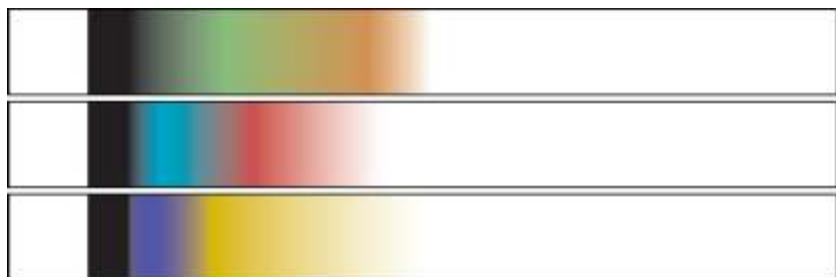


# Forensic Science Chemistry At-Home Activities for Students



## Paper Chromatography

Each marker has unique colors made by mixing inks together. Basic black ink contains the largest combination of colors. In this exercise you'll uncover the different colors hiding inside black markers. You'll be able to tell differences between multiple different black markers which you can't see with only your eyes.

## Supplies

- Paper towels cut up in 1" x 2" test strips
- Three or more different brands of water-soluble (washable) black markers
- Bowl of water as your solvent

## Directions

1. Using one marker, draw a line across one paper towel test strip, about a half inch from the bottom of the strip.
2. Repeat with other markers on the rest of the test strips with the different inks.
3. Dip the bottom of the first test strip in water—almost to the mark but not touching—and set it aside.
4. Repeat on all the other test strips.
5. The water will “creep up” through the towel and begin to dissolve the ink. (This is called “capillary action”.)
6. Watch as the water solvent breaks apart the different colors used to create the different black inks. Each color inside the black ink has a different size molecule. The smaller molecules move further up the test strip as they are carried by the water solvent. The larger, or heavier, color molecules drop out of the solution closer to the bottom of the test strip.
7. Compare the unique color “prints” created from each brand of marker. They could be very different and very colorful!

