

## **Hackensack High School Pre-Advanced Placement Biology Summer Assignment – 2007-2008**

The following two assignments must be completed independently during your summer vacation. You must work alone. They are due the first day of school, Wednesday, September 6, 2006. If, during the summer, you have questions or problems, you may contact either of the teachers listed below:

Mr. Louis Ferrante; [l.ferrante@hackensackschools.org](mailto:l.ferrante@hackensackschools.org)

Mr. Ron Durso; [r.durso@hackensackschools.org](mailto:r.durso@hackensackschools.org)

or call 201-646-7958 and leave a message. Please indicate that your call is regarding to the Pre-AP Biology Summer Assignment.

\*Failure to complete this assignment may result in removal from Pre-AP Biology.

### **ASSIGNMENT 1**

“Using Graphing Skills”, Page 49-54, including Going Further.

The packet may be downloaded by going to:

<http://www.homeworknow.com/hwnow/gethw.php?id=24273>

### **ASSIGNMENT 2**

**THIS EXPERIMENT TAKES 30 DAYS TO COMPLETE. PLAN TO DO IT  
WHEN YOU CAN OVER THE SUMMER!**

#### **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 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)
- Small Containers (Plastic Cups, Plastic Plant Pots, Etc.)
- Potting Soil
- Water
- Digital or regular camera
- Any other materials that your factor requires

### **Experimental Design**

Set up two small 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 second one to your variable. This one will act as your **experimental group**. 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 thirty days. During this time take pictures to show the progress of the plant's growth.

### **Data Collection**

During these thirty days, measure the height of the plant in cm. Also during this time take pictures to show the progress of the plant's growth.

Create a data table to display your data. For examples of data tables, see "Using Graphing Skills", data tables 1 & 2.

Present the data in a line graph. Follow the rules described in "Using Graphing Skills." (NOTE: YOUR GRAPH SHOULD HAVE TWO LINES. YOU WILL NEED A KEY FOR THIS GRAPH.)

### **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?**

**Due Wednesday September 5, 2007 (The First Day of School)**

### **Assignment 1: Graphing Skills Packet**

#### **Assignment 2: Experiment**

Research Paragraphs & Bibliography

Hypothesis Paragraph

Experimental Design Paragraph

Data Table

Line Graph

Conclusion Paragraphs

Photograph(s) of your plants - This is the proof that you performed the experiment. You may email the pictures, after the first day of school, to your teacher or print them out and submit by the date above.