

The Science of CSI

I. Every Class Needs a little Mystery...Mystery Boxes

- A. 5 minute mysteries
- B. Mystery tools
- C. Mystery people
- D. Mystery science
- E. Full blown crime scene investigation unit or class

II. What Content is There in the Science of Crime Solving?

A. Biology

- 1. Cell theory
- 2. Genetics and DNA
- 3. Human body systems
 - a. Circulatory system
 - b. Blood types and blood chemistry
 - c. Autopsy
 - d. Health and illness
- 4. Animals and habitats
 - a. Insects

B. Chemistry

- 1. Elements, compounds and mixtures
 - a. Analysis of ink (chromatography)
- 2. Compounds
 - a. Toxicology
 - b. Drugs and poisons
 - c. Polymers
- 3. Chemical reactions
 - a. Arson
- 4. Thermo-chemistry
 - a. Arson
 - b. Identification of unknown metals

C. Physics

- 1. Forces and motion
 - a. Accident investigation (velocity, acceleration, vectors)
- 2. Behavior of fluids
 - a. Blood spatter analysis
- 3. Light and Image formation
 - a. Forensic photography
- 4. Electrical circuits
 - a. Arson investigation

5. Thermodynamics
 - a. Arson
 - b. Metal identification
 - c. Temperature and heat
 - d. Structural forensics
6. Projectile motion
 - a. Ballistics

D. Writing

1. Reports
2. Memos
3. Letters

E. Reading

1. Technical material and reports
2. Courtroom transcripts
3. Articles
4. Mysteries

F. Mathematics

1. Percentages
2. Ratios
3. Geometry (angles, volume, area)
4. Simple algebra to trigonometry

G. Social studies

1. Criminology
2. Law
3. Evidence

H. Best practices (the “other” curriculum)

1. Persistence
2. Observation and analysis
3. Critical thinking
4. Arguing from evidence
5. Explanations with clarity

III. Sample Activities

A. Document analysis

1. Observational analysis (forgery)
2. Chromatography

B. Human body systems (a walk through a human heart)

1. Heart parts and blood flow