

Hydra and Planaria Lab

Names _____

HYDRA:

Hydra are usually sessile organisms. They capture prey with their nemotocysts, located on their tentacles. Their nerve net signals the tentacles to push they prey through the mouth and into the gastrovascular cavity.

Procedure:

- 1.) Use a dropper to place a hydra into a watch glass filled with spring water.
- 2.) Give the hydra time to relax and extend its tentacles.
- 3.) Observe the hydra under low magnification.
- 4.) With the hydra in view, gently shake the watch glass. Record the reaction of the hydra in Table #1.
- 5.) Very carefully, with a dissecting probe, touch the body and a tentacle of the hydra. Record the reaction.
- 6.) Allow the hydra to relax.
- 7.) Add a drop of brine shrimp to the watch glass while continuing to observe the hydra through the microscope. Be patient!
- 8.) Record the reactions of the hydra to the presence of brine shrimp.
- 9.) Put hydra back in jar.

TABLE #1- Reactions of Hydra

STIMULUS	RESPONSE
Shake watch glass	
Touch with probe	
Presence of shrimp	

ANALYSIS:

- 1.) What is the classification of Hydra?

- 2.) How does the reaction of Hydra to Brine Shrimp differ from its reaction to being shaken or touched?

- 3.) Describe the feeding process of Hydra.

- 4.) Hydra cannot go after/ hunt their prey. What adaptation makes this unnecessary?

- 5.) What survival value does Hydra's quick response to touch have?

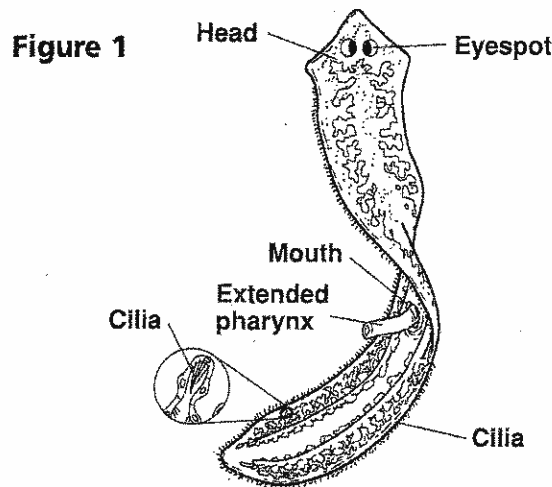
- 6.) Did you have a green or brown hydra? What is the difference?

PLANARIA

Planaria are free-living flatworms that usually measure less than one centimeter in length. The head area of the planarian contains a brain-like concentration of nerve cells. The nerves and digestive system form a ladder-like arrangement within the flattened body.

Procedure: Part A

- 1.) Using a dropper, place 2 planaria in a watch glass with enough spring water to cover the bottom. Planaria must be able to move freely.
- 2.) Place the watch glass on the stage of a dissecting scope. Allow a few seconds for the planaria to recover.
- 3.) Using Figure #1, locate the mouth and pharynx in the middle of the planaria's underside.
- 4.) Observe how the planarians move. Planarians have 2 layers of muscle and an entire lower surface covered with cilia. Record observations in Table #2.



Procedure: Part B

- 1.) Give your planaria time to relax.
- 2.) With the tip of a dissecting probe, gently tap on the side of the watch glass. How does the planaria react? Record your observations.
- 3.) Wait at least one minute. Gently touch the head of one of the planarians with the side of the probe. How does it react? Record your observations.
- 4.) Gently touch the tail in the same way. How does it react? Record observations.

TABLE #2 - Planarian Behavior

BEHAVIOR/STIMULUS RESPONSE	REACTIONS AND OBSERVATIONS
Movement	
Tapping watch glass	
Touching the head	
Touching the tail	

ANALYSIS:

- 1.) To what phylum do flatworms belong? Are planarians free living or parasitic.

- 2.) What part of the body first reacts to light, touch, or other changes in the environment? How do your observations support this?

- 3.) Planaria can regenerate new parts. What might be the advantage for an animal that can grow new body parts through regeneration?