

Name: \_\_\_\_\_

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

### Experiments with Light

#### Gas Discharge Tube

1. Turn on the gas discharge tube. Observe the color inside the tube and record below.
2. Put on the spectra glasses and record what you see. What colors are present when viewed through the glasses?
3. What does this tell you about the color of the gas inside the tube when viewed without the glasses?
4. This is an example of \_\_\_\_\_

#### Pencil in Water

1. Fill up a beaker almost to the point of being full. Place a pencil inside of it. Record the angle between the pencil and the surface of the water when viewing it from above water.
2. To the best of your ability, record the angle between the pencil and the surface of the water when viewing it below water.
3. Why is there a difference in these angles?
4. This is an example of \_\_\_\_\_

#### Flashlight and Paper

1. Poke a small hole through the center of the piece of paper given to you. Have a partner hold it up in the air, parallel to a wall. When a light is shined upon the paper, what kind of pattern should you see on the wall? Sketch it below.

2. What is actually observed when the flashlight is shined upon the wall?
3. This is an example of \_\_\_\_\_

### Light and a Solution

1. Fill a beaker about three quarters of the way full with water. Shine a light downward on the top of the beaker. Describe the intensity of the light at the bottom of the beaker.
2. Add a few crystals of potassium permanganate to the beaker. Allow them to dissolve. Shine a light downward on the top of the beaker. Describe the intensity of the light at the bottom of the beaker.
3. This is an example of \_\_\_\_\_

### Polarization

1. Hold the filters parallel to each other so that light can pass through them. Shine a light at the filter and slowly turn one filter. Stop at a 45 degree angle. Describe the intensity of the light that passes through.
2. Continue to turn it until it reaches a 90 degree angle. Describe the intensity of the light that passes through.
3. This is an example of \_\_\_\_\_