

# CURIOSITY AT HOME

## CRYPTIC CHROMATOGRAPHY

*Forensic science is using science to solve crimes. The ink from one black pen might look the same as another, but black ink is actually made out of different mixtures of other colors!*

### MATERIALS

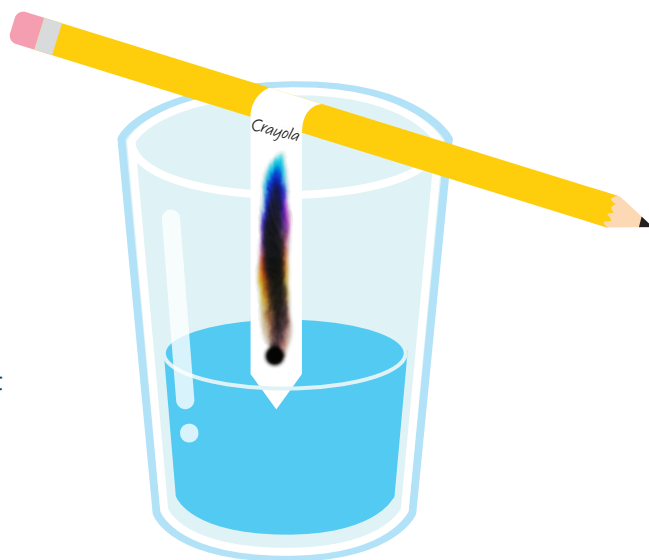
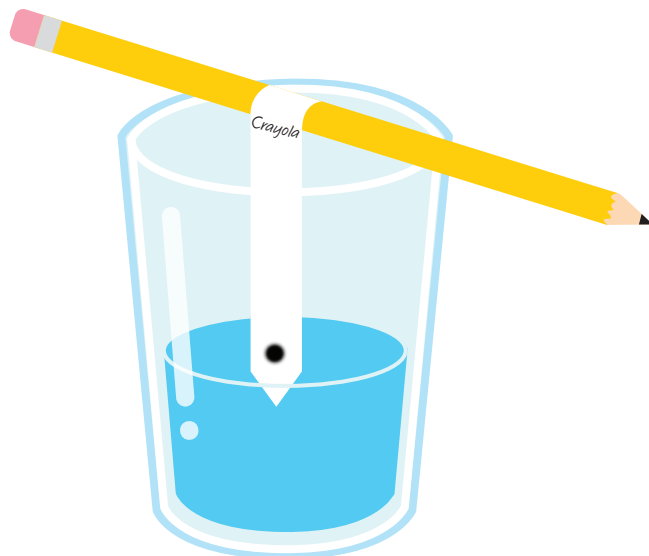
- 8.5x11 piece of paper, scrap paper is ok
- coffee filter
- scissors
- 4 pencils
- 3 different brands of water-soluble black markers (for example; Crayola, Mr. Scent and Sharpie)
- 3 small cups
- water
- tape
- ruler

### PROCEDURE

- Cut 3 strips from the coffee filter, each about 3" long and ½" wide. Cut each strip to form a point at one end.
- Choose the first marker you wish to test. Using that marker, make a dot about ½" from the pointed end of a strip. Write the brand of that marker in pencil near the non-pointed end of the strip.
- Lay a pencil across the top of a cup. Tape the non-pointed end of the strip to the pencil so that the strip hangs down into the cup. Slowly fill the cup with water until the pointed end just touches the water. Make sure the dot is still above the water.
- Notice that the water immediately starts to move up the strip, carrying the ink with it.
- Repeat this test with the other two markers. After 3–5 min. compare your results. How many different colors do you see in each ink sample? Are all the ink samples the same?

### TRY THIS

Ready to solve a mystery? Ask a friend to secretly choose one of your black markers and make a mark on a strip of filter paper. Can you figure out which marker they used?



Show us how you're being curious! Share your results with us.

PACIFIC  
SCIENCE  
CENTER

