

Chromatography Lab

Objectives:

- To separate pigments found in markers.
- To determine the primary colors of pigments.
- To calculate the R_f (RATE OF FLOW) value of primary colors.
- To apply this method and how it would be used in the field of forensic science

Materials:

- Chromatography paper
- Water
- Beaker
- Markers (3 per group)
- Pencil
- Ruler
- Calculator

Procedure:

1. Measure 3cm from the bottom and draw a line across the width in pencil.
2. Each group will have 3 markers: a primary color (red, yellow or blue) a secondary color (orange, green, purple) and the last color is black or brown.
3. On the starting line, dab one color at a time, about 10 times each. The 3 colors should not touch. You will have 3 dots on the starting line.
4. In a beaker, add a small amount of water about 1 - 2 mL. The water should **not** touch the pigments!!!
5. Place paper in beaker flat edge down and let sit 10 - 15 minutes.
6. Take out paper and, with your pencil, follow the water line across to mark the boundary between wet and dry. This is your finish line.
7. With your pencil, circle each pigment and label. (i.e. **b** for blue)
8. Measure each of the 3 primary colors in cm from the starting line to where the pigment ended. Record in Table 1.

Data :

Table 1 - Observations of pigments (half page DRAW IN NOTEBOOK AND RECORD RESULTS)

Color	Distance Pigment cm	Distance Water Traveled cm	R _f Value = Pigment/Water
Color #1_____			
Color #2_____			
Color #3_____			

Analysis/Results:

1. Which color had the highest R_f value?
2. Rank the colors from highest to lowest.
3. Compare your results with the class. What were their R_f values? Do you notice any trends? Explain.
4. Draw a picture of your chromatography paper.

Conclusion:

- 1.) 2-3 sentences on what you learned. Include example and reference your results
- 2.) How could this be used in forensic investigation?

SUBMIT TO EBACKPACK WHEN FINISHED.