

Name \_\_\_\_\_

Date \_\_\_\_\_

## Characteristics of Living Things Lab

### Objectives:

1. Observe living organisms and write down observations for each organism found.
2. Observe any characteristics that make the living things alive.
3. Find the approximate size of the organisms.
4. Draw accurate, detailed diagrams of the organisms observed.

### Procedure:

1. Using an eyedropper, transfer a drop of the sample of water onto a clean slide. Add a cover slip at a 45° angle onto the specimen. Observe the slide you prepared under a microscope under low power and then high power if needed.
2. Draw a diagram of all the living organisms. If you can't tell if a thing is living, ask the teacher.
3. Include in your diagrams:
  - a. Possible identification of the organism
  - b. Total magnification (ocular lens X objective lens)
  - c. Approximate size of the specimen
    - i. Fill in the following calibration chart for each objective by viewing a ruler under each lens and writing the diameter of the field of view.
    - ii. Estimate specimen size using your calibration chart.

Objective	Measurement
4x	_____ mm
10x	_____ mm
40x	_____ mm

- d. Add color to your diagram
4. Record detailed observations for each organism in the spaces provided.
5. Locate at least 4 different animals/protozoans and 2 different plants in the water sample(s).
6. You may have to make several different slides to find these organisms. Keep trying!

### Observations:

Fill in the detailed descriptions of your organisms below:

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_
4. \_\_\_\_\_  
\_\_\_\_\_
5. \_\_\_\_\_  
\_\_\_\_\_
6. \_\_\_\_\_  
\_\_\_\_\_

Questions: Answer the following in complete sentences.

1. List the life functions of living organisms below:

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2. List all of the life functions that you observed in the organisms that you viewed.

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3. From what observations can you infer that some of these organisms expend energy?

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4. What life functions would be difficult to observe in this type of investigation? Why?

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5. Which two life functions might be used to distinguish between plant-like and animal-like organisms? Explain

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6. What is wrong with using movement as a single way to determine if something is living or non-living?

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***Your Lab Report should include the following:***

**Title:** Please place this in the beginning of the lab or as a separate cover page.

**Objective/purpose:** State this clearly in complete sentences. Why did you do this lab? What is its purpose?

**Diagrams:** *Make sure you have included the following for each of the 6 diagrams:*

- 1) Identification of organism
- 2) Total magnification
- 3) Approximate size of the specimen

**Observations:** Include detailed descriptions for each organism.

**Questions:** Answer questions 1-6 in complete sentences.

**Conclusion:** Explain how you determined if something was living or nonliving. What life functions do all organisms need to be considered living? Were there any characteristics that these organisms had that made them well-suited for life in the water?