

Cowley College
Cowley Science Investigations (CSI) Competition
CSI Contest

Teams will identify the perpetrators of a crime or crimes by analyzing paper chromatography, DNA profiling, fingerprinting, shoe print comparison, and performing chemical tests on unknown solids found at the scene of a crime. Teams will be given 30 minutes to complete the tasks. Each team consisting of two members will have their own workstation. Each workstation has a set of seven unknown substances (including a maximum of 3 mixtures), a dropper bottle of iodine, a dropper bottle of 0.1 M HCl, a magnifying glass, a spot plate, pH paper, bottle of distilled water, and a magnet. Safety lab precautions will be enforced and safety goggles will be provided.

Qualitative Analysis: Teams will identify the unknown substances by performing chemical tests, solubility and pH tests, and identifying physical properties such as magnetism, color, odor, and crystalline shape.

The unknown substances can come from the following list.

Liquids

Rubbing Alcohol
Lemon Juice
Household Ammonia
Vinegar
Hydrogen Peroxide
Hand Soap

Metals

Aluminum
Iron
Zinc
Magnesium

Solids

Sodium Acetate
Yeast
Calcium Carbonate
Table Salt
Vitamin C
Table Sugar
Gypsum (Calcium Sulfate dihydrate)
Flour
Powdered Alka- Seltzer
Corn Starch
Baking Soda
Powdered Gelatin
Sand

Teams will be required to correctly identify the unknown substances, match fingerprints, shoe prints, DNA profiling, paper chromatography samples, and provide a written analysis of who committed the crime and how they came to that conclusion.

Scoring:

1. Safety goggles and procedures are followed (if not followed could lead to disqualification)
2. Number of correct responses (if tie at this point will use no.3)
3. Supporting Evidence in written analysis (if tie at this point will use no. 4)
4. The least amount of time required to complete the competition.

Prizes will be awarded.