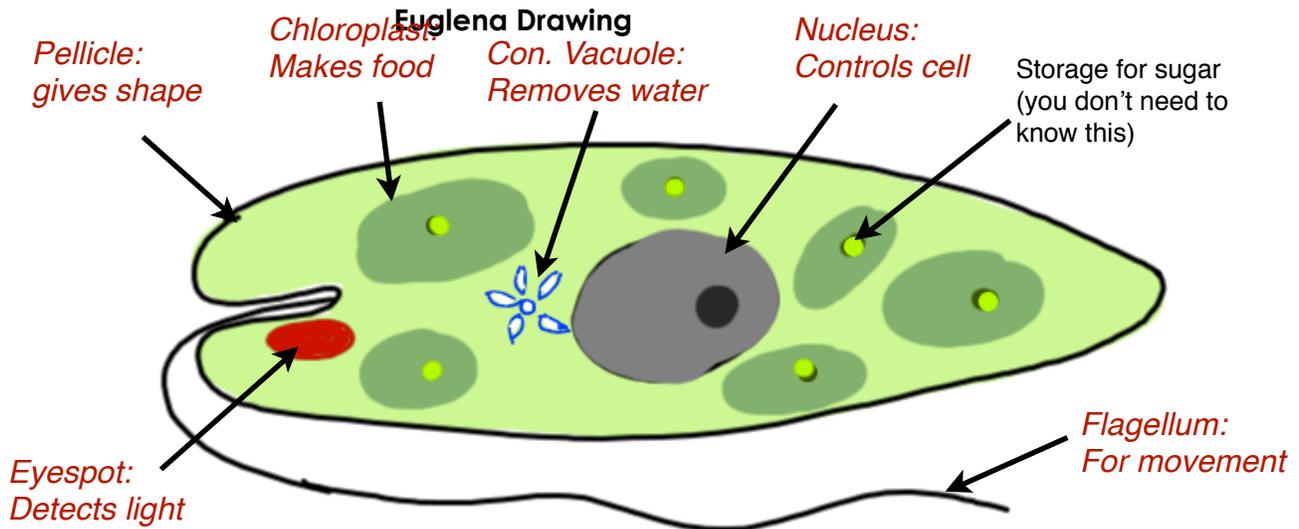
Please read the following information and use it complete the rest of this sheet.

Euglena are unicellular protists that live in freshwater. The name of the euglena comes from Greek words that mean "true pupil of the eye." It received this name because it has a part called an **eye spot**, or stigma, that is used to detect light. It is red in color and appears near the flagella. The reason it has this part is because the euglena needs sunlight to make its food. It makes its own food from photosynthesis using its **chloroplasts**, just like a plant. However, when there is limited sunlight, a euglena can eat other organisms. So, does this classify it as a heterotroph, an autotroph, or both?

In addition to having a **nucleus** and **cell membrane**, euglena have specialized cell parts that help them do their job. They have 2 **flagella**, which are long whip like structures that help them move. The outer part of their cell is called the **pellicle**, which is a stiff but flexible layer that helps give the euglena its shape. They also have a **contractile vacuole**, which collects and removes excess water that enters the cell. It can appear star-shaped when empty or circular in shape when full. It is hard to see the contractile vacuole because the euglena is so small.

Part 2 continued

Below is a diagram of a euglena. Page 83 in your textbook has a great diagram of one you can use. Label and **briefly** define the following parts: chloroplast, contractile vacuole, eyespot, flagella (flagellum), nucleus, pellicle. Be sure to use a ruler when drawing your label lines.

**Reflecting Questions**

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

1. What characteristics of the euglena make it like an animal?

A characteristic of the euglena that makes it like an animal is its ability to eat other organisms for energy.

2. What characteristics of the euglena make it like a plant?

Two characteristics of the euglena that makes it like a plant are its chloroplasts and its eyespot. The eyespot helps it detect light so it can use its chloroplasts to make food.

3. In which group of protist would you classify this euglena: protozoa, algae, or decomposer? Explain your choice by defining the category. Then, support your choice with evidence.

I would classify the euglena as an algae because it primarily makes its own food through photosynthesis. It only consumes other organisms if it is unable to photosynthesize.

4. If you fill a flat tray with millions of euglena, put it in sunlight, and cover half of it, all the euglena (well, the smart ones), will swim to the side with sunlight. Using the words eyespot, photosynthesis, and sunlight, explain why the euglena swam to the other side.

The euglena swam to the other side because their eyespot detected the sunlight. They need the sunlight to carry out photosynthesis in order to make food.