

e. Ask questions to determine the appropriate uses of chromatography and spectroscopy in evidence analysis. (Clarification statement: Addressing spectroscopy at an analytical chemistry level is not required.)

SFS3. Obtain, evaluate, and communicate information relating to biological evidence in forensic investigations.

- a. Ask questions to investigate types of toxins, poisons, and drugs and their effects on the body.
- b. Analyze and interpret data to investigate the effects of blood alcohol content on the body.
- c. Construct an explanation to distinguish the difference between human and animal blood.
- d. Plan and carry out an investigation to analyze the physics of bloodstain patterns.
- e. Plan and carry out an investigation involving DNA processing and analysis.

SFS4. Obtain, evaluate, and communicate information to analyze the role of impression evidence in order to make a physical match examination.

- a. Construct an explanation for utilizing the appropriate technique to lift and evaluate identifiable, latent, plastic and patent fingerprints. (Clarification statement: Classifying print and minutiae patterns are addressed in this element. Students should be able to explain why they are using a specific technique.)
- b. Analyze and interpret data regarding impression evidence. (Clarification statement: Impression evidence could include ballistics, tool marks, footwear, tire impressions, etc.).
- c. Construct an explanation to support the significance of impression evidence in an investigation.

SFS5. Obtain, evaluate, and communicate information to Medicolegal Death Investigations.

- a. Ask questions to identify various causes and mechanisms of death (blunt force trauma, heart attack, bleeding, etc.).
- b. Construct an argument based on evidence that pertains to the manner of death (natural, homicide, suicide, accidental, or undetermined).
- c. Use mathematics and computational thinking to explain post-mortem changes used to determine post-mortem interval (PMI): •Rigor mortis •Livor mortis •Algor mortis •Gastric contents (Clarification statement: Instruction should include the historical use of Algor Mortis as it is often not used by practicing forensic specialists.)
- d. Analyze and interpret entomological data to evaluate the role insects play in decomposition and determining PMI.
- e. Plan and carry out an investigation to analyze height, sex, age, and race to develop an anthropological profile of the victim and potential perpetrator.