**Using a Light Microscope to Investigate Single Celled Organisms*:***

***Paramecium* and *Chlamydomonas***



**Safety**

* There are no specific safety hazards associated with this practical.
* Normal laboratory rules should be followed.

**Apparatus and Materials**



* Organism cultures
* Microscope
* Microscope slides
* Coverslips

**Introduction**

*Paramecium* is a unicellular organism that lives in freshwater. It feeds by ingesting small items of food through its oral groove. Food is digested inside the animal’s body, inside a food vacuole. *Paramecium* is one of a group of organisms known as ciliates because they move in water using rows of tiny cilia, which beat to propel them along.

*Chlamydomonas* are green algae. *Chlamydomonas are* a common component of plankton and are often used by biologists to study pollution and photosynthesis.

**Directions**

1. Find the pond water at your lab station.
2. Using the pipette, place a drop of pond water onto a microscope slide.
3. Add a coverslip.
4. Examine the slide with a microscope, being sure to follow proper microscope techniques of use.
5. Look for a *paramecium* and then a *chlamydomonas*. Here is an [identification guide to pond water organisms](https://drive.google.com/file/d/0B7EoydxcWA7pUGxkVFpDaXJnY0RSVUNrMTJSQ2NnbmhiY3Fv/view?usp=sharing).
6. In the space above the table in your note packet, sketch one of each organism, a *paramecium* and then a *chlamydomonas*. Be sure to identify each species with a title.
7. In your note packet, complete the table by writing 1-2 sentences for each organism explaining how the cell is capable of performing **all 8** **functions of life**. You will likely need to do some independent research about the organisms in order to complete the table. Start here with this [guidance information](https://docs.google.com/document/d/1lswyu9WHVFvse7S_UiNzMmHIdu0Egz0AoK9ONe8tuKA/edit?usp=sharing).

For example:

|  |  |  |
| --- | --- | --- |
| **FUNCTION OF LIFE** | ***PARAMECIUM*** | ***CHLAMYDOMONAS*** |
| Homeostasis | Contractile vacuoles remove water from the cell to keep the water content in the cell within a tolerable limit. | *For you to complete!* |
| Response to environment | *For you to complete!* | A light sensitive “eyespot” can sense bright light and the cell will respond by swimming towards it. |

Click on the links below to watch a video of *paramecium* and *chlamydomonas* under the microscope. Use these videos to help you complete the table from above.

*Paramecium:* <https://www.youtube.com/watch?v=WFpBRfLtbIo> & <https://www.youtube.com/watch?v=cGOmvWv5jyk>

*Chlamydomonas:* <https://www.youtube.com/watch?v=EMNFZnDt75c> & <https://www.youtube.com/watch?v=Md0PtdRxXvw>