

EFFECT OF POPULATION DENSITY ON PLANT GROWTH

Your Investigation Challenge: How does seed population density affect the growth rate of plants?

Design an experiment that addresses the challenge. Run the procedure, record your data, and draw a conclusion.

Background/Overview: Competition between organisms for resources such as food, water, and space is a fundamental part of ecology. It can strain limited resources, cause stress among organisms, and even lead to environmental degradation. Competition is generally classified as two types: interspecific and intraspecific. **Interspecific competition** occurs between members of two different species; it involves communities of living organisms. **Intraspecific competition** occurs between members of the same species. Therefore, it involves populations of living things. In this lab, you will investigate the effects of intraspecific competition for resources on the growth of a plant species by varying its population density.



Possible Materials (but not limited to):

- Plant containers or plastic cups
- Digital Balance
- Ruler
- Graph Paper
- Paper Towels
- Mung beans



Format for Lab Report:

Each lab report needs to have:

- Title**
- Lab Roles for Each Group Member:** facilitator, materialist, recorder, and reporter
- Background:** Summarize the background in your own words.
- Objective/Challenge:** Briefly restate
- Hypothesis:** Make an educated guess about what will happen. Use an "if, then..." format. For example, "if we place numerous mung beans in the cup, the plants will decrease in height and weight."
- Materials:** Specifically how many and much of the materials were used.
- Procedure:** A step-by-step recipe of how to do the lab (must be clear enough so some one else can read the lab and perform it too).
- Data:** Record your data in a **table** and **graphical representation**. Everything must be labeled clearly, including the axes. Feel free to take pictures with the tablets and print ☺
- Conclusion:** Follow the three-paragraph prompt in the syllabus and answer the questions regarding your lab.