What Does Light See? Worksheet

1. For this lesson, we need to know several key facts about the nature of light. In the space below, list at least three things you know about light that may be important. (work in student pairs)

Blowing Bubbles Activity

- 2. (in groups of three) Have one team member pour a small amount of bubble fluid onto the plate and use the straw to stir it around. Then use the straw to slowly blow a bubble on the surface of the plate. Have another team member observe and describe the bubble from eye level. Have the third team member record the observations. Switch roles and repeat so every team member does each role. What did you see? Write your observations in the space below.
- 3. What causes the light to do this? In the space below, write your hypothesis/explanation in at least two complete sentences.

Bragg Mirrors/Porous Thin Films Activity

4. (in groups of three) Dip your pipet into the jar of water, and let a small drop of water fall onto the surface of the Bragg mirror. In the space below, record what you see.

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5. Based on what you now know about refraction, what parameter was altered when you dropped the water onto the sample? How did changing this parameter cause the observed effect?

Exit Ticket (answer the following questions)

1. What is refraction, and what causes it?

2. What parameters can we change to cause a shift in the color that we observe in a thin film, and how do these parameters bring these changes about? Explain each parameter in at least one complete sentence, or draw a picture.

3. How can a porous thin film use refraction to tell us if a certain microscopic element is present, and could this help us solve our challenge question?