Name: _____ Date: _____

Reflection of Light
Investigation: Color Demo

I. Newton's Experiment

1. a. What was Newton's experiment?

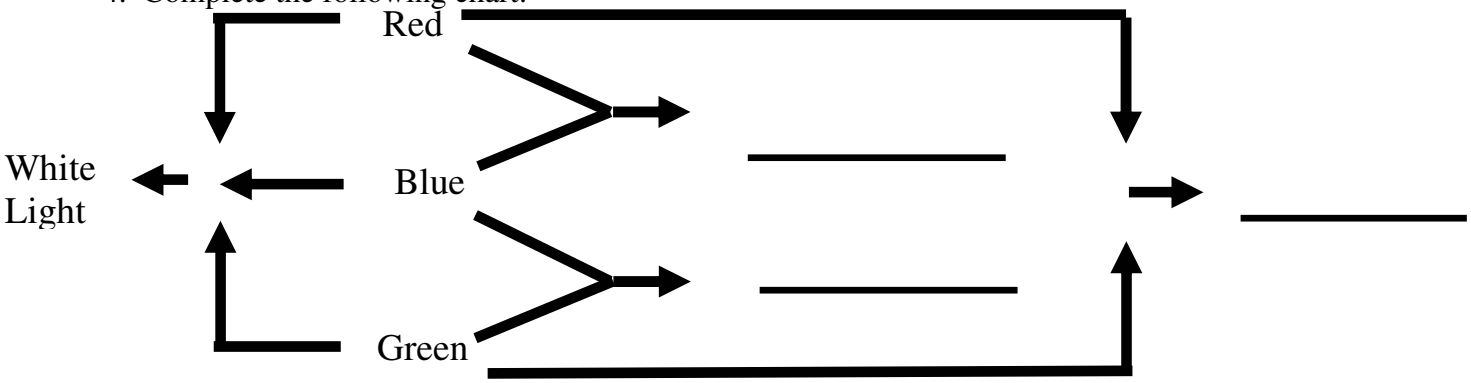
b. What conclusions did he make?

II. Mixing Colored Light

2. What are the 3 primary colors of light?

3. List the 3 secondary colors of light and the primary colors that form each.

4. Complete the following chart:



5. Define complementary colors.

6. What are the complementary colors of:
   a. magenta

   b. blue

   c. cyan

7. Is black a color? Why does an object appear black?

III. Color by Reflection

8. What is the difference between color addition and color subtraction?

9. Under white light, the six colored boards appear red, blue, green, magenta, yellow, and cyan.
   a. What colors will they ideally appear in red light?

   b. What colors will they ideally appear in a mixture of red and green light?

10. When green light shines on a red rose, why do the petals look black?

11. What color will a yellow banana appear when illuminated by
    a. white light?

    b. red light?

    c. blue light?

    d. green plus red light?

IV. Color Wheel and the Mixing of Light Rays

12. Describe the color wheel when
    a. it is not moving

    b. it is spinning

V. Color Printing

13. What colors of ink are used in color printing? Explain why.

14. What is the reason for adding the black plates?

VI. Afterimages

15. What do the cones in your eye detect? the rods?

16. What do you observe when the
    a. cyan filter is removed?

    b. yellow filter is removed?

    c. magenta filter is removed?

17. What colors are in the "US flag"? the "Texas flag"?
    a. as you stare at it?

    b. when it is removed?

VII. Color Blind Test

18. Color blindness usually involves which colors?

19. What percent of the population is affected by colorblindness?

20. What do you see in each of the slides of color blind test on the powerpoint?
