



# **Itty Bitty City: The Microscopic World In A Drop Of Pond Water**

Modified By Marguerite A Graham from a lab in the text *Modern Biology* by Holt, Rhinehart and Winston, Inc. 1991

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## **Abstract**

This is a basic lab, introducing the microscope as the tool of the biologist by observing the micro world in pond water: ITTY BITTY CITY. This lab was modified from a lab in the Modern Biology text "Life in a drop of Pond Water" by Holt .Rhinehart and Winston. The modification adds measuring and diagramming skills to the observations. It also makes the student aware of the interrelationships in a pond ecosystem.

## **Itty Bitty City : The Microscopic World In A Drop Of Pond Water**

**Purpose:** To examine the variety of living organisms in pond water.

### **Instructions:**

1. Make wet mounts of the living culture
2. Put one drop of culture on slide, this is usually sufficient unless specified differently
3. Squeeze the bulb of the pipette firmly, BEFORE inserting into culture. Pull from the bottom

4. Observe the drop of pond water under Low Power to scan and find the organisms. High Power is useful once you have found something to determine details not clear in Low Power
5. If the organisms are moving too fast and therefore difficult to observe; add one drop of Protoslo or Detain to a drop of culture on the slide. If this is unavailable place 2 or 3 strands of cotton on the slide first then the drop of pond water. These procedures will slow the organisms.

YOU MUST BE PATIENT FINDING THEM , IT IS WORTH WHILE

## Observations

1. Put observations on blank sheets provided
2. Locate and diagram at least 4 organisms, put sketch in circles drawn from petri dishes
3. Each diagram must have a heading ,with name of organism, as well as:
  - a. Beside each sketch ,write a brief description of its color, shape, as it appears to you, movement pattern, is it by cilia or flagella? and feeding if observed.
  - b. For each organism that you observe : look for evidence that it responds to stimuli such as light ,obstacles in its environment and record
  - c. Determine its size (here you apply the rules of measurement learnt in the microscope lab) Record and place next to name
4. To aid in identification, use keys to protists and diagrams to help identify the organisms

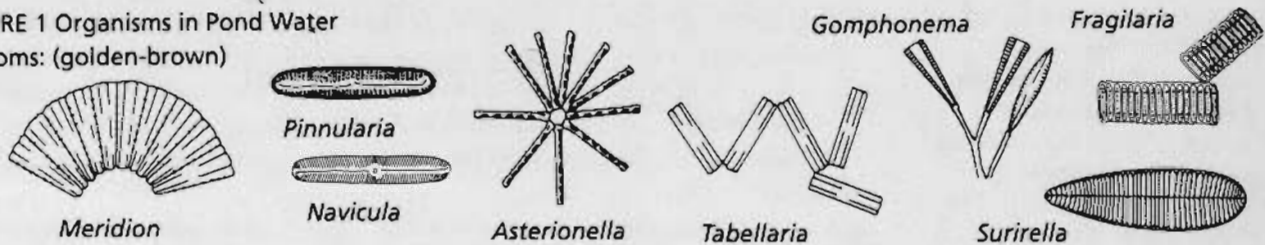
## Conclusions

Put answers on a separate sheet and turn in with lab drawings and observations

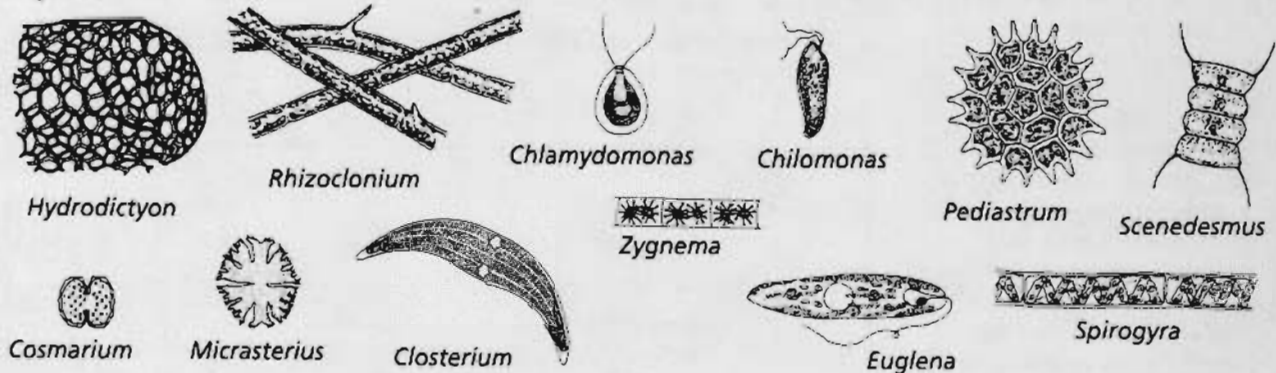
1. Why was it necessary to begin your observation using the low power objective first?
2. What life characteristics did you observe in living organisms in pond water? or How did you distinguish between living and non-living matter?
3. From what observation can you infer that pond water organisms expend energy?
4. What characteristics of pond water organisms are difficult to observe in this type of investigation ?

5. What characteristics might be used to distinguish between plant like and animal like organisms?
6. Most of the one cell organisms belong to the kingdom ?
7. Compare your observations with your classmates, and compile a list of generalizations about organisms found in pond water.
8. After your observations can you determine the food chain or chains in the sample. Construct a possible food chain.

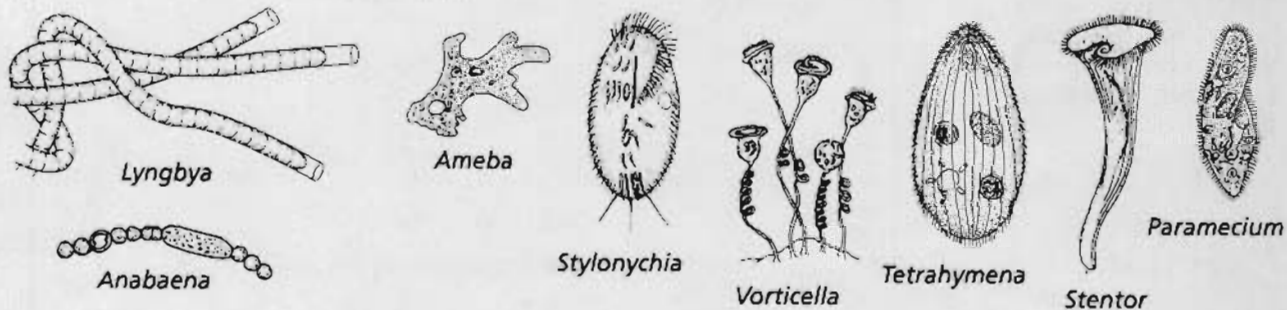
FIGURE 1 Organisms in Pond Water  
Diatoms: (golden-brown)



Algae: (green)



Single-celled forms, attached or swimming:



Larger organisms:

