

Biology 1

Welcome Back to the Book Web Site & Virtual Investigation #1

Name:
Name:
Date:
Hour:

Our *Modern Biology* book has a fairly comprehensive website. You will be able to find the book on-line and utilize numerous resources.

Go to the following website: my.hrw.com

Your user name is: **astudents90**

Your Password is: **a7k7**

Click 'Go to the Online Textbook'. Here you will find a digital copy of your book. This will also give you access to audio files of vocabulary, digital copies of worksheets and virtual investigations (like the one we are doing today).

From the drop down menu at the top, select '*Chapter 1: The Science of Life*'. Then click the **eActivities** tab.

The image displays three screenshots of the Modern Biology website. The top-left screenshot shows the navigation menu with 'Chapter 1: The Science of Life' selected and the 'eActivities' tab highlighted. The bottom-left screenshot shows the 'Welcome to Modern Biology 2009' page with various resource tabs like 'Book Pages', 'Activities', 'Student Resources', and 'Browsers & Plugins'. The right screenshot shows the 'Virtual Concepts' and 'Textbook Audio' sections, with an arrow pointing to 'The Scientific Process' under 'Virtual Investigations'.

Now you are ready to try out our first Virtual Investigation. Click on 'The Scientific Process' link. Navigate through the Virtual Investigation for *The Scientific Process* on the Holt website. Answer these questions as you proceed. This should serve as a refresher on the 'Scientific Method' as well as a reinforcement of the concepts related to photosynthesis that we've been talking about in class the past few days.

Remember, for full credit you must use complete sentences!

Part 1 of 10

What is the question/problem in this Virtual Investigation?

Part 5 of 10

Background information is essential to forming a good hypothesis and conducting a thoughtful experiment. For this experiment, back ground information on plants is helpful. What do plants need to grow?

There are often many ways to create an experimental group in an experiment. Some methods may be better than others, and you should consider this both in your experimental design and your error analysis when you write your conclusion. If light is a variable in this experiment, what are some of the ways to vary light?

Part 7 of 10

The hypothesis given is: The color of light will affect plant growth. Rewrite this hypothesis as an 'If/Then' statement, using the same variables.

Part 8 of 10

What is an independent variable? (*you many need to revisit Part 2 of 10 for definitions*)

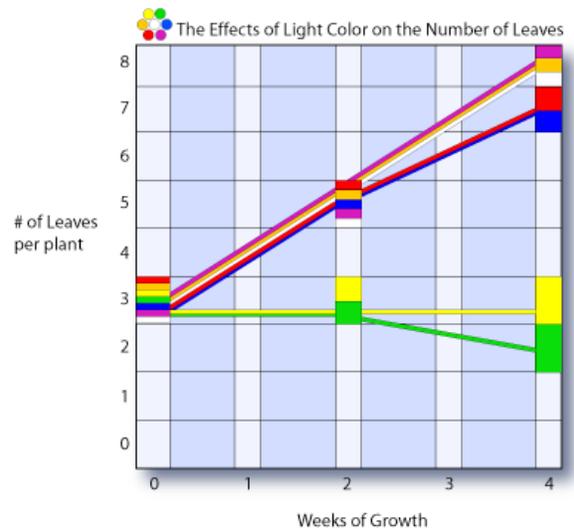
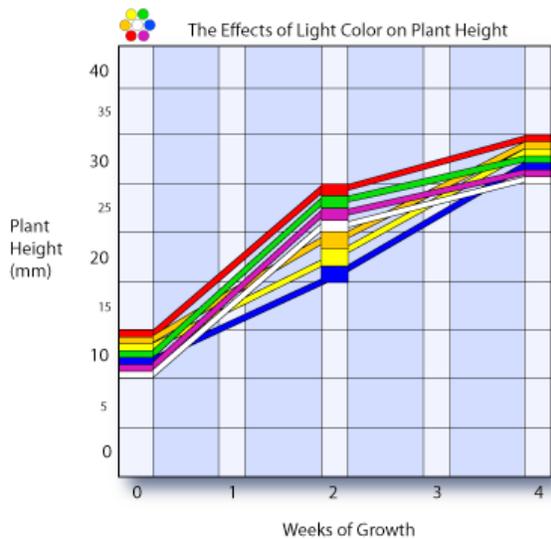
What is the independent variable in this experiment?

What is a dependent variable? (you may need to revisit Part 2 of 10 for definitions)

What is/are the dependent variable(s) in this experiment?

What is a control group? (you may need to revisit Part 2 of 10 for definitions)

Which color of light is used for the control group in this experiment? Why?



Part 9 of 10

Which kind of graph(s) are used to represent the data?

What makes this type of graph especially good for analysis?

Part 10 of 10

Write a conclusion for this experiment. Be sure to address your hypothesis and to revisit the most important data (*look at the graphs*).

On Your Own (answer not found on website)

A good conclusion also discusses sources of error. Although error can occur from human mistakes, the most important sources of error to discuss are those related to experimental design and methods. Of particular issue are things known as **confounding variables**. These are variables that were not part of our design (independent or dependent), but that may have affected our experiment. Describe one source of error that may have occurred had this experiment been carried out in a real laboratory.
