

Name: _____ # _____

Date: _____ Core: _____

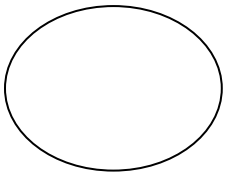
Diversity of Protists

Some of the most complex single-celled organisms found on the entire planet are classified as protists. Protists are in essence what we call the “leftover” organisms because they include all the eukaryotic organisms, single or multi-celled, that cannot be classified as an animal, plant, or fungi. Even as early as Anton van Leeuwenhoek, who noticed these “animalcules” in pond water, we have observed their unique characteristics and been fascinated by their diversity. In this activity...see how many protists you can find.

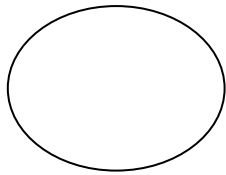
You will use “proper microscope use” as your guide for set up, viewing your specimen, and clean up for this entire lab. Be sure the teacher sees you using it!

Part 1: Become Familiar with the Protists

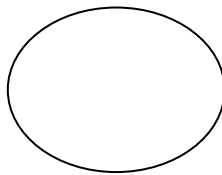
- 1) Rotate through the stations as your teacher directs.
- 2) Using your “proper microscope use” as your guide, set up the slide assigned to each station, view under low, medium, and high power.
- 3) While in high power, sketch 1-3 (there may be many more but only draw 1-3 to save time) organism(s) exactly as you see them through the eyepiece. Make sure you are drawing each specimen in the correct location below. Don’t forget to include the total magnification power for each.



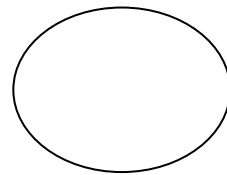
Euglena, _____X



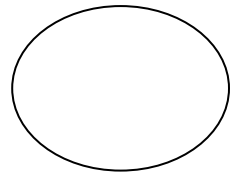
Paramecium, _____X



Volvox, _____X



Spirogyra, _____X



Amoeba, _____X

- 4) Each of the above organisms has a unique characteristic that plays a special role for that organism. Complete the chart below using the information sheet provided by your teacher.

Organism	Special Feature	Function
Euglena	Flagellum	
Paramecium	Cilia	
Volvox	Colonies	
Spirogyra	Chloroplast	
Amoeba	Pseudopod	

- 5) In your drawings above, label one of each special feature for that particular organism. (Use a ruler to draw your line identifying the part and do not put an arrow at the end of the line.)
- 6) What do all of the above cells have in common?

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7) Mode of Nutrition—Protists can be classified into two categories as far as their nutrition (ability to obtain energy) is concerned—AUTOTROPHS and HETEROTROPHS. The plant-like protists, predominantly referred to as algae, can create their own energy by the process of photosynthesis. Photosynthesis requires specialized organelles called chloroplasts filled with chlorophyll to trap light energy from the sun. Once that light energy is trapped, light energy can be used to break the bonds between **water** and **carbon dioxide** to convert it into **oxygen** and **glucose (food/energy)** for the cell/organism). All algae are autotrophs because they can create their own energy.

The animal-like protists referred to as protozoa cannot create their own energy...just like you! They can only get their energy from the life process, cellular respiration, that takes place in the mitochondria of every cell. They must eat or consume other organisms and through cellular respiration, they will convert **glucose** and **oxygen** into **water, carbon dioxide** and **mechanical energy** that fuels all their cells. All protozoans are heterotrophs (as are you!).

Based on what you read above, create a graphic organizer or illustration to show you understand the two ways protists can obtain food/energy—be sure to include organelles, life processes and other specifics.

Application

You are interviewing for a job with Carolina Biological and you are asked, “What makes the protozoa (organisms in the Protista Kingdom) unique?” How would you respond...be sure to include examples of organisms and how they are special.