Mr Mulligan, 7w Science
Pond Water Lab

100

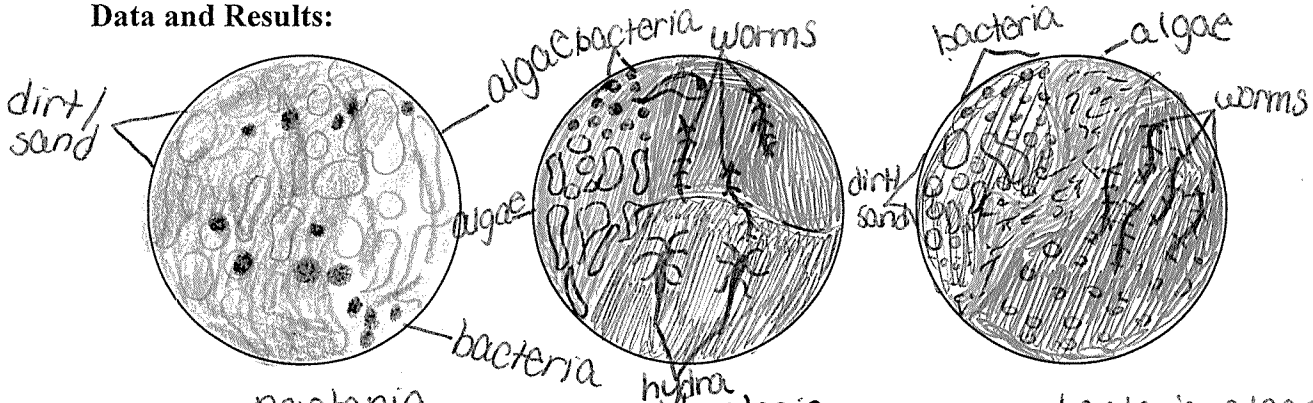
Problem:
What will I see in a drop of pond water?

Hypothesis:
I think I will see algae because when I used to have a pond at my old house, there would always be a lot of algae to clean up.

Materials and Methods:
Slides, coverslips, eye droppers, Petri-dish, colored pencils, microscopes, pond water, pond life books, pencil and paper.

1. Gather materials and set up your microscope (plug in, turn light on, lower stage and turn to 4x objective).
2. Choose one pond sample and using the eyedropper, collect water from depp in the container. Place one drop of the pond water on your slide. Cover with a coverslip correctly to prevent air bubbles.
3. Observe three different samples under 4x and 10x on your microscope.
4. Draw, color and label each sample in the provided field of views (circles) below
5. Identify the organisms that you observe using the pond life books and posters.

Data and Results:



Sample #1 bacteria, dirt, sand, algae **Sample #2** bacteria, algae, worms, hydra **Sample #3** bacteria, algae, dirt, sand, worms

Conclusions:
I saw Bacteria, dirt, sand, algae.
The data does or does not support my hypothesis of there being algae in the water most likely because the samples came from a pond.

* What types of animals did you find in the pond water?
The types of animals we found in the pond water was worms and hydra.

* Did the location change the number of organisms found?
Yes the location did change the number of organisms found because the lighting was different so you could see clearer. Another reason was that the focus on the microscope could be zoomed in and out for a better view.

* If the answer to the above question is "yes", what do you think is the reason?
The reason being the light and the focus on the microscope.

* Did the water temperature have any impact on the number of organisms found? I think the very cold or very hot made the organisms easier to spot because they were moving most likely because the temperature was uncomfortable.

* Would you expect to find the same animals organisms in the pond all year round? How could you test your predictions experimentally? Yes I would expect to find the same animals in the pond all year round. , I could test my predictions experimentally by getting pond water from a local source, and conducting the same experiment again.

* What types of organisms did you find to be the most/least numerous? The organisms I found most numerous were bacteria, algae . The organisms I found least numerous were worms and hydra.

* What characteristics helped you recognize that these organisms were aquatic?
The characteristics that helped me recognize that the organisms were aquatic were that they were swimming around the samples, and I looked at the Pond Identification kit and read the key features on each organism which said they had parts such as tentacles, free swimming or attached, or that they were crustaceans.

~ Pond Life Identification Kit ~

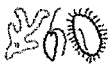
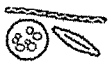
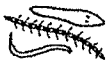
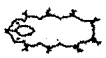
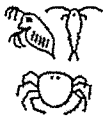
A simple guide to small and microscopic pond life

with links to Micscape resources

One of the most rewarding subjects for study with a microscope are freshwater organisms. Simple collecting methods include squeezing water plants into a jar and for free swimming species, a fine-meshed plankton net is recommended. For simple tips see how to collect microscopic pond life.

The table and linked pages are a guide to some common groups of smaller freshwater organisms (microscopic to a few millimetres in size). If not familiar with an organism, see what drawing and features it most closely resembles in the table and then follow the links.

The beginner may also like to explore the virtual pond dip; click on the creatures in the jar to learn about some of the commoner freshwater organisms.

Group		Key features	Micscape links
Bacteria		single celled, dots or strands, just visible with strongest magnification, cyanobacteria are larger	Introduction to bacteria Spirochaetes
Protozoa		single celled, with tiny hairs or pseudopodia	Go to protozoa overview: e.g. ciliates, amoeba, heliozoa, euglenoids
Algae		single celled, mostly green, sometimes yellow-brown	Go to algae overview: eg. flagellates, diatoms, desmids, filamentous algae
Rotifers		wheel-like, hairy appendages, transparent, free swimming or attached 0.2 - 1 mm	'Smallest page on the web' - rotifers
Gastrotrichs		two tails, hairy, round mouth opening 0.1 - 0.5 mm	No Micscape resources. (Articles welcomed!)
Worms		long thin body, many non related forms	Go to worms overview: e.g. flatworms, annelids, nematodes
Bryozoa		plant-like or jelly-like colony, crown of tentacles individuals: 0.25 - 5 mm	Bryozoans Pond fairies - *Plumatella repens*
Hydra		green brown or colourless, body and tentacles contract and stretch extended: 20 mm	Introduction to hydra Hydra in 3D Hydra oligactis Video clips of a hydra
Water bears (Tardigrades)		8 stumpy legs, slow moving <1 mm See gallery links on the right for some of the finest video clips on the Web of these cute critters!	Hunting for 'bears' in the backyard The incredible water bear Water bear video gallery I Water bear video gallery II
Arthropods		jointed limbs; many groups e.g. crustaceans ('water fleas'), mites	Go to arthropods overview: e.g. ostracods, copepods, water fleas, mites etc.
other Arthropods: Insect stages		wide variety of forms	Go to insect stages overview: e.g. caddisfly larvae, dragonfly nymphs, water beetles, etc.

Note: This suite of pages with links hopefully gives a useful overview, but it's neither a formal identification guide nor comprehensive. It doesn't cover many larger pond organisms (>1mm. e.g. molluscs, sponges, jellyfish etc.). Simple keys to identify these larger freshwater invertebrates and plants (mosses, water weeds etc.) are widely available (see below).

he **protozoans** are excellent microorganisms for students to observe. Protozoans were one of the first forms of animal-like life. They are found in lakes, seas, oceans, rivers, and ponds. They are animal-like in that they must find outside sources of food and can move around freely, but they are so small (single-celled) they are placed in their own kingdom.

Amoeba are very simple and look much like a blob of jelly. Some amoebas can be seen without a microscope, but most are microorganisms. Amoebas have no cell wall, but, with their cell membrane, they can extend themselves. Their extension is called a pseudopod . The amoeba uses its pseudopod to pull itself along and also to catch food.

Ciliates are a group of protozoans that have hair-like projections on the outside of their cells called cilia. Cilia help these protozoans move and collect food particles. Paramecia are the most well know, of the ciliates.

Flagellates have a whip-like structure to help them move. There are two kinds. One contains chlorophyll and can make its own food. The other does not contain chlorophyll and must find its food. Euglena and Volvox are protozoans that move with flagella. Euglena are unusual protozoans in that they have chloroplasts, a lot like those found in plants, that allow them to carry out photosynthesis. But unlike plants, their flagella allow them to move from one sunny spot to another.

Sporozoans are protozoans that cannot move on their own. They are parasites and feed off the cells and body fluids of other organisms. Sporozoans form spores which contain their hereditary materials; by releasing these spores into the environment, new sporozoans are formed. For example, the disease malaria is caused by a sporozoan that is carried by the mosquito. You should not expect to see sporozoans in your protozoa cultures, because they are parasitic and do not reside in water.