



# hands-on activities

## Chemistry

### Separating Mixtures

#### Background Information

Crime labs use a process called chromatography to separate ink into the individual chemicals that are used to make it. Each pen manufacturer uses a unique blend of chemicals, and each of these chemicals has its own distinct color. In this activity, you'll use chromatography to analyze ink mixtures from a variety of pens.

#### What You Need

- 4 filter strips, each about 1 inch x 4 inches (2 cm x 10 cm), cut from coffee filters
- 4 clear plastic cups
- 4 Popsicle sticks
- 4 ink pens, each made by a different manufacturer
- scissors and tape
- water

#### What to Do

1. Attach each filter strip to a Popsicle stick so that it hangs in the center of the plastic cup. Note: Your strips should just touch the bottom of the cup.
2. Using a different pen for each strip, draw a .4-inch (1-cm) dot that's 2 inches (5 cm) from the bottom of the strip.
3. Pour approximately 1-1/4 inches (3 cm) of water in each cup.
4. Place the first strip into the water, making sure that the ink dot is above the water line, and rest the Popsicle stick on the rim of the cup.
5. Watch as the water rises up the filter paper — this process is called capillary action — and record your observations on the attached worksheet.
6. Remove the filter strip, setting it aside to dry.
7. Using a clean cup of water each time, repeat steps 4–6 using the remaining three strips of paper.



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### Testing for Glucose and Starch Worksheet

Name: \_\_\_\_\_

Filter Strip	Pen Manufacturer	Observations
Strip #1		
Strip#2		
Strip#3		
Strip #4		

What did you notice about the chromatography process, how the different ink mixtures separated into their pigments?

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