

Title: Plant Pigments

Purpose:

- to learn paper chromatography methods
- to separate ink pigments
- to separate plant pigments



Materials

- markers
- plant leaves
- filter paper
- metric ruler
- plastic tape
- pencils
- beaker or plastic cup
- coin
- water
- rubbing alcohol
- acetone

Procedure A: *Separation of Pigments in Markers*

1. Draw a line with marker 2 cm from bottom of filter paper strip (see diagram above).
2. Tape unmarked end of filter paper to pencil so that strip hangs down when pencil is held horizontally.
3. Pour water into a beaker or plastic cup to a depth of 1 cm
4. Suspend the pencil on the rim of the cup so that the tip of the filter paper touches the water but the marker line is above the water.
5. Repeat setup with rubbing alcohol and acetone
6. Repeat with different types/colors of markers as time permits.
7. Observe for 10—15 minutes.
8. Remove strips, let dry, and tape in lab NB.

Procedure B: *Separation of Pigments in Plant Leaves*

1. Draw a line with A PENCIL 2 cm from bottom of filter paper strip (see diagram above).
2. Place leaf across line and rub with THIN EDGE of coin to get a pigment line at the same place as the pencil line.
3. Do this with several different leaves (record type of leaf!)
4. Repeat setup as in procedure A above
5. Observe for 10—15 minutes.
6. Remove strips, let dry, and tape in lab NB.

Results: *Sample data charts below.*

Discussion: Answer the following analysis questions

1. Summarize what you did.
2. Describe what happened to the pigment lines.
(Provide supporting details from your results!)
3. Did the results differ in water, rubbing alcohol, and acetone?
(Provide supporting details from your results!)
4. Did the results differ for different types/colors of markers?
(Provide supporting details from your results!)
5. Did the results differ for different plant leaves?
(Provide supporting details from your results!)
6. Explain how this procedure could be used to identify an unknown type of ink and/or plants.

Conclusion: One statement about marker pigments and one about plant pigments

Reflection: Personal statement about the lab. Should be about 3~5 sentences!

Data Table A: Separation of Pigments in Markers

Marker Color and Type	Water	Rubbing Alcohol	Acetone	Samples

Data Table B: Separation of Pigments in Plant Leaves

Plant Leaf Type	Water	Rubbing Alcohol	Acetone	Samples