

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Identify the Controls and Variables

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.



Identify the:

1. Control Group
2. Independent (Manipulated) Variable
3. Dependent (Responding) Variable
4. What should Smithers' conclusion be?
5. How could this experiment be improved?



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 this out by spraying half of the shower with coconut juice.

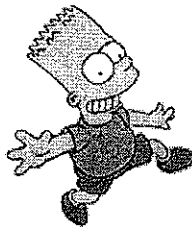
He sprays the other half of the shower with water. After 3 days of "treatment" there is no change in the appearance of the green slime on either side of the shower.

6. What was the initial observation?

Identify the-

7. Control Group
8. Independent (Manipulated) Variable
9. Dependent (Responding) Variable
10. What should Homer's conclusion be?

Bart believes that mice exposed to radiowaves will become extra strong (maybe he's been reading too much Radioactive Man). He decides to perform this experiment by placing 10 mice near a radio for 5 hours. 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 8 out of 10 of the radiowaved mice were able to push the block away. 7 out of 10 of the other mice were able to do the same.



Identify the-

11. Control Group
12. Independent (Manipulated) Variable
13. Dependent (Responding) Variable
14. What should Bart's conclusion be?
15. How could Bart's experiment be improved?



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 to have itches for 45 minutes

Identify the-

16. Control Group
17. Independent (Manipulated) Variable
18. Dependent (Responding) Variable
19. Explain whether the data supports the advertisements claims about its product.



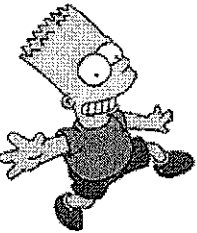



Lisa is working on a science project. Her task is to answer the question: "Does Rogooti (which is a commercial hair product) affect the speed of hair growth". Her family is willing to volunteer for the experiment.

20. Design Lisa's experiment.

# Identify the Controls and Variables KEY

## Original Document: Controls and Variables

 <p>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.</p>	<p>Identify the:</p> <ol style="list-style-type: none"> <li>Control Group -- Group B</li> <li>Independent Variable -- Special Juice</li> <li>Dependent Variable -- Number of stacks</li> <li>What should Smithers' conclusion be? It doesn't work</li> <li>How could this experiment be improved? ANswers vary</li> </ol>
 <p>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 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.</p>	<ol style="list-style-type: none"> <li>What was the initial observation? Slime on the shower</li> </ol> <p>Identify the-</p> <ol style="list-style-type: none"> <li>Control Group - Side sprayed with water</li> <li>Independent Variable - Coco Juice</li> <li>Dependent Variable - Appearance of Slime</li> <li>What should Homer's conclusion be? It doesn't work</li> </ol>
<p>Bart believes that mice exposed to radiowaves will become extra strong (maybe he's been reading too much Radioactive Man). He decides to perform this experiment by placing 10 mice near a radio for 5 hours. 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 8 out of 10 of the radiowaved mice were able to push the block away. 7 out of 10 of the other mice were able to do the same.</p> 	<p>Identify the-</p> <ol style="list-style-type: none"> <li>Control Group - Mice not radiowaved</li> <li>Independent Variable - radio</li> <li>Dependent Variable - Strength of mice</li> <li>What should Bart's conclusion be? Improves strength, maybe inconclusive</li> <li>How could Bart's experiment be improved? More mice, test group before and after treatment</li> </ol>
 <p>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 to have itches for 45 minutes.</p>	<p>Identify the-</p> <ol style="list-style-type: none"> <li>Control Group - Subject A</li> <li>Independent Variable - powder</li> <li>Dependent Variable - length of itchiness</li> <li>Explain whether the data supports the advertisements claims about its product. -</li> </ol>

	It does
<p>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.</p>	<p>20. Describe how Lisa would perform this experiment. Identify the control group, and the independent and dependent variables in your description.</p> <p>Two heads of hair, or same head with half treated and the other untreated can be used. Measure the hair growth.</p>

