Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

P. \_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Scientific Methods—Bikini Bottom Experiments**

***The Bikini Bottom gang loves science class and wanted to do a little research. Read the description for each experiment and use your knowledge of the scientific method to answer the questions.***

(1) **Flower Power**

SpongeBob loves to garden and wants to grow lots of pink flowers for his pal Sandy. He bought a special Flower Power fertilizer to see if will help plants produce more flowers. He plants forty plants of the same size in separate containers with the same amount of potting soil. He places twenty plants in a sunny window and waters it every day with fertilized water. He places the other twenty plants on a shelf in a closet and waters it with plain water every other day.

What did SpongeBob do wrong in this experiment? Explain. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What should SpongeBob do to test the effectiveness of Flower Power fertilizer? Write an experiment.

(2) **Super Snails**

Gary is not the smartest snail in Bikini Bottom and believes he can improve his brain power by eating Super Snail Snacks. In order to test this hypothesis, he recruits SpongeBob and several snail friends to help him with the experiment. SpongeBob first creats and gives an intelligence test to the 20 snails before he starts feeding them the Super Snail Snacks. Then he takes the same 20 snails and feeds them one Super Snail Snack with each meal every day for three weeks.

Control Group:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Test Results**

|  |  |  |
| --- | --- | --- |
| Snail | Before | After |
| Gary | 64% | 80% |
| Larry | 78% | 78% |
| Mary | 82% | 84% |
| Barry | 72% | 70% |
| Terry | 75% | 74% |
| Nary | 82%  5 | 83% |
| Kari | 88% | 88% |
| Dairy | 77% | 79% |
| Fairy | 65% | 63% |
| Harry | 89% | 88% |
| Jerry | 83% | 84% |
| Perry | 79% | 81% |
| Rerry | 55% | 55% |
| Wary | 89%  5 | 90% |
| Zarry | 62% | 61% |
| Yeary | 78% | 78% |
| Query | 74% | 74% |
| Sarry | 73% | 74% |
| Very | 86% | 88% |
| Urey | 66% | 68% |

Independent Variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dependent Variable: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Based on the data provided, do the Super Snail Snacks work? Explain your answer.

3. **Bubble Time**

Patrick loves his Juicy Algae bubble gum that blows really big bubbles. But he wonders if he could blow bigger bubbles with the new bubble gum, Slimy Seaweed. He would like to be able to blow bigger bubbles than anyone else in Bikini Bottom. He needs your help to find out if he can create bigger bubbles with the new Slimy Seaweed bubble gum.

Write an experiment to test the bubble power of both Juicy Algae bubble gum and the new Slimy Seaweed bubble gum..

***Fill in the blanks***

Dependent Variable Independent Variable

|  |  |
| --- | --- |
|  | Number of hours worked |
| Price of a speeding ticket |  |
|  | Amount of mosquito repellant applied |
| Amount of cell phone bill |  |
| Height of lawn |  |
| Grade in science |  |
|  | Pressure applied to the gas pedal |
| Annual salary |  |
| Occurrence of disease |  |