

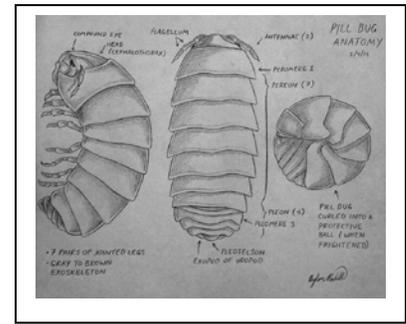
Animal Behaviour Lab: Using the Scientific Method

Test subject:

Armadillidium vulgare, also known as wood bugs, pill bugs, roly 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)
 - You will need to design a habitat to keep them alive in the superlab.
 - Be careful to collect the right type (a similar species can be found in the same locations, but these do not roll up)
 - Pill bugs MUST be returned exactly where you found them.
- How will you ensure that the wood bugs are kept alive
- How will you ensure they are not stressed before/during/after the experiment



*** THIS INFORMATION WILL BE FOR YOUR INTRODUCTION***

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

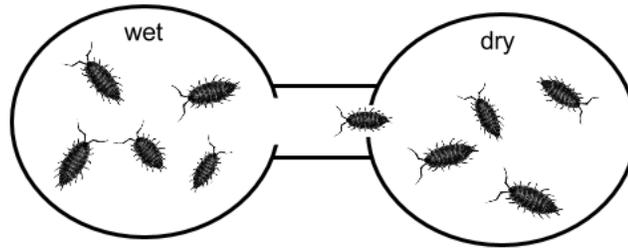
 - d. Allow interaction with the environment

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			

Fig. 1

Report Your Findings:

You will be writing the first of two lab reports. This lab report will serve as practice and we will be doing peer editing. The Lab report must be neat, organized and typed and in the following order:

1. Organization and Appearance
 - a. Author is clear, tidy appearance, all headings present and underlined, written in the 3rd person (no usage of I, me, we, you)
2. Title: Clear and concise, the reader can get a sense for what they are about to read. Be as specific as possible without being to “wordy”
 - a. Example of an insufficient title: Pill bug lab
 - i. Is not specific
 - ii. Does not give reader a sense of what your experiment was other than you used pill bugs
3. Introduction
 - Purpose (what are you doing in the lab)
 - Background information. What did you learn about wood bugs in your background research?
 - Hypothesis (What are we testing?)
 - Must be in “**if.....then....**” format
 - Example: **If** the pill bugs are given a choice between rock music and country music, **then** the pill bugs will gravitate towards the country music.
4. Materials
 - a. All materials listed with quantities
5. Procedure
 - Numbered step by step instructions that are detailed and clear
 - set up of choice chamber refer to figures (include a labelled diagram or picture).
 - Example: If you are referencing a data table or picture, you can say “Refer to figure 1, 2 etc) and have picture with title somewhere in your procedure section.
6. Variables
 - a. Variables identified correctly (controlled, independent, dependant)
7. Results
 - Presented neatly in a data table, graph, or diagram
 - **NO INTERPRETATION OF RESULTS OCCURS HERE**
 - Labelled properly as figures.
 - So you can refer to them in your discussion
8. 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?
 - How reliable is your experiment?
 - Suggest ways the experiment could be improved. Include possible sources of error.
 - Understanding of the topic and experiment is shown
9. References
 - Cite the references you used (Use EasyBib and keep it all the same style APA or MLA.)