

**Scientific Method and Graphing Practice**

Name \_\_\_\_\_

**PS8**

Date \_\_\_\_\_ Block \_\_\_\_\_

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**Directions:** Read the following story and then answer the questions that follow.

Mr. Burns was worried about the productivity levels of his employees at the Springfield Nuclear Power Plant. He believes that the reason his employees are so unproductive is because they only eat donuts all day long. Mr. Burns decides to carry out an experiment to test his hypothesis.

**The Experiment:**

1. Mr. Burns takes 8 employees and places them all in the same room for 8 hours.
2. Each employee is given the same difficult puzzle to complete.
3. Each employee is allowed to only drink water.
4. Four (4) employees (Homer, Lenny, Carl, and Charlie) are allowed to only eat donuts for the entire time they are working on the puzzle.
5. The other four (4) employees (Smithers, Tibor, Moleman, and Zutroy) are allowed to only eat fresh fruit for the entire time they are working on the puzzle.
6. At the end of the 8 hours, Mr. Burns measures the amount of the puzzle that they have completed.

**The Results**

<u>Employees Who Ate Donuts</u>	<u>Percent of Puzzle Completed</u>	<u>Employees Who Ate Fruit</u>	<u>Percent of Puzzle Completed</u>
Homer	22%	Smithers	97%
Lenny	49%	Tibor	80%
Carl	41%	Moleman	66%
Charlie	35%	Zutroy	83%

**The Questions**

1. What was the problem statement of the experiment? (What question was Mr. Burns trying to answer?)

2. What was Mr. Burns' hypothesis as to the reason behind his problem?
3. What did Mr. Burns believe would happen as a result of this experiment?
4. What was the **independent variable**? (What did Mr. Burns manipulate?)
5. What was the **dependent variable**? (What did Mr. Burns measure?)
6. List any 3 constant variables that Mr. Burns added to this experiment. (What factors were kept the same for all subjects?)
7. Was there a control group in this experiment? If yes, describe what it is. If no, explain what Mr. Burns could have done to provide a control group.