

## Ponding Activity and Instruction Guide

### Introducing Collection & Observation

#### Ask:

- What is the first thing a pond animal will need in order to survive while you are observing it? (Water.)
- Where do you think we might find the most animals when we scoop with the nets? How would you decide? (Animals are more likely to be found where there is the most food and protection — around plants and in the top layer of mud and leaves.)

#### Activity Steps:

1. Show how to collect clear water in the white basin and plastic cups to make comfortable temporary homes for the animals.
2. Demonstrate scooping through the water into the mud and leaves at the bottom of the pond or near plants.
3. After scooping, move the net through the water several times to rinse out some of the fine mud.
4. Look in the net to see if a small animal can be seen moving around. If so, use a spoon to gently move the animal to a cup with water.
5. If this is difficult, or if no animals are visible, tip the net upside down over the basin.
6. Pour a cup of water through the bottom of the net to wash leaves and animals caught in the mesh into the white basin.
7. Tell children they will need to be patient as the leaves and mud settle and the water clears.

#### Observe:

- Point out the pond in zones or layers. Animals live in all pond layers.
- A pond is a little like a meadow with different habitats and different animals living at different levels. Similarly, in a pond some animals live on the muddy / sandy bottom, others live on the surface, while still other animals live in pond weeds or swim in the open water of the pond.
- Dragonfly and damselfly larvae and isopods are found in the muddy bottom, diving beetles and water bugs are found throughout the water and water striders are found on the surface.

### Collecting and Observing in Groups

Each group should start on a different part of the shore.

1. Once a group arrives at their site, invite the girls to look in the water to see if any animals are visible before collecting starts.
2. The walk leader should then fill the basin with about two inches of water and set it down away from the pond edge on a relatively flat space.
  - Leave spoons, cups, magnifiers and ID sheets near the basin.
3. Hand out nets, cups, and spoons to children. Encourage the children to dip from the shore whenever possible, rather than wading into the pond.
  - Remind them that animals are found in all the pond layers, but most will be found where **there is the most food and protection (i.e., in the “goop”)**.

- Each child should dip only 2- 3 times. Use the analogy of fishing (sometimes you need to be patient to catch something!)
  - Encourage children to explore each netful carefully, and not just scoop repeatedly, as too much scooping may disturb the life of the pond and mud in the water.
4. Move specimens from the nets to cups with clear water for observation.
- Empty some leaves and mud from a net into the basin even if it seems as though nothing is moving.
  - Empty cups with specimens that have been observed into the basin.
  - When scooping up pond weeds or scooping around plant stems, empty the net into a basin with clear water. Gently shake the pond weeds in the water. Damselfly nymphs and also find shelter there.
5. Examine plant stems and leaves carefully for tiny insects and for eggs (jelly masses, some quite small).
- Split open the stems to look for insects inside.
  - Move all specimens to smaller containers in clear water for further study.

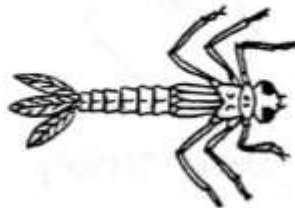
Several children at once can look for animals in the basin once debris in the water has settled down. Sharp young eyes will soon spot moving specks in the water.

- Encourage children to gently catch animals. Too much stirring with spoons will make the water cloudy again.
- Gentle poking at the sediments in the basin may reveal hidden creatures How many are there in one netful of mud?

Among the most common small creatures that are easily visible will probably be dragonfly, mayfly, and damselfly nymphs. A nymph is the immature stage of an adult insect and looks much like the adult without wings.



**Mayfly nymph**



**Damselfly nymph 1**



## Investigate

Encourage children to take time to observe and learn about each animal they discover. To help with identification, ask children to observe the animal's body.

- What color is it?
- What shape is the animal's body?
- Can you see its eyes?
- Can you see legs? If so, how many are there?

Use the laminated ID sheet to name the animal. Use the insect side of the sheet.

- Match each animal with its picture. If there is not a perfect match, ask which is the closest.
  - (For example, there are many types of dragonflies, and the nymphs are somewhat different in size and shape.)

- **Noticing animal's size is also a help** in identification. Note that the bar near the illustration indicates the actual size of the animal—there are some large pictures of small animals.

Talk with children about the animal and ask questions such as:

- How does it move?
- How do you think it breathes? (Encourage children to look for a silver air bubble on diving insects—and watch the animal return to the surface to get a fresh breath.)
- What part of the pond does it live in?
- What do you think it eats?
- What do you think might eat it?

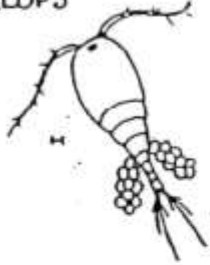
Some questions can be answered by observation; some need to be researched using field guides or internet searches.

- In addition to the printable guides below, we also suggest the [Pond Life Folding Pocket Guide](#) by James Kavanagh.

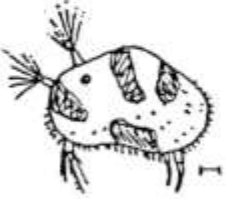
SOME POND CREATURES AND THEIR SIZES

CRUSTACEANS

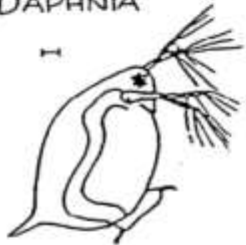
CYCLOPS



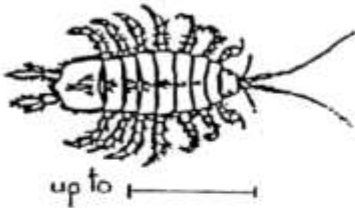
OSTRACOD



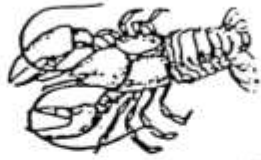
DAPHNIA



ISOPOD



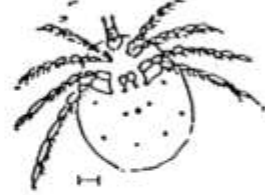
AMPHIPOD (scud)



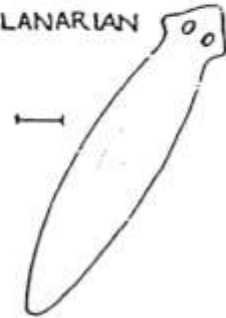
Crayfish (Crustacean)

OTHER

WATER MITE



PLANARIAN



Snail



Tadpole



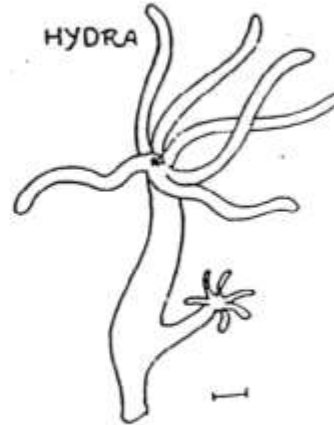
Leech

"PILL CLAM"



Does it have 6 legs?  
Look on the other side....  
It's an insect!!!!!!

HYDRA






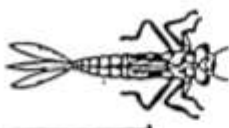

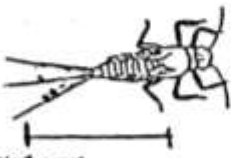





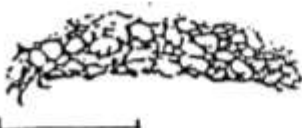


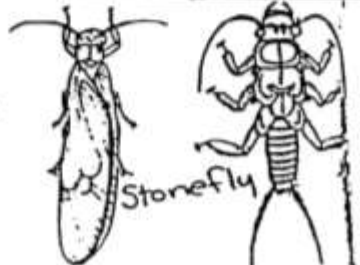
Mosquito larva



(this is an insect)

From Massachusetts Audubon

# WATER INSECTS (6LEGS)

|   |  |
|---|--|
| <p>Dragonfly nymph</p>               | <p>Mosquito larva</p>   |
| <p>Damselfly nymph</p>               | <p>Water sinder (adult)</p>    |
| <p>Water scavenger beetle adult</p>  | <p>Water boatman (adult)</p>   |
| <p>Whirligig beetle larva</p>      | <p>Backswimmer (adult)</p>    |
| <p>Whirligig beetle adult</p>      | <p>Giant water bug (adult)</p>   |
| <p>Caddisfly larva</p>             | <p>Water scorpion (adult)</p>    |
|   | <p>Midge Larva (Blood worm)</p>   |
|   | <p>Stonefly</p>    |

From 4H Pond and Stream Safari