LAB # _____Pond Water

Lab Instructor_____ Name_____
Date _____ Period_____

Objective: To observe various single celled organisms in pond water

******Use full sentences when answering all questions.******

Background

Cells are not always part of a multi-cellular (many celled) organism. Sometimes a single cell can live alone. These unicellular (single-celled) organisms show endless varieties of shapes, types of movement, and methods of food getting. One can obtain microscopic organisms for this investigation near dead or decaying matter in water or in the scum on the water's surface. Try to acquaint yourself with some of the inhabitants in this seldom seen world.

LAB

Materials

pond water samples, medicine dropper, compound microscope, slide, cover slip, lens paper

Procedures and Observations

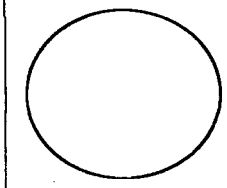
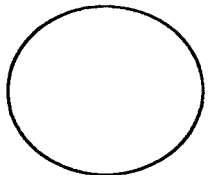
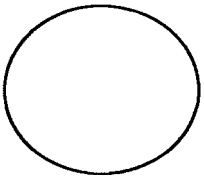
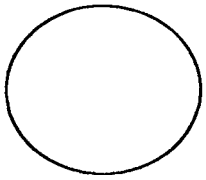
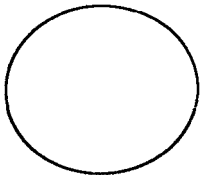
1. Use a medicine dropper to obtain a small amount of water and debris from the bottom of your water sample.

2. Place a drop of the water and the debris in the center of a clean slide. Cover with a cover slip. Search for single celled organisms with your low power (10X) objective lens. Switch to the high power objective (40X) for more detailed observations. Do NOT be discouraged if an organism is gone when you change from low to high power. Many of these organisms move rapidly.
   NOTE: Do not mistake air bubbles for living cells. In contrast to most living organisms, air bubbles show no evidence of movement. Also, air bubbles have a regular, round shape with a thick, dark border

3. This activity can be a scavenger hunt in which you learn to identify various unicellular organisms. You will also be able to identify different methods of movement.

   Try to find and draw the five different organisms described below. Use pencil for drawings.
   a. an organism that moves by cilia
   b. an organism that moves by flagella
   c. an organism with chloroplasts
   d. an animal
   e. a plant

For each drawing, give the magnification, the estimated size of the organism, and if possible, the name of the organism. Label those structures that you can positively identify. You can refer to your text and/or provided handouts for descriptions and illustrations of single celled organisms.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Name_____

Period_____

Conclusions

1. Is it always clear that cells are either plants or animal cells? Explain your answer.

2. Do you see any evidence that some of these organisms are dependent on one another? If so, give specific examples.

3. Draw a scale that shows the relative sizes of the following organisms and cells, from smallest to largest:
the bacterium *E. coli*, .000001 m; ameba, .0001m; certain human nerve cells, 1 meter; the marine algae *Acetabularia*, between .01 and .1 m; flu virus .0000001m, human red blood cell, .0001m.