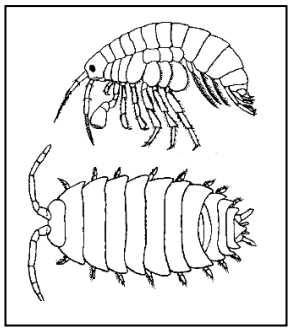
Animal Behaviour Lab: Using the Scientific Method



Test subject:

Armadillidium vulgare, also known as wood bugs, pill bugs, rolly polly bugs.

In Advance:

- Research wood bugs: Where do they live?
- What is their habitat like? What do they eat? How can you capture them and keep them alive?
- Capture enough wood bugs for experimental purposes.(40-50)
- How will you ensure that the wood bugs are kept alive
- How will you ensure they are not stressed before/during/after the experiment

Part 1: Observing the Pill bug

Wash your hands before and after handling pill bugs. Please handle them carefully as not to stress or crush them. When touched, they roll up into a ball or "pill" shape as a defense mechanism. They will soon recover if left alone. The pill bugs do not sting or bite.

Observations of External Anatomy

1. Obtain a Pill bug that you have brought from home.
    a. Place Pill bug in a small glass dish or petri dish to keep it contained.
    b. Examine the shell and body first with just your eyes, and then with a dissection microscope
2. Examine the shell shape, colour and texture,

	Observations
Shape	
Colour	
Texture	
# of legs	
# of Antennae	
# of overlapping plates	

Sketch of Pill bug	Sketch of Pill bug rolled up into a ball

Observing Motion

1. Watch a pill bugs underside as the pill bug moves up a transparent surface, such as a glass petri dish or a beaker. Describe the action of the feet and any other motion that you see.

2. As you watch the pill bug, identify behaviours that might:

    a. Protect it from predators

    b. Help it acquire food

    c. Protect it from external elements

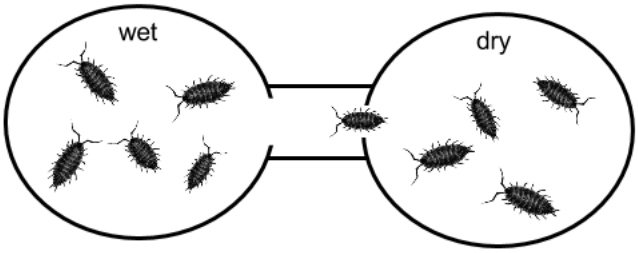
    d. Allow interaction with the environment

3. Allow a Pill bug to crawl on your hand (it will not bite!), describe how it feels and how it acts

Design an Experiment using the Scientific Method:

- Based on your **research** and observations, develop a hypothesis regarding wood bug preferences and design a CHOICE CHAMBER to test it.

Example:



- Select TWO factors to investigate and design an experiment to test it.

Examples:

FACTOR	POSSIBLE MATERIALS
Temperature	Cold pack, warm pack, ice, warm water
Light	Lamps, flashlights, dark construction paper, aluminum foil
pH	HCl,NaOH, vinegar, baking soda
Substrate(surface)	Soil, sand, bark, cedar, gravel
Odor	Ammonia, perfume, lemon juice
Food	Potato, fish flakes, fruit, wood

- Consider that in science, testing variables separately provides the most useful evidence.
- Record data in chart form.

Example:

Time	# in Wet	# in Dry	Other Notes
0:00			
0:30			
1:00			
1:30			

Report Your Findings:

Create a scientific mini poster. Include the following:

1. Introduction
    - Research question. What were you trying to find out?
    - Background information. What did you learn about wood bugs in your background research?
2. Materials and Methods
    - Materials, procedure, variables (controlled, manipulated, responding), set up (include a labelled diagram).
3. Results
    - Data table, graph
4. Discussion
    - Summarize the goal of your experiment, suggest reasons for the observed behaviour. Consider this behaviour from an evolutionary point of view. How is this behaviour an advantage?
    - Suggest ways the experiment could be improved. Include possible sources of error.
5. References
    - Cite the references you used in APA style. (Use EasyBib.)