

Name: Key  
Scientific Method HW

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

### Experiment 1:

Five tomato plants of the same height were placed in the same size pots, in the same type of soil and each was given the same amount of water. Each plant was under a light bulb of the same intensity as the others but each light was of a different color. Each day, the plants were given light (each its own color) for 12 hours and left in darkness for 12 hours. The height of each plant was measured in centimeters at the end of each week for 10 weeks.

Light Color	Week Number									
	1	2	3	4	5	6	7	8	9	10
Yellow	4	5	6	7	8	9	10	11	12	13
Green	4	4	4	3	3	2	2	1	0	0
Blue	4	4	4	5	5	5	5	6	6	6
Purple	4	4	5	5	6	6	7	7	8	8
Red	4	5	6	7	8	9	10	11	12	13

- a) What question is tested by this experiment?

What is the best light color for plant growth?

- b) Write a hypothesis for this experiment.

\*Be sure to write the hypothesis in the proper "If..., then..." format.

If plants are given green light, then they will grow the least because plants reflect green light.

- c) An **independent variable** is the variable that is changed or manipulated by the scientist.

What is the Independent Variable? Different color light

- d) A **dependent variable** is the variable being tested and measured in a scientific experiment.

What is the Dependent Variable? Height of plant

- e) What factors are held constant in the experiment?

Same height plants, same size pots, same soil type, same amount of water, same intensity, 12 hours light/12 hours darkness

- f) Is there a control? If not, what control would you suggest?

No, A lightbulb (white light)

- g) Write a conclusion for this experiment.

Plants with yellow and green light grow the tallest.  
Plants given green light grew the least.