

Scientific Method

Controls and Variables – Part 1

SpongeBob and his Bikini Bottom pals have been busy doing a little research. Read the description for each experiment and answer the questions with complete sentences. DO NOT WRITE THE QUESTIONS.

1. Patty Power

Mr. Krabs wants to make Bikini Bottoms a nicer, less smelly, place to live. He has created a new sauce that he thinks will reduce the production of body gas associated with eating Krabby Patties from the Krusty Krab. He recruits 100 customers with a history of gas problems. He has 50 of them (Group A) eat crabby patties with the new sauce. The other 50 (Group B) eat Krabby Patties with sauce that looks just like new sauce but is really just mixture of mayonnaise and food coloring. Both groups were told that they were getting the sauce that would reduce gas production. Two hours after eating the crabby patties, 30 customers in group A reported having fewer gas problems and 8 customers in group B reported having fewer gas problems.

- a) Which people are in the control group?
- b) What is the independent variable?
- c) What is the dependent variable?
- d) What should Mr. Krabs' conclusion be?
- e) Why do you think 8 people in group B reported feeling better?

2. Slimotosis

SpongeBob notices that his pet snail, Gary, is suffering from slimotosis, which occurs when the shell develops a nasty slime and gives off a horrible odor. His friend Patrick tells him that rubbing seaweed on the shell is the perfect cure, while Sandy says that drinking Dr. Kelp will be a better cure. SpongeBob decides to test this cure by rubbing Gary with seaweed and having him drink Dr. Kelp for one week. After a week of treatment, the slime is gone and Gary's shell smells better.

- a) What was the initial observation?
- b) What is the independent variable?
- c) What is the dependent variable?
- d) What should Sponge Bob's conclusion be?