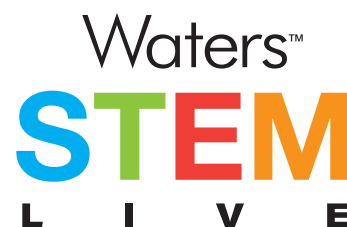
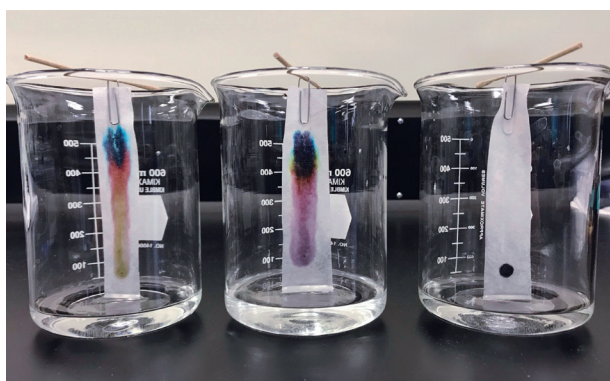


# Pen Peculiarities

## The Chromatography of black ink

### MATERIALS

- Filter paper (a coffee filter)
- Drinking straws
- 3–4 different brands of washable or wet erase black markers
- Paper clips
- Plastic cups
- Water
- Scissors



### INSTRUCTIONS

**Step 1:** Cut the filter paper into strips that are approximately 1 inch wide and 6 inches long.

**Step 2:** Using one marker per strip, put a pea sized dot of ink on one end of the filter paper, about half an inch from the bottom.

**Step 3:** Repeat for all the different markers.

**Step 4:** Attach a paper clip to the top of each strip of filter paper.

**Step 5:** Hang the paper clip on a straw. Place the straw across the top of a cup.

**Step 6:** Carefully add water to the cups. Make sure that the bottom of the paper is in the water, but that the spots DON'T touch the water.



### HOW IT WORKS

The different dyes in each marker move with water or rubbing alcohol in different ways. Some dyes stick to the paper or t-shirt and take a long time to come through. Others like to move with the liquid and come through quickly. This difference allows the colors to separate and we can see the individual colors that make up the original ink.

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