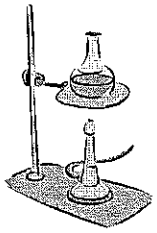

Name _____

Date _____

The Scientific Method:
Can You Write a Clear and Concise Lab Procedure?

Introduction: Once a problem has been observed and a hypothesis suggested, the next step in the scientific method is to design an experiment that will either prove or disprove the hypothesis. A key assumption is that the experiment will be repeated many times by other scientists. When scientists publish their work, they expect that it will be repeated and verified by other scientists in their field of study. In the publishing process, scientists must be able to write clear descriptions of the steps of their experiment so that others may be able to follow and repeat it.

Purpose: Can you write a procedure that can be repeated by your classmates?

Materials: Sets of building materials, notebook paper, pencil, screen

Procedure:

1. Each team of students should have two identical sets of building materials. Place one set aside. Open the second set and remove the items.
2. Working with your partner, use the items from your bag to build a unique and unusual structure. You should do your building behind a screen so that other students cannot see your work.
3. Write a set of instructions that provide clear directions for how to build your structure. You must be exact and precise. As you are writing your instructions consider whether the instructions are clear enough for others to follow. Write your instructions in a stepwise fashion. For example:
   Step 1. Place the red square on the table to provide a base.
   Step 2. Take the blue triangle and.....

4. Write your instructions for how to build your structure in the space below.

5. Once your directions have been completed, swap instructions with another team.
6. Read the directions from the other team and try to build their structure using your spare set of building materials.
7. When both teams have finished building, remove the screens. Compare the original structure to the replicated structure.

Analysis Questions:

1. Were your instructions written clearly enough for the other team to follow? _____

2. How close was the other team in replicating your structure? _____

_____

3. Which part of your instructions were the most unclear or misleading? _____

_____

_____

4. Identify the step of your instructions that you feel was the most unclear and rewrite that step.

_____

_____

5. Why is it important that scientists write procedures that can be reproduced or replicated?

_____

_____

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