**Cells Lab 3: Living Plant Cells with Chloroplasts**
Biology A

Name_____Per____

Lab Partner_____

## Introduction

One of the most obvious features of our world is green foliage. Although few sights have more aesthetic appeal than the many shades of green in the forest and fields, we usually take the green-ness for granted, without pausing to ask why plants are green.

Four our first detailed observation of living *green* plant cells, we will use leaves of elodea, a common flowering plant which is widely distributed in fresh-water lakes, ponds, lagoons, and similar bodies of water. We find it frequently in pet shops where it is sold for planting in aquaria. (The scientific name of the plant is *Anacharis*, but we shall use the common name, elodea.)

As you observe these living cells in action, keep in mind that the green cells of elodea are very similar in general structure to the green cells of most plants we see growing, and that they perform a similar function: food manufacture in the presence of light (photosynthesis).

## Materials

| | |
|---|---|
| Compound microscope | Slide and cover slip |
| Elodea | Pipette |

## Procedure

1. Take one plant from a finger bowl and break off one of the younger leaves near the tip of the branch. Place it bottom side up in a drop of water on a *clean* slide and put on a cover slip.

2. When you look at this preparation under low power you will see that some cells seem to be packed with small green bodies. These bodies are called **chloroplasts**. If the material has been properly prepared you should be able to observe movement of the chloroplasts. As they move in the cell, chloroplasts look like little green beads in a chain – one following the next in rather regular order.

3. When you have found a cell showing movement of chloroplasts, observe it under high power. In your lab data book, make a sketch of this field of view.

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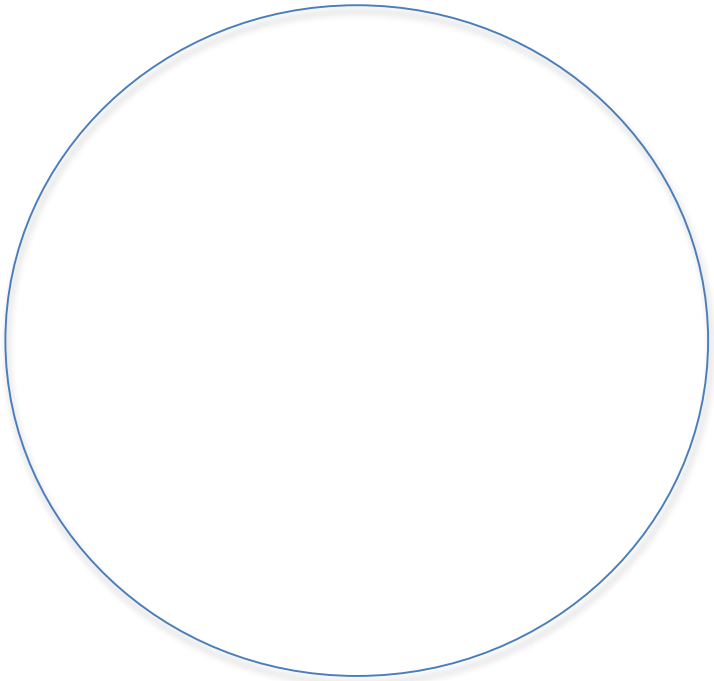
**Results:**

Title: _____



Total Magnification: _____

Estimated width of one cell: _____

**Analysis:** answer the following questions.

1. What is the difference in function between the cells that contain chloroplasts and those that do not contain chloroplasts?

2. Where in the cell are chloroplasts located?

3. What is the shape of a single chloroplast?

4. Chloroplasts have no means of independent locomotion – they cannot swim or creep around on their own. How, then, can you account for their movement?