

**Scientific Method
Bikini Bottom Experiments**

Answer Key

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 two plants of the same size in separate containers with the same amount of potting soil. He places one plant in a sunny window and waters it every day with fertilized water. He places the other plant on a shelf in a closet and waters it with plain water every other day.

(1) What did SpongeBob do wrong in this experiment? Explain.

SpongeBob did not provide both plants with the same amount of water and sunshine. In order to test the fertilizer correctly, both plants should have been placed in the sunny window and watered every day with the same amount of water. The only difference between the two plants should have been the fertilizer - one plant would be watered with the water with fertilizer and the other would be watered with plain water.

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

Question: Is Flower Power fertilizer effective in plant growth?

Hypothesis: I think Flower Power fertilizer will be effective on plant growth, because people buy fertilizers all the time.

Test: Control: plant with no fertilizer

Variable: plant with fertilizer added

Dependent Variable: plant with fertilizer added

Independent Variable: Height of the plant

Steps: Place two plants in separate containers with the same amount of potting soil in the same sunny window. Water each plant every day with the same amount of water, one of the containers of water should contain the fertilizer and be used on the same plant every day. Measure the height of the plants each week for three weeks.

Data:

Weeks	Fertilized Plant	Un-fertilized Plant
1	20 cm	20 cm
2	30 cm	25 cm
3	40 cm	30 cm

Conclusion: Based on the data collected I believe that Flower Power fertilizer does work. The plant that was given the fertilizer did grow at a more rapid rate than the un-fertilized plant. My hypothesis was proven correct based on this experiment. Next time I would like to see if you can give a plant too much fertilizer by increasing the amount of fertilizer given each day. When comparing my data with other groups I found that most people had the similar results to me, except one group who had both their plants die. I think the group whose plants died did not water the plants as often as needed.