

## FORENSIC CHEMISTRY:

# Coffee Filter Chromatography

### Materials:

Paper cup (16-oz. cups work well)  
Coffee filters  
Black marker  
Pencil  
Tape  
Rubbing alcohol (99% works best)  
Water  
Ruler

### Procedure:

- 1 Cut coffee filters into strips that are about  $1\frac{1}{2}$  inches wide and the same height as the paper cup.
- 2 About  $\frac{1}{4}$  inch from the bottom of the coffee filter strip, use a ruler to draw a horizontal line in pencil all the way across. Draw a dot in the center of the line using the black marker.
- 3 Mix equal portions of water and rubbing alcohol and put enough of the mixture in the cup so that it coats the bottom—it should be less than  $\frac{1}{4}$  inch deep.
- 4 Hold the pencil horizontally and tape the top of the coffee filter strip to the pencil. Position the pencil horizontally across the top of the paper cup so that the strip hangs into the liquid. Make sure that the very bottom of the filter paper is touching the liquid but that the liquid is still below the ink dot on the filter paper.
- 5 Wait 15–20 minutes for the ink to travel up the filter paper. How many colors do you see?

**FOR MORE FUN:** Try different black markers and pens around your house to see how many colors they separate into!

