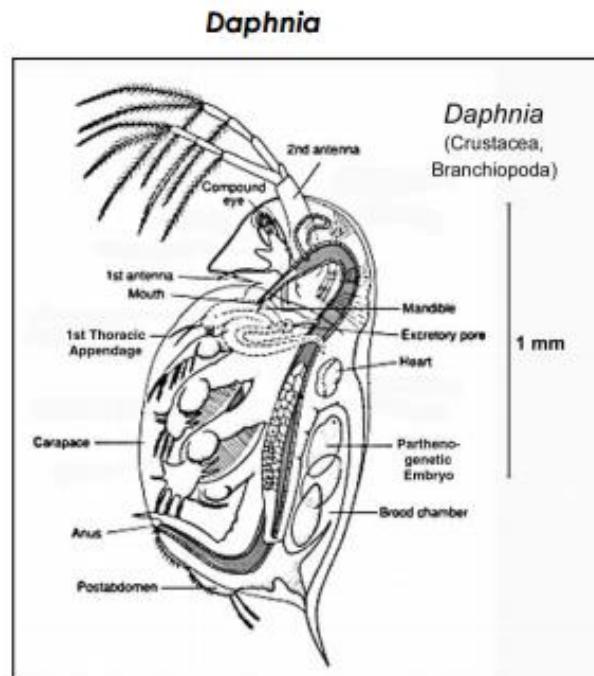
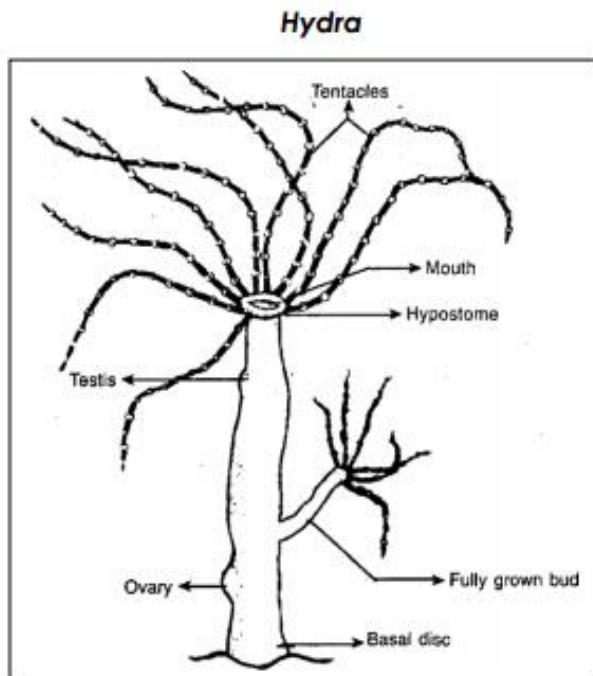


Hydra Observation Lab

Name: _____

Introduction: The phylum Cnidaria includes organisms that display radial symmetry and all are carnivores. The life cycle of some cnidarians includes both a medusa (jellyfish) stage and a polyp (attached) stage. Medusae are usually free-floating and often produce gametes. Polyps are fleshy columns with an attachment at one end and a mouth and tentacles at the other end. Many members of the phylum exist only in one form or the other. We will examine a common fresh-water species of phylum Cnidaria called hydra. The hydra is a small Cnidarian polyp that lives in fresh water attached to submerged rocks, leaves and twigs. Its tentacles stretch out waiting for passing prey. We will also observe D



Obtain a live specimen of hydra in a depression slide by transferring it with a micropipette, place a cover slip on top.

- a. Allow the hydra to relax in the slide for 3 minutes on the stage of the microscope with the light off in order for it to stretch out.
- b. Examine your hydra under scanning power and then low power.
 - i. Draw a diagram of your hydra labeling the 1) mouth 2) tentacles, 3) body stalk
- c. Using a dissecting needle gently touch the hydra in several different places. DO NOT POKE IT!
 - i. Describe the areas that are more sensitive than others. Describe how the Hydra responds.

Feeding Behavior of Hydra- The capture of prey by hydra is normally followed by a relatively complex series of movements in which the prey is transported to the widening mouth and then pushed into the gastrovascular cavity. These actions constitute the feeding response and are apparently chemically controlled. Hydra are able to capture prey using a specialized cell called a cnidocyte, which contains a harpoon like nematocyst. The nematocysts may be specialized to penetrate the prey when released, or to entangle it with sticky threads. Often a toxin is released along with the nematocyst to assist in subduing the prey.

a. To observe feeding behavior, introduce a drop of water that contains Daphnia to the depression slide that has your Hydra.

b. Observe the hydra carefully over the next few minutes and record 3 observations below. Include the following terms when describing the feeding action: nematocyst, cnidocyte, trigger, mouth.

Observation 1 –

Observation 2-

Observation 3-

Conclusions and Discussion

1. Based on your observations, which organism is more complex? Why?

2. The hydra, with its stinging tentacles and radial symmetry would be most closely related to which organism?

Dog	Iguana	Tapeworm	Great White Shark	Lamprey	Octopus
Planaria	Earthworm	Jellyfish	Sponge	Shrimp	

3. Sea anemones are related to Hydras and contain stinging cells. Research why Marlin the clown fish, (Nemo's dad), was not affected by the stinging cells of the sea anemone.

4. The daphnia, with its exoskeleton, heart and antennae would be most closely related to which organism?

Dog	Iguana	Tapeworm	Great White Shark	Lamprey	Octopus
Planaria	Earthworm	Jellyfish	Sponge	Shrimp	