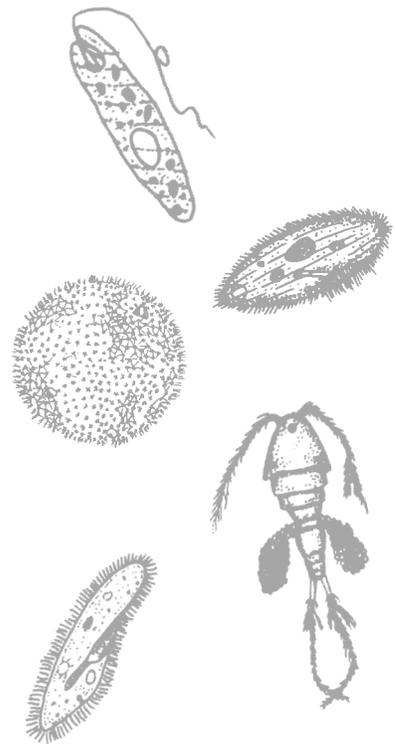
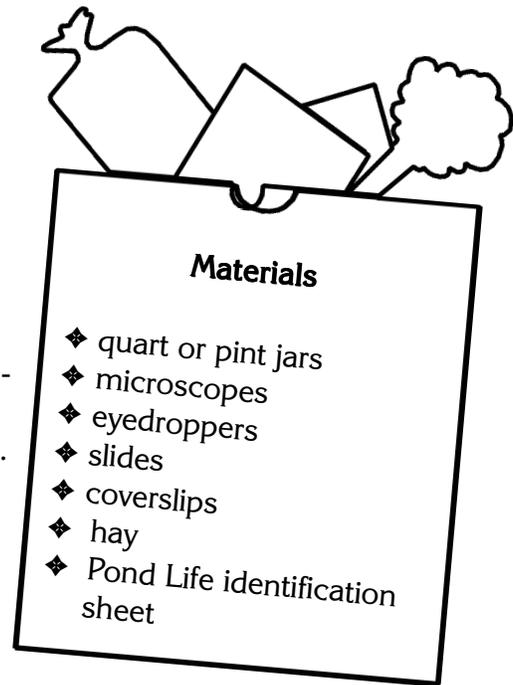


Pond Life

Protozoa live under almost all natural conditions where moisture is found. They may be found in fresh water ponds, soil, salty water, hot springs, or snow drifts. The most important piece of equipment for the study of protozoa is a microscope. The better the microscope the more you'll see. However, in 1675 Anthony van Leeuwenhoek discovered the first Protozoans known to man with a very primitive microscope that gave the magnification of only about 50 diameters.

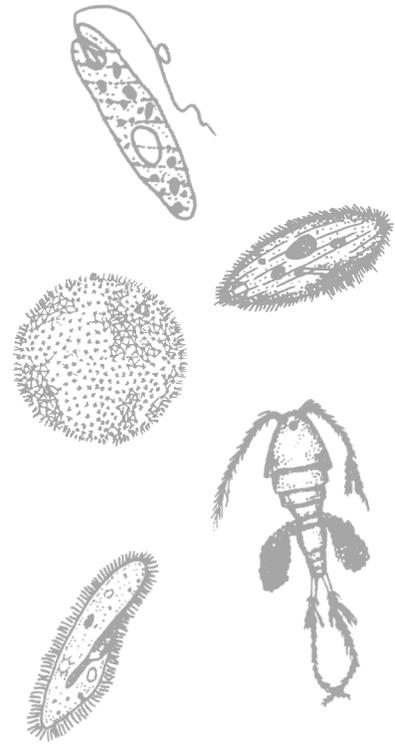
If you have a standard microscope with a low power magnification of about 100 times (written 100x) and a high power of 430x you have the most important item of equipment.

1. Collect protozoa from local pond water (or other source noted above) by scooping up (use the lid or your hand) the scum and algae on top of the water. Even in midwinter, protozoa may be scooped up in debris or vegetation on top or on the bottom of the pond.
2. Fill the jars 2/3 full with the pond water.
3. Keep the jars in a well-lit area, preferably one that is reached by moderate sunlight. You don't want the water to get too hot or you'll kill the creatures. Be careful about direct sunlight.
4. Observe your protozoa. Some protozoans can be found immediately (cyclops can be seen with the naked eye!). Within 24-48 hours others that were scattered through the jar will become concentrated at the top where they may be found more easily and in greater numbers. Others may become concentrated near the bottom of the jar.
5. Using an eyedropper suck-up some pond water from the top or the bottom of the jar, place a drop or two on a slide and then cover the drop with a coverslip.
6. Observe the slide, if no protozoa are found, make more slides.
7. Ask students to draw what they observed.



8. Finally, see if they can identify what they saw using the identification key.

The jars should be kept for several weeks. The species that are most numerous one day may be absent the next day and be replaced by other species. The protozoa which feed on bacteria may be helped by adding a little hay infusion prepared by steeping in warm water a small amount of grass or alfalfa hay. The proportion of hay to water should be enough to produce a color similar to that of strong green tea. Two tablespoons added to a quart jar or one tablespoon added to a pint jar should be sufficient to revive your protozoa.



Microscope Lingo:

Ocular, microscope eyepiece.

Monocular, a microscope with one eyepiece.

Binocular, a microscope with two eyepieces.

Trinocular, three eyepieces, two for viewing one for a camera.

Stereoscopes, which are binocular, provide a three dimensional view of an object. Stereoscopes are usually lower magnification, but are great for viewing larger organisms, especially those found in pond water.

Great microscope links at:

www.geocities.com/EnchantedForest/Dell/5400/resources.html#life

www.cellsalive.com

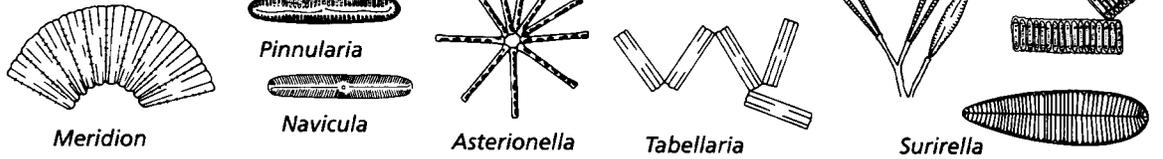
www.utmem.edu/personal/thjones/hist/hist_mic.htm

www.pfizerfunzone.com

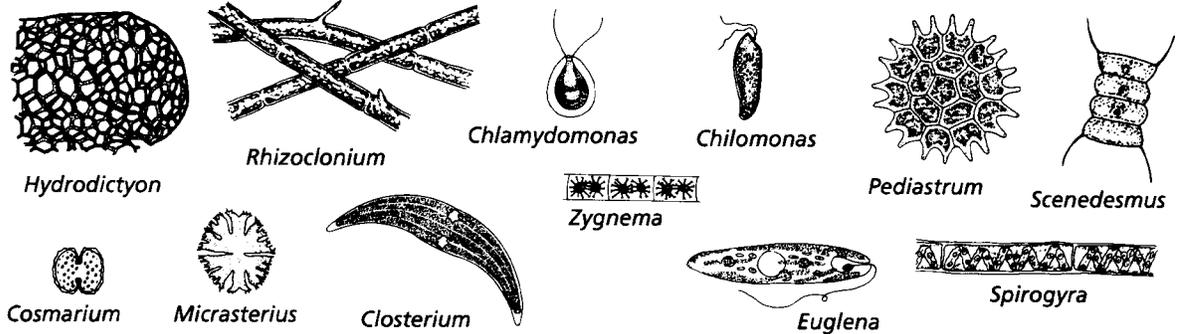


Pond Life Identification

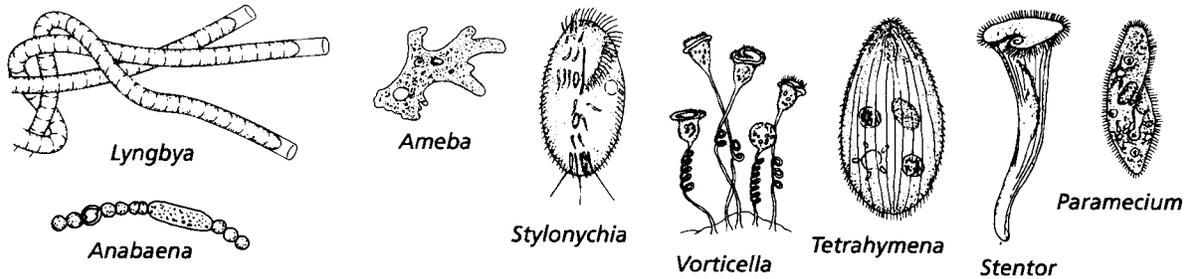
Diatoms: (golden-brown)



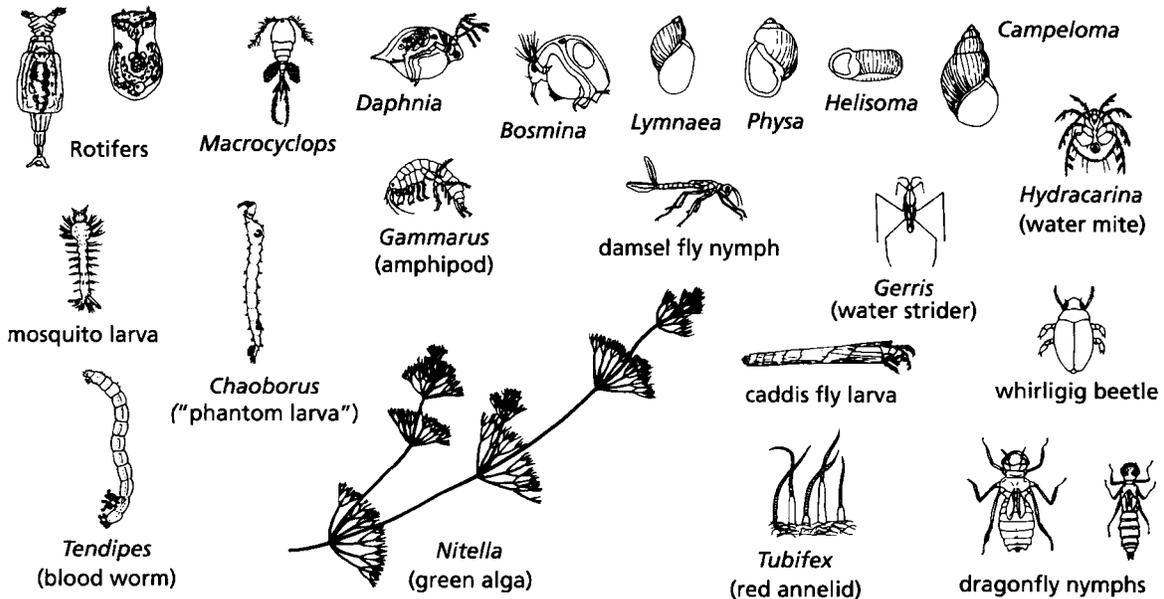
Algae: (green)



Single-celled forms, attached or swimming:



Larger organisms:



Reprinted with permission from Prentice-Hall, Inc.