SCIENCE 9

CHEMISTRY AND CRIME SCENE INVESTIGATION

A "murder" was reported at Oak Bay High School. Your CSI Team is assigned to investigate the scene, gather and analyze the evidence, and solve the mystery!

Whenever you have excluded the impossible, whatever remains, however improbable, must be the truth.

Sir Arthur Conan Doyle
Sherlock Holmes
"The Adventure of the Beryl Coronet"

A. Introduction

Crime Scene Investigation (CSI) is a very serious profession which requires a great deal of effort, many human resources, specialized skills, and which, by definition, involves human tragedy. While this scenario project is designed to be interesting, murder is a serious and tragic matter which cannot be taken lightly. This project will begin with an introduction by a crime scene professional: an Oak Bay Police Officer. He will 'set the stage', help you to understand the importance of this field of work, give some insight to the impact that a murder has on a community, and act as a specialist resource for us. At the end of the project, you will present your report and findings to him as well as to your science teachers.

B. Question: *What Happened?*

The scene of the crime is a small storage room on the third floor near the Science Labs. A ***Crimestoppers*** anonymous call reported that there were two dead bodies found there, and that one of them was murdered. Unfortunately, the crime scene was compromised – some unauthorized person removed the bodies and cleaned up some of the area before investigators could arrive. No weapon was found. No fingerprints were found. There was, however, enough evidence left behind (solids, liquids and gasses) to solve the mystery.

C. Hypothesis: ***A Murder Took Place***

If dead bodies were found in a room in close proximity to each other, then at least one of them was killed by the other.

D. Data and Observations: ***Gathering Evidence*****:**

1. Make detailed notes of the locations and arrangements of items behind police tape.
2. Make a crime-scene sketch of the area, labeling all items.
3. Per team: wearing gloves and using the equipment provided, gather one sample of each of the solids, liquids, and gasses of interest (3 solids; 2 liquids; 1 provided sample of gas), and label them carefully (the item, its location and team name). Take care not to disturb the scene any more than is necessary.

E. Analysis: ***Laboratory Tests:***

1. Flame test the crystals (Spectral Analysis) and record results.
2. Flame test the clear liquid (Spectral Analysis) and record results.
3. Conduct a conductivity test of solids and clear liquid and record results.
4. Record provided Lab results (on screen)
5. Use text, your Spectroscopy Lab results and Google searches to further clarify what these materials are.
6. Note: *additional materials may become available during the investigation.*

F. Evaluation and Synthesis: ***The "Murder" Mystery Hypothesis***

1. Identify each of the materials of interest as fully as possible.
2. Was the Hypothesis supported?
3. What is your team's best answer to the Question?

Your report will be assessed by your teachers and by a real crime scene professional - good luck to you and your team!