Name Answer Key Class Period _____ Date _____

SIMPSON SCIENTIFIC METHOD

Smithers believes that his workers at the factory could be more productive. He thinks that a special juice will increase the productivity of workers. He selects 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 a 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 6,587 stacks, Group B made 1,113 stacks.

Identify the:

1. Hypothesis

If his workers drink a special juice, then their productivity will increase.

2. Control Group

No special juice (Group B)

3. Experimental Group

Special juice (Group A)

4. Independent Variable

special juice

5. Dependent Variable

Productivity

6. What should Smithers conclusion be?

It does [redacted] increase productivity

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

7. What was Homer's initial observation?

Slime on his shower walls

Identify the:

8. Hypothesis

If he sprays coconut juice on the walls, the green slime will go away.

9. Control Group

water on walls

10. Independent Variable

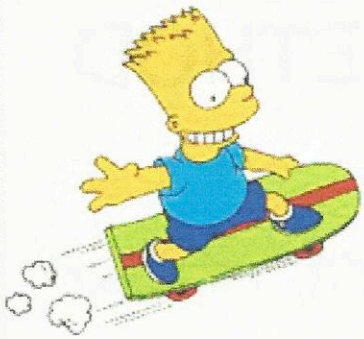
Presence of coconut juice

11. Dependent Variable

Amount of green slime on walls

12. What should Homer's conclusion be?

The addition of coconut juice does not help get rid of green slime. The hypothesis was wrong/ incorrect!



Bart believes that mice exposed to microwaves will become extra strong (maybe he's been reading too much Radioactive Man). He decides to perform an experiment by placing 10 mice in the microwave for 10 seconds. He then compared the performance of these 10 mice to another 10 mice that had not been exposed to the microwaves. His test consisted of a heavy block of wood that blocked the mouse from food. He found that 8 out of 10 of the microwaved mice were able to push the block away to get to the food. 7 out of 10 of the non-microwaved mice did the same.

Identify the:

13. Hypothesis

If mice are exposed to microwaves, then they will become extra strong.

14. Control Group

Not exposed to microwaves

15. Experimental Group

Exposed to microwaves

16. Independent Variable

Presence of microwaves

17. Dependent Variable

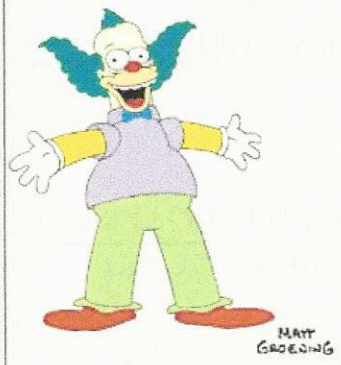
Extra strength

18. What should Bart's conclusion be?

The presence of microwaves does not really make them stronger.

19. What are the **ethical** considerations of this experiment?

The safety of the mice.



Krusty the Clown 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) is sprinkled with the Experimental itching power. Subject A reported having itches for 30 minutes, Subject B reported to have itches for 45 minutes.

Identify the:

20. Hypothesis

If you use the new itching powder, then it causes 50% longer lasting itches.

21. Control Group

Original itching powder

22. Experimental Group

experimental itching powder

23. Independent Variable

Type of itching powder

24. Dependent Variable

Length of itchiness

25. Did the claims of the new product meet the experiment outcome? Did it meet expectations?

yes, because 1/2 of 30 minutes is 15 minutes so the itch is 50% longer!