Name:
Date:
Science p. ___
Teacher:

Introduction to Variables

Independent variable: The variable I change. I know the measurement before the investigation begins. It's the **ONE** thing I change on purpose in the investigation. I write the measurement into my data table before I do anything. I want to see how it causes changes to the dependent variable.

Dependent variable: The variable I Don't know before the investigation begins. I measure it During the investigation and then write it down.

Control variable: These variables I Can't change and want to keep the same. I want them all to be the same every time I test my independent variable. They make sure the test is fair. If I change more than one variable, I won't know which one causes the change.

GUIDED PRACTICE:

1. Mrs. McNiece wanted to see how different types of music affected students' pulse rates. She played different types of music: heavy metal, rap, R&B, alternative, pop, country, and classical music. **Identify the independent variable**.
   - types of music
   - classical music resulted in the highest pulse rate
   - Mr. McNiece
   - high pulse rate
   - pulse rate

2. Mario studied how far room temperature water would spurt out of a platic milk carton when 3mm holes were punched at different heights from the bottom of the container. **Identify the dependent variable**.
   - 3 mm holes
   - distance water traveled out of carton
   - different heights of holes in container
   - ice water from Iceland

7. Mrs. McNiece wanted to see how different types of music affected students' pulse rates. She played different types of music: heavy metal, rap, R&B, alternative, pop, country, and classical music. **What constant should be considered when doing this experiment**?
   - using a different student for each music type
   - types of music
   - amount of time the music was played
   - using a different room for each trial

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 Variable

3. Dependent 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 iniitial observation?

Identify the-

7. Control Group

8. Independent Variable

9. Dependent 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.

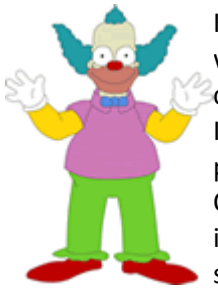
Identify the-11. Control Group

12. Independent Variable

13. Dependent 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 Variable

18. Dependent Variable

19. Explain whether the data supports the advertisements claims about its product.