



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 [1]
- **GROUP B**
2. Independent Variable [1]
- **SPECIAL JUICE**
3. Dependent Variable [1]
- **# OF STACKS OF PAPER**
4. What should Smithers' conclusion be? [1]
- **SPECIAL JUICE DOES NOT IMPROVE PRODUCTIVITY**
5. How could this experiment be improved? [1]
- **CONTROL VARIABLES = AMT OF SLEEP, AGE OF WORKERS, DO A PRE-TEST, REPEAT THE EXPT**

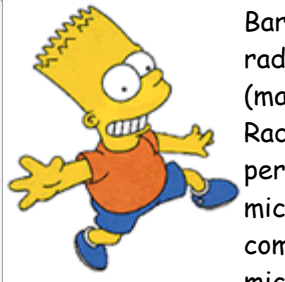


Homer notices that his shower is covered in a strange green slime. His friend Barney tells him that coconut juice will get rid of the green slime. Homer decides to check this out by spraying half of the shower with coconut juice. He sprays the other half of the shower with water. After 3 days of "treatment"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

6. What was the initial observation? [1]
- **SHOWER COVERED IN STRANGE GREEN SLIME**

Identify the

7. Control Group [1]
- **SHOWER SPRAYED WITH WATER**
8. Independent Variable [1]
- **USE OF COCONUT JUICE**
9. Dependent Variable [1]
- **AMOUNT OF GREEN SLIME ON SHOWER**
10. What should Homer's conclusion be? It doesn't work[1]
- **COCONUT JUICE DOES NOT REMOVE GREEN SLIME FROM A SHOWER WALL**



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 [1]
- **MICE NOT EXPOSED TO RADIO WAVES**
12. Independent Variable [1]
- **EXPOSURE TO RADIO WAVES**
13. Dependent Variable [1]
- **ABILITY TO PUSH BLOCK TO ACCESS FOOD**
14. What should Bart's conclusion be? [1]
- **IT IS POSSIBLE THAT RADIO WAVES IMPROVE A MOUSE'S STRENGTH**
15. How could Bart's experiment be improved? [1]
- **DO A PRE-TEST, REPEAT THE EXPERIMENT, CONTROL THE FREQUENCY OF THE WAVES, ETC**



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 [1]
- **SUBJECT A: ORIGINAL ITCHING POWDER**
17. Independent Variable [1]
- **EXPERIMENTAL ITCHING POWDER**
18. Dependent Variable [1]
- **LASTING TIME OF ITCHING**
19. Explain whether the data supports the advertisements claims about its product. - It does[1]
- **IT APPEARS THAT THE EXPERIMENTAL ITCHING POWDER CAUSES LONGER LASTING ITCHING THAN THE ORIGINAL POWDER**



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. Describe how Lisa would perform this experiment. Identify the control group, and the independent and dependent variables in your description. [5]
CONTROL: FAMILY MEMBERS NOT USING RAGOOTI
INDEPENDENT: USE OF RAGOOTI
DEPENDENT: AMOUNT OF HAIR GROWTH (LENGTH?) PER AMOUNT OF TIME
- **RUN EXPERIMENT BY HAVING SOME MEMBERS USE RAGOOTI AND OTHERS NOT. AT THE END OF A SPECIFIED AMOUNT OF TIME, RECORD THE LENGTH OF HAIR GROWTH.**