Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour \_\_\_\_\_\_\_\_

**Station 3: Absorb, Transmit and Reflect Light**

**Task:** Today you will test color filters to compare how different light colors are absorbed, transmitted, or reflected by different paper colors. Color filters absorb certain wavelengths of color and transmit the other wavelengths. A blue color filter will transmit blue light, and absorb all other colors. You will test how white, red, green, and blue light are absorbed, transmitted or reflected by white, red, green and blue paper.

**Materials:**

-1 light -1 power source - 4 filters -1 each of white, red, blue and green construction paper

**Procedure**

1. You will be testing how a white, red, green and blue light are absorbed, transmitted, or reflected by white, red, green and blue paper.

2. Darken the room.

3. Turn on the white light and aim it at the white paper. Observe and record the color of the paper along with how the light behaves.

4. One by one, shine the white light at the red, blue, and then the green pieces of paper. For each test, observe and record the color of the paper along with how light behaves.

5. Take turns shining the light with the red filter at the white, red, blue and then green sheets of paper. Observe and record the paper color and how the light behaves with each test.

6. Repeat step 5 using the blue filter, and then the green filter. After each test, record your observations

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | White paper | Red Paper | Blue Paper | Green Paper |
| White light |  |  |  |  |
| Red filter |  |  |  |  |
| Blue filter |  |  |  |  |
| Green filter |  |  |  |  |

**(Blue)Analysis and Conclusion Questions**

1. Create and annotate a model showing your experimental results for shining an incident red light on a blue sheet of paper. Use the vocabulary words incident, reflected, transmitted and absorbed in your response.

2. Create an annotated model of one of your tests below. Your model must include incident, a light color, an object including its color, and the light that is reflected. Please label and color your model. Use the vocabulary words incident, reflected, transmitted and absorbed in your response

3. What do you predict will happen when a red light shines on a green shirt? Draw and annotate a model to explain your claim. Use the vocabulary words incident, reflected, transmitted and absorbed in your response

**(Yellow) Analysis and Conclusion Questions**

1. Create and annotate a model showing your experimental results for shining an incident red light on a blue sheet of paper. Use the vocabulary words incident, reflected, transmitted and absorbed in your response.

2. What do you predict will happen when a red light shines on a green shirt? Draw and annotate a model to explain your claim. Use the vocabulary words incident, reflected, transmitted and absorbed in your response