



Science Unit: *Temperate Forest*

Lesson 18: *Pond Life*

School year: 2007/2008
Developed for: Bayview Community Elementary School, Vancouver School District
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Grade level: Presented to grades 1 and 2; appropriate for grades 1 – 7 with age appropriate modifications such as having an adult with younger students.
Duration of lesson: 1 hour and 30 minutes
Notes: Loupes available from <<http://www.the-private-eye.com>> (Lyle, Washington State); order online US\$

Objectives

1. Learn about pond habitats which can be found in the forest.
2. Learn about the diversity of pond organisms.
3. Gain experience making observations of different pond organisms.

Background Information

When asked about the type of animal life in forests, most children answer with the most obvious: bears, owls, squirrels, raccoons, etc. The focus of this lesson is to help the children become more aware of other habitats (ie. ponds) within the forest and the life found there.

Vocabulary

<u>larvae</u>	the stage of the life cycle of some insects (eg. mosquitoes), that comes after the egg,
<u>nymph</u>	a larval form where there is no pupa (eg. dragonfly)
<u>organism</u>	an individual living system
<u>isopod</u>	an organism usually flattened from the top with legs all similar
<u>amphipod</u>	an organism usually flattened side to side with very different legs

Materials

- 1 small bucket of pond water for each group of students. You can get pond water from your local pond (eg. Jericho Park pond) Make sure there are enough water critters for each student.
- drop cloth to cover desks / tables
- petri dishes, with lids (1 for each child)
- specimen jars (1 for each child); bug boxes work well too (the flat ones)
- loupes (see notes above) or magnifying lens (1 for each child)
- plastic pipettes (eyedroppers) (1 for each child)
- microscopes (or dissecting microscopes); if available
- identification guides of critters



Introductory Discussion

Briefly discuss the layers of the pond and brainstorm as to what animals live in each layer. Explain that there are 3 levels of life in the pond: [a] lily pads float on the surface to provide shade from the sun; [b] the shallow part allows animals to walk in and out and birds to bathe; [c] the **deep** spot is for overwintering frogs, tadpoles, fish, etc. Use pictures, photos, books to show examples of different organisms. The focus is the children's attention to pond life that is found in the water. Introduce the main parts of an isopod: head, thorax, and abdomen. Compare to the children's own body. Compare to the main body parts of an amphipod: head, thorax, and abdomen. Point out that amphipods have 3 pairs of short tail limbs (uropods) which are used to flick themselves out of danger. Check Wikipedia and other internet sites for diagrams and photographs to support the discussion of what the children may find in their water sample such as: **water fleas** (daphnia, cyclops, diaptomus), **nymphs** (mayfly, stonefly, damselfly, dragonfly), **flatworms** (platyhelminthes) – see references below

Science Activity/Experiment

1. Hand out materials for each group of students.
2. Provide enough time for children to explore their pond water. Ask each child to find his/her own pond life critter to observe and study.
3. Put critter into a petri dish or a jar, with a lid. Observe with a loupe to answer questions such as: how many legs? how many eyes? how does it move? etc. Have children draw and write about their observations. Encourage children to use colour, labels and text.

Closure Discussion

Gather together as a large group. Share observations. Ask : What differences / similarities did you notice about the different organisms that you observed?

NOTE: return the pond water and organisms to the pond or original site

References

1. <http://www.bramleyfrith.co.uk/naturenotes/pond.htm>
2. <http://www.enchantedlearning.com/biomes/pond/pondlife.shtml> This is an excellent website with a wide variety of pond life animal printouts.
3. There are 3 other lessons from the Scientist in Residence Program relating to pond and pond life that are available from <http://www.scientistinresidence.ca>; see:
[a] Aquatic Ecosystems unit, Lesson 4 *Ponds and Pond Organisms*
[b] Aquatic Ecosystems unit, Lesson 6 *Burnaby Lake Field Trip*
[c] Water unit, Lesson 4 *Pond Ecosystem Field Trip*

Pond Animals

Name of Scientist _____

Select one pond animal and watch it closely for a few minutes.

Draw your pond animal. Add lots of detail. Add labels. Use colour.

How many legs does your animal have?

How does it move?

Does it have any eyes that you can see?

Can you see any mouthparts?

Where does it live? Surface, Midwater, or Bottom

What is the most interesting new thing you have found out about your animal.