Crime Busters

Description:
Participants use tests to identify unknown powders, match fingerprint and use paper chromatography to identify a note found at a crime scene. Bring goggles if possible. NOTES ARE NOT ALLOWED.

Number of Participants: 2  Approximate Time: 60 minutes

Competition:
1. The powders used will come from the following list: salt, granulated sugar (not cane), flour, salt, cornstarch, baking soda, limestone, sand and Gypsum (this will be provided to schools shortly).

2. Each team will be given up to 12 vials, up to 4 containing mixtures (50/50 ratio) of two substances. Teams will be supplied with the following materials to aid in the identification of the powders: distilled water, vinegar, iodine solution (KI3), a magnifying glass, and several plastic cups. Students will be provided with a list of the possible powders and all chromatography supplies.

3. Touching, tasting, or feeling the substances are not allowed. Please emphasize this during your coaching sessions. Also students must wear goggles at all times.

4. Students will be given a set of fingerprints from several suspects. They will be asked to match the fingerprints found at the crime scene. They must be asked to identify a fingerprint type (3 main types only).

5. Students will be asked to make up to…two chromatogram from pens and use this to help identify the criminals. Chromatograms will be turned in with the test sheet. Pens used will be black felt tip or markers. Only water will be used for the chromatography test.

6. After all the evidence is collected the students will be asked to identify who committed the crime and what evidence implicates the criminal(s), what evidence implicates the other suspects and why the others can’t be the criminal.

Scoring:
The score will be based on the following formula: identification of powders- 50%, chromatography- 15%, fingerprints- 10%, and identification of the criminals- 25% (a written analysis). See additional materials attached including sample test and sample answer sheet. Gypsum is replacing Plaster of Paris due to inconsistent characteristics of the Plaster of Paris.