

**Scientific Method
Controls and Variables – Part 1**

Name _____

SpongeBob and his Bikini Bottom pals have been busy doing a little research. Read the description for each experiment and answer the questions.

1 - Patty Power

Mr. Krabbs wants to make Bikini Bottoms a nicer place to live. He has created a new sauce that he thinks will reduce the production of body gas associated with eating crabby 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 crabby 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.

Which people are in the control group?

What is the independent variable?

What is the dependent variable?

What should Mr. Krabs' conclusion be?

control tell you?" ... (s) being tested? What will each co

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ong it takes to get

5. What is one REPLICATE in your experiment? How many replicates (e.g., measurements, observations, trials) in each treatment level and control will there be? Consider how long it takes to get one observation and how much time you have.

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, etc.) and the
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6. Outline the step by step procedure you'll use to obtain a single measurement or observation to specify all the quantitative parameters (how much, how long, when, what dose, etc.) and the equipment used for each step. This must be precise and clear enough that anyone can consistently replicate your experiment with a consistent level of accuracy and complete enough for anyone to replicate your experiment with comparable equipment.