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**Lab: The Euglena**

**Purpose:** To study the euglena which is classified in the ***Protista*** kingdom. The euglena is a unicellular organism capable of maintaining life with a minimum of organelles (specialized structures within a living cell).

**Pre-Lab:**

Euglena is typically a green color and is a type of algae. It is considered to be a plant-like protist due to producing food/energy, but it is *not* considered to be in the plant kingdom because it also consumes food and is unicellular. Euglena can act as an autotroph or heterotroph.

1. Why isn’t Euglena considered a plant?

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Euglena is a unicellular organism that moves by using its flagella. Flagella are whip like structures which allows the euglena to move. Euglena actually has 2 flagella but one is short and the other we can typically see is long.

1. Describe the function of flagella.

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Euglena is plant like because it has chloroplasts which is why usually they are a green color. **Chloroplasts** are small organelles inside the cells. They absorb light to make sugar in a process called photosynthesis. **Chloroplasts** contain the molecule chlorophyll, which absorbs sunlight for photosynthesis. **Photosynthesis** is the process by autotrophs make food. It is a chemical process that uses sunlight to turn carbon dioxide into sugars the cell can use as energy.

1. Describe chloroplasts.

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1. What is the function of photosynthesis?

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Euglena is typically found in ponds and lakes. They are excellent swimmers and they have an eyespot/stigma which helps them locate sunshine for the process of photosynthesis.

1. Why is the eyespot important for euglena?

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Euglenas reproduce by simply splitting in two, just like amoebas and paramecium. This is a form of asexual reproduction and is called binary fission.



1. What is asexual reproduction?

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1. What is binary fission?

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**Lab Activity**

Materials:

*Euglena prepared slide & microscope*



1. Examine the euglena slide under low power (40x).
2. Locate the euglena, which is sometimes a green color.
3. Once focused and centered go to medium power (100x).
4. Go to high power (400x) and observe the specimen (euglena).
5. Make 3 drawings of the euglena moving at 3 minute intervals in the spaces provided.
6. Use arrows to indicate the flow of the cytoplasm in the euglena.
7. Label: the nucleus and flagella.

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| --- | --- | --- |
| Time | Total Magnification*(Ocular lens x Objective)* | Observations |
| 0 minutes |  | /Users/emilyumile/Desktop/download-1.png |
| 3 minutes |  | /Users/emilyumile/Desktop/download-1.png |
| 6 minutes  |  | /Users/emilyumile/Desktop/download-1.png |



1. What kingdom does the euglena belong to?

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1. How does the euglena obtain food/energy?

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1. What cell type does euglena have, Prokaryotic/ Eukaryotic?

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1. Is euglena unicellular or multicellular?

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1. Describe how euglena moves or accomplish locomotion.

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1. Where is euglena typically found?

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1. What is the function of the eyespot/stigma?

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1. How does the flagella reproduce?

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1. Why are algae like euglena not grouped in the plant kingdom?

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***Label the euglena below***

* *Flagella*
* *Eyespot/Stigma*
* *Nucleus*
* *Chloroplast*
* *Cell membrane*

