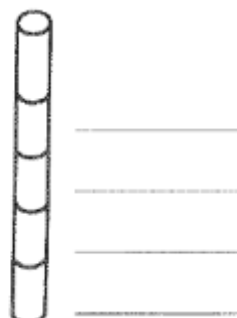
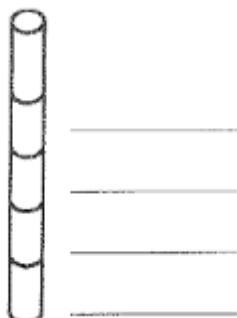
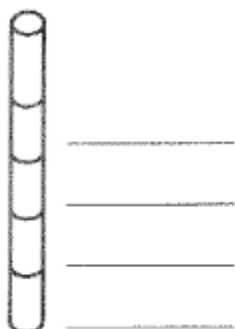
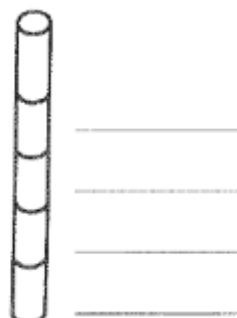
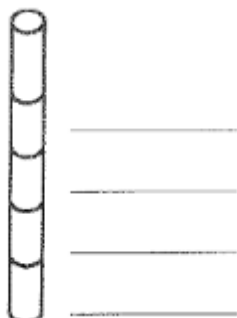
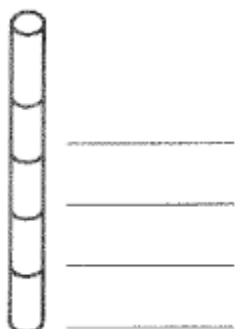
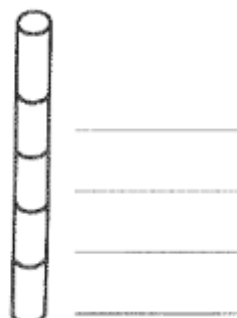
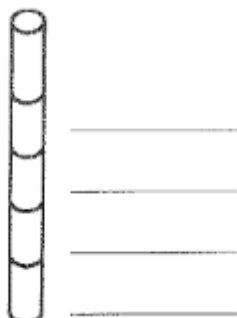
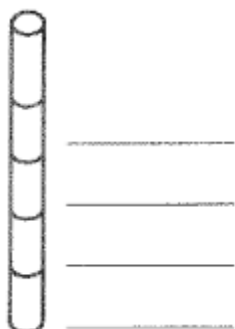


**(Edited version for public review)**

## 1.4 Act 1

## Layering the Unknown



### KEY

Y = Yellow

R = Red

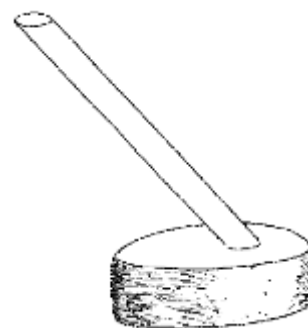
B = Blue

G = Green

Circle the coloring combinations that layer successfully.

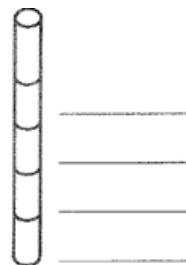
- A. Insert the straw in the potato slice at a 45 degree angle.
- B. Before adding the liquids, decide with your partner which color you'll add first, second, third, and fourth. Write the first letter of each color on the lines near the picture of a straw.
- C. Gently add the first colored liquid, drop by drop, until there is about one finger's width of liquid in the straw.

- D. Add the next three liquids in the same way following the order that you wrote down.
- E. Circle the colors that layered.
- F. Empty the straw over the waste container by removing it from the potato. Decide on your next order of colors, and write it on the next set of lines.
- G. Keep trying new combinations until you make four layers that do not mix.



Questions:

1. Come to a class consensus about the order of the layers, and list it on the diagram.



2. Did any team come up with different results? Why do you think this occurred?

3. Do you have a conjecture about what any of the liquids are? List them below:

4. Why do you think the liquids layered like they did? Explain.

5. What do you think would happen if you turned the straw upside down? Try it and report the result.

6. What do you think these different liquids look like at the particle level? Draw your representations for each below.

Bottom Layer:	2 <sup>nd</sup> from Bottom:	2 <sup>nd</sup> from Top:	Top Layer: