

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

# The Simpsons and the Scientific Method

Write a definition for each:

Control group:

Independent variable:

Dependent variable:



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



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 a microwave for 10 seconds. 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 microwaved mice were able to push the block away. 7 out of 10 of the non-microwaved 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?

## Squidward's Symphony



Squidward loves playing his clarinet and believes it attracts more jellyfish than any other instrument he has played. In order to test his hypothesis, Squidward played a song on his clarinet for a total of 5 minutes and counted the number of jellyfish he saw in his front yard. He

played the song a total of 3 times on his clarinet and repeated the experiment using a flute and a guitar. He also recorded the number of jellyfish he observed when he was not playing an instrument. The results are shown in the chart.

Trial	No Music	Clarinet	Flute	Guitar
1	5	15	5	12
2	3	10	8	18
3	2	12	9	7

16. What is the independent variable?
17. What is the dependent variable?
18. What should Squidward's conclusion be?
19. Are the results reliable? Why or why not?

Special Food Group (Time in minutes/seconds)			Regular Food Group (Time in minutes/seconds)		
Fish	Before	After	Fish	Before	After
1	1:06	1:00	1	1:09	1:08
2	1:54	1:20	2	1:45	1:30
3	2:04	1:57	3	2:00	2:05
4	2:15	2:20	4	1:30	1:23
5	1:27	1:20	5	1:28	1:24
6	1:45	1:40	6	2:09	2:00
7	1:00	1:15	7	1:25	1:19
8	1:28	1:26	8	1:00	1:15
9	1:09	1:00	9	2:04	1:57
10	2:00	1:43	10	1:34	1:30

## Microwave Miracle

Patrick believes that fish that eat food exposed to microwaves will become smarter and would be able to swim through a maze faster. He decides to perform an experiment by placing fish food in a microwave for 20 seconds. He has the fish swim through a maze and records the time it takes for each one to make it to the end. He feeds the special food to 10 fish and gives regular food to 10 others. After 1 week, he has the fish swim through the maze again and records the times for each.

20. What was Patrick's hypothesis?
21. Which fish are in the control group?
22. What is the independent variable?
23. What is the dependent variable?
24. Look at the results in the charts. What should Patrick's conclusion be?