

Scientific Method Simpson Worksheet

mail box _____

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 paper each group has made. Group A made 1,587 stacks and Group B made 2,113 stacks.

Identify the –

Control Group	Independent Variable
Dependent Variable	What should Smithers conclusion be?

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.

Identify the

What was the initial observation?	Control Group
Independent variable	Dependent variable
What should Homer's conclusion be?	

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 the microwave for 10 seconds. He compared these 10 mice to another 10 mice that have not been exposed to radiation. His test consisted of a heavy block of wood that blocked the mouse food. He found that 8 out of 10 of the microwaved mice were able to push the block away. Seven out of 10 of the non- microwaved mice were able to do the same thing.

Identify the

Control Group	Independent Variable
Dependent Variable	What should Bart's conclusion be?
How could Bart's experiment be improved?	

4. Krusty was told that a certain itching powder was the newest best thing on the market. The itching powder claims to cause 50% longer lasting itches. Interested in this product, he buys the itching powder and compares it to his usual product. Test Subject A is sprinkled with the original itching powder and another Test Subject B was sprinkled with the experimental powder. Subject A reported having itches for 30 minutes and Subject B reported having itches for 45 minutes.

Identify the

Control Group	Independent Variable
Dependent Variable	What should Krusty's conclusion be?
Explain whether the data supports the advertisement claims about its product?	

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

Control Group	Experimental Group
Independent Variable	Dependent Variable
Data to be collected?	

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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 paper each group has made. Group A made 1,587 stacks and Group B made 2,113 stacks.

Identify the -

Control Group <u>Group B</u>	Independent Variable <u>Juice</u>
Dependent Variable <u>Stapled stacks</u>	What should Smithers conclusion be? <u>Hypothesis false / Juice lowered productivity</u>

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.

Identify the

What was the initial observation? <u>Green slime</u>	Control Group <u>1/2 of shower treated w/ water</u>
Independent variable <u>coconut juice</u>	Dependent variable <u>treatment of slime "slime removal"</u>
What should Homer's conclusion be? <u>The coconut juice ineffective. Barney's Hypothesis false</u>	

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 the microwave for 10 seconds. He compared these 10 mice to another 10 mice that have not been exposed to radiation. His test consisted of a heavy block of wood that blocked the mouse food. He found that 8 out of 10 of the microwaved mice were able to push the block away. Seven out of 10 of the non- microwaved mice were able to do the same thing.

Identify the

Control Group Non-microwaved mice	Independent Variable microwave
Dependent Variable extra strength	What should Bart's conclusion be? microwaves might help
How could Bart's experiment be improved? Larger sample size	

4. Krusty was told that a certain itching powder was the newest best thing on the market. The itching powder claims to cause 50% longer lasting itches. Interested in this product, he buys the itching powder and compares it to his usual product. Test Subject A is sprinkled with the original itching powder and another Test Subject B was sprinkled with the experimental powder. Subject A reported having itches for 30 minutes and Subject B reported having itches for 45 minutes.

Identify the

Control Group Subject A	Independent Variable New itching powder
Dependent Variable duration of itching	What should Krusty's conclusion be? The itching powder claim is correct.
Explain whether the data supports the advertisement claims about its product? 50% of 30 minutes is 15 min. $30 + 15 = 45 \text{ min}$	

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

Control Group No happy hair - (Marge & Bart)	Experimental Group Happy hair - Homer & Maggie
Independent Variable Happy hair	Dependent Variable Hair growth
Data to be collected? Speed of hair growth.	