

Biology Plant Project Guidelines

Students in Biology will grow a plant of their choice in the Ames High Greenhouse during the school year. Students will be responsible for researching and implementing all aspects of growing the plant – creating the necessary conditions for the plant, planting, maintaining the plant throughout the year, and recognizing and solving problems as they arise. The student will also have to pick a growing condition variable to study (i.e. plant their plant in two or more different soil types). This project is an engaging way to make many biology concepts relevant to students and with the variety of plants that are grow it is an opportunity to study a variety of topics related to biodiversity.

Objectives:

1. Develop a deeper understanding of:
 - a. the conditions necessary to get a variety of plants to germinate
 - b. the effects of different soil types on plant habitat
 - c. a variety of conditions that different plants need to grow (nutrients, sunlight, amount of water, etc.)
 - d. a variety of plant structures and their evolutionary significance
 - e. different plant reproduction strategies
2. Investigate the effect of one environmental condition on plant growth

Expectations:



Select a plant to grow for the project – this should be a plant that will live most of the school year. If not, you will have to grow another plant mid-year.



Research where you will get the plant seed, cutting, root stock, etc.

- There are several free options available to you on the class website – the USDA germplasm facilities website is listed on the course website and is a great resource from which I can order plant materials (for research purposes)



Research the conditions that the plant needs in order to survive: soil type, watering frequency, nutrient levels, sunlight requirements, etc.



Choose one environmental condition to vary within a group of your plants



A write-up is due by 4pm on Friday, September 24th. This write-up should explain in detail what you have done for the first four expectations. You should provide as much detail as possible about your project. I will return your write-up with either approval or conditions you must still meet before your project is approved. Approval is necessary in order to continue with the remaining expectations.



Gather the materials necessary to support your plant growth project



Plant your plant in the Ames High greenhouse and setup the necessary conditions for your experiment



Monitor your plant over the period of the school year and communicate the following on a wiki

- Pictures of your plant over time (very beginning until the very end)
- Very detailed observations and measurements of your plant's growth
- Document any changes that are happening with detailed pictures of the features
- Charts, tables, graphs, etc. that help you to interpret your plant's growth over time
- Include any research you do about your plant and include the references for where you got your information from



At the end of the second semester, take your plants home and clean and put away any project materials in the Ames High Greenhouse