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| **Investigative Crime Unit Laboratory Protocols** |
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| **Chromatography Test**  **Step 1.** Take ink sample on chromatography paper from the evidence packet.  **Step 2.** Using the 5 pens from the crime suspects, dot each of the pens along the start line, to the right of the sample. Make sure you record the order of the pens.  **Step 3.** Pour 25 ml of 70% isopropyl alcohol into a 400 ml beaker.  **Step 4.** Place chromatography paper upright in beaker and fold top over a popsicle stick. Make sure that the ink dots are not submerged in the solvent.  **Step 5.** Wait approximately 20 minutes for the chromatographs to develop.  **Step 6.** Compare the ink sample from the crime scene to the ink samples from the suspect’s pens. |
| **Melting Point Test**  **Step 1.** Plug in hot plate and turn on high.  **Step 2.** Place sample of white substance on a glass slide.  **Step 3.** Place slide on the hot plate.  **Step 4.** Record the temperature when the sample first begins to melt (if the sample melts) using a thermometer. Do NOT put the thermometer in the powder. |
| **Solubility Test**  **Step 1.** Make a solution with 5 ml **DI water** and 2 scoops of the white substance. Use a 100 ml beaker to make your solution.  **Step 2.** Stir the solution.  **Step 3.** Record whether the sample dissolves, settles to the bottom, or coats the top. |
| **Flame Test - KEEP ALCOHOL FAR AWAY FROM THE FLAME!!!!**  **Step 1.** Practice creating sparks BEFORE turning on the gas.  **Step 2.** Light the Bunsen burner.  **Step 3.** Dip a wet flame test stick into the unknown solid.  **Step 4.** Place the stick over the flame.  **Step 5.** Record the color of the flame. Not every unknown will produce a color change. |
| **Conductivity Test**  **Step 1.** Submerge the copper wires of the conductivity meter in the remainder of the concentrated solution.  **Step 2.** Record whether the solution conducts electricity.   * Red light = low conductivity * Red and green light = high conductivity * No lights = no conductivity |