



## Activity 12: Ink Analysis

**How is paper chromatography used to analyze ink samples?**

### Materials

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- various brands of pens (water-soluble): sharpies, Mr. Sketch, and Crayola markers
- tape
- pencil
- paper towel or coffee filters
- cup
- water

### Note to Parents

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- Prepare in advance by testing the pens that will be used to ensure they are water-soluble and will separate into distinct patterns. Crayola and Mr. Sketch markers all work in water.
- If you are testing ballpoint pens, rubbing alcohol must be used as the solvent.

**Safety Note: Be sure to wear eye protection if working with rubbing alcohol.**

- Paper towels will work, but the cone type coffee filters provide the best results.

### Procedure

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1. Cut strips of paper towel approximately 2 cm wide.
2. Use the pen you will be testing to make a line approximately 5 cm from the bottom of the strip.
3. Tape your paper towel strip to a pencil. If needed, roll up the paper towel strip on to the pencil so that when you place your strip into the cup, the bottom of the strip will just touch the bottom of the cup (see diagram).
4. Add enough water so that the bottom of the strip touches the water. Be sure that the line you marked on the paper strip does NOT touch the water.
5. Wait for the water to move up the paper strip. Remove the strip and allow it to dry. Tape the strip to your **Ink Analysis Table**.

6. Repeat steps one to five for any other pens you want to test.

Tape your chromatography strips to **Ink Analysis Table** below.



### Observations

#### Ink Analysis Table

Pen Type	Chromatography Strip