

Name: _____

Date: _____

The Simpsons - Identifying the Controls and Variables



Experiment 1 Smithers thinks that a special juice will increase the productivity of workers. He creates two groups of 50 workers each and assigns each group the same task (in this case, they're supposed to staple a set of papers). Group A is given the special juice to drink while they work. Group B is not given the special juice. After an hour, Smithers counts how many stacks of papers each group has made. Group A made 1,587 stacks, Group B made 2,113 stacks.

Answer:

1. Which is the control group? _____
2. Which is the experimental group? _____
3. Identify the independent variable. _____
4. Identify the dependent variable. _____
5. Given the experimental design, what should Smithers' conclusion be? _____
6. How do you think the experiment could be improved? _____



Experiment 2 Homer notices that his shower is covered in a strange green slime. His friend Barney tells him that coconut juice will get rid of the green slime. Homer decides to check this out by spraying half of the shower with coconut juice. He sprays the other half of the shower with water. After 3 days of "treatment" there is no change in the appearance of the green slime on either side of the shower.

Answer:

1. What hypothesis is Homer trying to test? _____
2. What is Homer's conclusion? _____
3. What is the control group? _____
4. What is the experimental group? _____
5. What is the independent variable? _____
6. What is the dependent variable? _____



Experiment 3

Bart believes that mice exposed to microwaves will become extra strong (maybe he's been reading too much Radioactive Man). He decides to perform this experiment by placing 10 mice in a microwave for 10 seconds. He compared these 10 mice to another 10 mice that had not been exposed. His test consisted of a heavy block of wood that blocked the mouse food. He found that 9 out of 10 of the microwaved mice were able to push the block away. 6 out of 10 of the non-microwaved mice were able to do the same.

Answer:

1. What is the control group? _____
2. What is the experimental group? _____
3. What is the independent variable? _____
4. What is the dependent variable? _____
5. What should Bart's conclusion be? _____
6. How could Bart's experiment be improved? _____



Experiment 4

Krusty was told that a certain itching powder was the newest best thing on the market. It even claims to cause 50% longer lasting itches. Interested in this product, he buys the itching powder and compares it to his usual product. One test subject (A) is sprinkled with the original itching powder, and another test subject (B) was sprinkled with the Experimental itching powder. Subject A reported having itches for 30 minutes. Subject B reported having itches for 30 minutes.

Answer:

1. What is the control group? _____
2. What is the experimental group? _____
3. What is the independent variable? _____
4. What is the dependent variable? _____
5. Does the data support the advertisements claims about its product? Why or why not?



Experiment 5

Lisa is working on a science project. Her task is to answer the question: "Does Rogooti (which is a commercial hair product) affect the speed of hair growth"? Her family is willing to volunteer for the experiment.

Answer:

1. Describe how Lisa would perform this experiment. Identify the control group, and the independent and dependent variables in your description. _____

2. Identify the hypothesis in this experiment. _____

3. State a conclusion to support your hypothesis. _____

4. State a conclusion that refutes the hypothesis. _____
