

Learning Goals:

1. To demonstrate science as a process designing a controlled experiment and synthesizing an organized, professional laboratory reports with clear communication of creative, original thinking.
2. To question, hypothesis, and analyze the proximate causes of isopod choice behaviour.

Criteria for an Exemplary Lab Proposal:

Title

- The purpose/question of the research is clear

Objectives

- Clear **question(s)** (If... then will...?/ How...?)
- Clear **hypotheses** – **null** hypothesis and **alternative** hypothesis (If... then... because...)

Experimental Design – Ensure you follow the criteria below for EACH of your investigative questions!

- Complete list of **materials/equipment**
- Thoroughly and logically explained **step-by-step** procedure
- Identification of at least eight **constant** variables
- Identification of the *specific* **independent** (manipulated) variable *with units if appropriate*
- Identification of the *specific* **dependent** (measured) variable *with units if appropriate*
- Explanation of how you will **control** for constant variable (Controlled Test)
- Explanation of how you will gather your sample **specimens** (pill bugs) is taken, and **size** of sample
- Explanation of other measurements/**observations** to be taken
- Explanation of how data will be evaluated/**analyzed**
- Possible **sources of error** (*at least three*)

Experimental Design – Flow Chart

- Logical**, clear, and easy to follow
- Complete with **sketches/diagrams**

Preparation of Results Tables

- Tables for data are **prepared** for the lab with a ruler, **units, titles**

During Lab Results

- All data recorded in **pen** with correct units
- Detailed** observations and sketches
- Ethical treatment** of specimens