**Ink Analysis**

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The ink from the threatening note found next to the victim is on the filter paper you have received. In this test, you will compare the ink found at the crime scene to the ink from pens collected by the campus police from persons of interest. In order to compare the composition of each ink, you will use paper chromatography. Pens contain a variety of pigments which are made up of different compounds and can be separated using their solubility in isopropyl alcohol on filter paper. In the process below, you will visually inspect the different separation patterns for each pen and determine if there is a match to the ink from the threatening evidence.

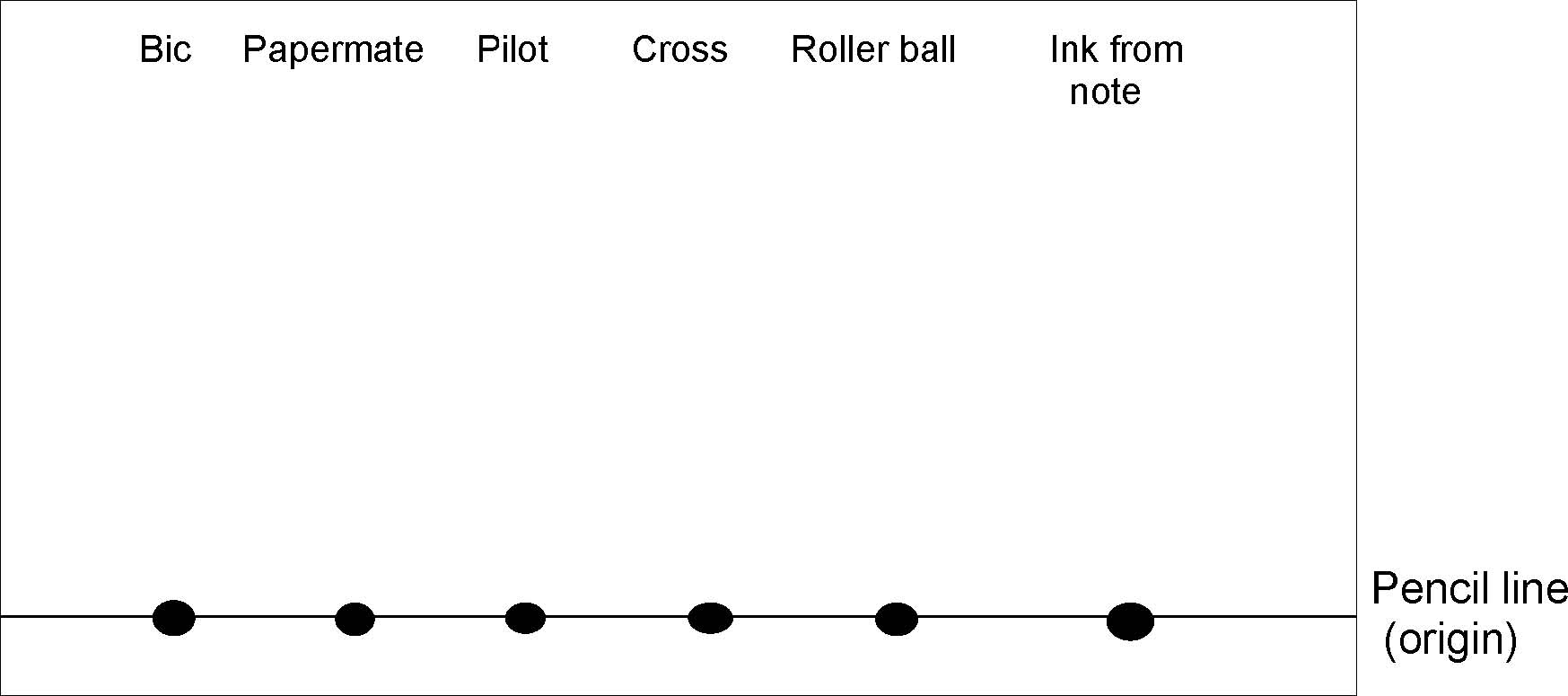
**Materials:**

Assorted pens   
Filter paper (cut to 10 cm x 20 cm)   
Beaker, 600   
Stapler   
Plastic wrap (parafilm)  
Isopropyl rubbing alcohol   
Pencil   
Rulers, 12 inch  
Safety glasses or goggles

**Procedure**

Obtain a sheet of filter paper. Hold the paper by the edges to avoid fingerprints which will interfere with the chromatography process.

Draw a pencil line on the chromatography paper about 1 cm from the bottom. This will be the origin.



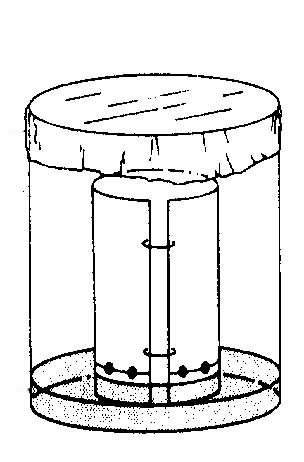
Pen in Suspect Suspect Suspect Suspect

Evidence Pen 1 Pen 2 Pen 3 Pen 4

Using the test pens available, place a small spot of ink on the pencil line. Directly above each spot, label the paper, in pencil, with the name or identification of the pen used.

Roll the paper into a cylinder, butt the ends together, but do not overlap them, and staple the paper together.

Add about 25 mL of isopropyl alcohol to the 600 mL beaker. Place the chromatography paper into the beaker. Cover the beaker with plastic wrap. (See Figure I-2)

Allow the beaker and chromatography paper to sit for up to 30 minutes for the inks to separate. Do not disturb the beaker during this time.

When the inks have separated sufficiently or the ink smears have moved approximately 2/3 of the way up the paper, remove the chromatography paper from the beaker. Open it flat and place it on a paper towel to dry.