

## Option One: PLANT EXPERIMENT:

Begin before June 10 - Experiment Takes 20 Days, plus time to write it up! This gives you some extra time in case your seeds don't germinate the first time.

### Introduction

Science is a process of predicting, collecting data, then drawing conclusions. The purpose of this assignment is to practice the process of science while testing an actual hypothesis.

### Scientific Problem

What are some factors that may affect the growth of plants?

Choose one factor (variable) like amount of soil, amount of light, or use of fertilizer and test how it will affect plant growth.

### Background Research

Determine factors are needed for a plant to grow. You may use textbooks, the Internet, or other references that can be cited in a bibliography. Write a paragraph that summarizes your research. Include at least two sources in your bibliography.

### Forming a Hypothesis

What do you predict will happen in this experiment? Write a paragraph which gives your prediction (hypothesis) and a paragraph that explains why you think this will occur.

### Materials

- Packet of Seeds (Any Type – beans work great)
- Small Containers (Plastic Cups, Plastic Plant Pots, Etc.)
- Potting Soil
- Water
- Any other materials that your factor requires.

### Experimental Design

Set up two small or more containers of seeds. Subject one to normal conditions, based on your research. This one will act as a control. A control is a group in which all factors needed for success are optimal.

Subject the others to your variable. This will act as your experimental groups. An experimental group is the one that you have changed **one** factor, to see the effect on growth.

Write a paragraph that explains how you set up your experiment.

Allow the seeds to grow for at least twenty days.

### Data Collection

During these twenty days, measure the height of the plant in cm. Check at least every 2 days. If you are out of town, you must make arrangements for someone to check your plants. If your plants do not germinate within 7 days, you will need to replant them – this is why you need to start early!

Create a data table to display your data.

Present the data in a line graph. (NOTE: YOUR GRAPH SHOULD HAVE TWO OR MORE LINES. YOU WILL NEED A KEY FOR THIS GRAPH.)

Photos can be taken and included in report but are not required.

### Conclusions (Discussion)

Describe the effects of your factor on plant growth. Support your conclusion with the data you collected.

### What Do I Need To Hand In?

- Research Paragraphs & Bibliography
- Hypothesis Paragraph
- Experimental Design Paragraph
- Data Table
- Line Graph
- Conclusion Paragraphs
- The actual plants\*\* Label with your name. Even if they die, you still must bring them in.\*\*