



## WILLIAM H. MAXWELL HIGH SCHOOL

ZIPORA STEINER, PRINCIPAL

DEPARTMENT OF MATH, SCIENCE, AND HEALTH CAREERS

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### Christmas Make-Up Lab Assignment

This lab may be used to make up the appropriate Lab. If you are in **Chemistry Lab**, Please complete the portion marked: Chemistry, If you are in **Living Environment**, Please complete the portion that is marked for Living Environment, and if you are currently taking **Physics**, complete the section marked Physics.

**Official Website:** is [www.rockefeller.com](http://www.rockefeller.com)

#### **Physics Lab:**

1. Take a trip to the Christmas tree display at Rockefeller Centre.
2. Using your knowledge of Newton's Laws and the formula for  $d = v_1t + \frac{1}{2}at^2$ , **design** an experiment that will enable you to determine the height of the Christmas tree.
3. In order to design your experiment you must:
  - a. Follow the Scientific Method that you have been using in your Lab Classes, that is: Title for your Lab, Aim for your lab (in the form of a question). List the materials that you need to complete the experiment. Method or procedure is a list of steps that you will carry out in order to complete the aim of the experiment. Observations are included to give you the actual numbers or readings that will satisfy the formulas that you are following. You can also sketch a diagram to prove your point.
  - b. In your observations, you must explain how you would solve for "d", or in this case the height of the tree (the distance from top to bottom.) how would you determine the values for "v", "t", and "a". Explain in words or by proving the formula how you would derive the values for the height of the tree, that is, which quantities you need to find and what quantities you already know.
  - c. Following your formula, solve the equation for the height of the tree.
  - d. Compare the answer you mathematically found to the true height of the tree. This height can be found on the Internet or you can ask tourist information at Rockefeller Centre itself when you visit there.
  - e. Bring your completed design to class on Friday January 5, 2006
  - f. Present your design in class; any design that receives a passing grade in your physics class will also receive Lab credit for ONE Lab.
  - g. Late papers will result in a 10 % grade reduction.
  - h. You can substitute research on the internet for a trip to Rockefeller Centre, however, you must then print out a picture of the Tree at Rockefeller Centre for this year, including the website that you used for your information. All website information must include the website address on the page from the printout.

### Chemistry Lab:

In order to make up ONE Chemistry Lab you must complete the following

1. Visit the Ice Skating Rink at Rockefeller Centre, Located under the Christmas tree. Or , using the Internet look up "Rockefeller Centre, NYC" and get the necessary facts needed to complete this lab. If you use the internet, you must print out the information and website that you used. You can find out this information on the "Net".)
2. Sketch a design of what the Rink looks like or print out from the Internet a picture of the Rink itself.
3. Read the plaques located around the promenade of the rink while observing the skaters or find out about the plaques from the internet and complete the information.
4. List 3 facts that you learned about Rockefeller Centre that you did not know before.
5. Interview an employee or police officer, or ask at the information centre how they keep the ice frozen. If you interview a person, you must include the name and position of that employee. If you are researching the information on the website, you can easily find out about this by researching "Ice Skating Rinks". All rinks use the same process to make ice.
6. You have learned in Chemistry that water freezes at 32<sup>0</sup>F or 0<sup>0</sup>C. If the temperature for any given day is above this temperature for water to remain frozen how do they keep the ice in the skating rink from melting?
7. Sketch a picture of the Christmas tree or buy a picture postcard of the tree and paste it to the cover of your report, or print out a picture from the internet. On the cover you must include your name,
8. Completed Reports are due Friday, January 5. 2006 No Exceptions. All reports are to be handed in to your Chemistry teacher.

### Living Environment Lab:

In order to complete ONE Lab you must complete the steps listed below:

1. Visit the Ice Skating Rink at Rockefeller Centre, Located under the Christmas tree, or look up the Christmas Tree at Rockefeller Centre on the internet. (Use: "Rockefeller Centre, NYC." as the starting point for your search.
2. Sketch a design of what the Rink looks like or print out from the Internet a picture of the Rink itself.
3. Read the plaques located around the promenade of the rink while observing the skaters or find out about the plaques from the internet and complete the information.
4. List 3 facts that you learned about Rockefeller Centre that you did not know before.
5. Interview an employee or police officer, or ask at the information centre how they keep the ice frozen. If you interview a person, you must include the name and position of that employee. If you are researching the information on the website, you can easily find out about this by researching "Ice Skating Rinks". All rinks use the same process to make ice.
6. Ask an employee at Rockefeller Centre about the Christmas Tree and its history, where it was grown, how they brought it to the city and how did they put it up. You can also inquire as to what type of tree it is. If you are researching this information on the internet, you can find out all of this information by using a search engine. (Such as: Ask Jeeves)
7. Sketch a picture of the Christmas tree or buy a picture postcard of the tree and paste it to the cover of your report, or print out a picture from the internet. On the cover you must include your name.
8. Completed Reports are due Friday, January 4. 2006 No Exceptions. All reports are to be handed in to your Living Environment teacher.

