



## Detective Science 5-6 Syllabus

### Course Goals

#### 1 Crime Scene Investigation

Students learn essential techniques and qualities of a crime scene investigator through hands-on activities and intricate lessons.

#### 2 Problem-Solving

Students engage in daily activities requiring them to think critically and apply what they've learned to decipher mock crime scenes.

#### 3 Adaptability

Students utilize what little clues they're given about a mock crime scene to develop a well-rounded, rational judgment free from bias.

#### 4 Collaboration

Students work together frequently through various activities that apply key CSI concepts.

#### 5 Science

Students conceptually learn the underlying science behind major techniques used as a crime scene investigator.

#### 6 Differentiation

Students understand the differences between the show CSI and crime scene investigators in real life, as well as how they are unique from related careers.

### Course Topics

#### 1 Crime Scene Investigators: The Profession

Students gain an understanding for what it means to be a crime scene investigator and what unique role they play in the investigative process.

#### 2 The Crime Scene

Students learn how crime scene investigators employ a practical, step-wise approach to crime scenes, engaging in applicable activities to preserve their original nature.

#### 3 Fingerprinting

Students learn about the different classifications of fingerprint patterns and how crime scene investigators can apply such knowledge towards identifying potential suspects.

#### 4 Tool Impressions

Students observe impressions and learn how to preserve impressions, characterize and utilize tool marks, and differentiate between impressions.

#### 5 Chromatography

Students learn about how ink chromatography is used to analyze writing to help solve crimes.

## **6 Blood Stains and Spatters**

Students engage in interactive lessons and activities to understand how crime scene investigators utilize the analysis of blood stains and spatter patterns to solve crimes.

## **7 Chemical Tests**

Students investigate the differences between chemical and physical characteristics, as well as how chemical tests can be implemented to identify unknown substances seen in a crime scene.

## **8 Handwriting Analysis and Forgery Identification**

Students analyze the intricacies of unique handwriting styles and learn how to distinguish forgeries within a crime scene through hands-on activities.

## **9 Ballistics**

Students grasp the study of projectiles and analyze the effect of differing angles of projection, velocity, and identity of projectile on impact characteristics.

## **10 Presentation of Evidence**

Students gain a deeper understanding for how crime scene investigators present their collective findings to the justice system.

# **Course Schedule**

## **Day 1**

### **Introduction and Icebreaker**

Students introduce themselves to the class through a fun icebreaker.

### **Course Rules**

Students will interactively learn the class rules.

### **Definition of Crime Scene Investigator**

Students will ponder what they think being a crime scene investigator means, and how it differs from the show CSI as well as related careers (i.e. forensic scientists).

### **Course Objectives and Workbooks**

Students learn the main objectives for this course, receive their personal workbooks, and briefly are exposed to what they'll be working on for the next two weeks.

### **CSI Vocabulary Lesson**

Students will begin to get familiar with common vocabulary utilized by crime scene investigators in real life.

### **Activity: Introducing the Crime Scene**

Students walk through a simulated crime scene and identify potential trace evidence to identify the perpetrator of the crime.

### **Activity: Discussing the Crime Scene**

Students discuss how they assessed the crime scene and why certain procedures are used.

### **Activity: Reviewing CSI Vocabulary**

Students get to partake in interactive activities to gain a clearer understanding of the vocabulary described earlier in class.

### **CSI Movie Clip**

Students watch a sample of how CSI activities are presented in the popular media, then discuss the differences and similarities with real life.

## Day 2

### **Lesson: Introduction to the Crime Scene**

Students get an introduction to the specific manner in which professionals investigate crime scenes.

### **Activity - Walking Through a Crime Scene**

Students will gain practice employing proper protocol when navigating through a crime scene.

### **Discussion: Walking Through a Crime Scene**

The classroom engages in a thoughtful discussion regarding the perpetrator of the crime scene and differences having protocols make in conducting searches.

### **Activity: Mafia**

Students will engage in a fun game of Mafia.

### **Discussion: Qualities of a CSI**

Students engage in an interactive discussion regarding the qualities needed as a crime scene investigator.

### **Handwriting Analysis Lesson**

Students learn the importance of analyzing handwriting and identifying forgeries when identifying the perpetrator of a crime.

## Day 3

### **Fingerprinting Lesson, Pt. 1**

Students learn about the fundamentals of fingerprint identification and distinguishing unique characteristics and patterns.

### **Fingerprinting Lab: Classification**

Students practice classifying and identifying unique fingerprint patterns.

### **What's Your Fingerprint Pattern?**

Students get to identify distinguishing features and patterns of their own fingerprints.

### **Fingerprinting Lesson, Pt. 2**

Students learn about the different types of prints crime scene investigators encounter and how they lift different types of prints.

### **Activity: Dusting and Lifting Prints**

Students practice using magnetic fingerprinting powder to lift latent prints.

### **Plastic Prints**

Students learn about plastic prints and get to visualize its differences from other types of fingerprints.

### **Balloon Prints**

Students create enlarged impressions of their own fingerprints using balloons.

### **Who Dunn-It?**

Students utilize what they've learned about fingerprinting to find and accurately identify a fingerprint left by one of their classmates.

## Day 4

### **Altered Grades Lab**

Students interact with an engaging exercise testing their ability to recognize forgeries based off of handwriting analysis.

### **Lesson: Tool Impressions**

Students learn about the different types of tool impressions and how to properly characterize and identify sources of impressions.

**Activity: Tool Impressions**

Students utilize their knowledge of analyzing tool impressions to determine which tool made the markings on a piece of evidence.

**Lesson: Ink Chromatography**

Students learn how ink chromatography can be utilized as a test to identify unique inks when solving a crime.

**Activity: Ink Chromatography in Action**

Students use what they've learned about ink chromatography to identify the pen that was used in a ransom note.

**Day 5****Video: The Magic School Bus**

Students watch a Magic School Bus video introducing them to the human circulatory system and the bloodstream.

**Lesson: Blood Stains**

Students learn how blood stains and spatter patterns are analyzed by investigators to solve crimes.

**Activity: Blood Spatters Kit**

Students apply what they've learned about blood stains and spatters in an experiment to determine how blood spatter patterns can help investigators make sense of crime scenes.

**Day 6****Chemical Tests Lesson**

Students learn about the scientific basis for various chemical tests utilized for crime scene investigations.

**Chemical Analysis Lab Activity**

Students apply what they've learned about chemical and physical changes to analyze and identify unknown substances.

**Day 7****Lesson and Demonstration: Ballistics**

Students learn about the study of projectiles (ballistics) and its various applications to crime scene investigation.

**Velocity Demonstration**

Students will watch an interactive demonstration using a balloon and string to understand the importance of velocity in ballistics.

**Activity: Launch Angle Demonstration**

Students create simple slingshots to analyze the effect of launch angles on projectile distance.

**Impact Analysis Activity**

Students use their created slingshots to test the effect of different materials on terminal impact.

**Lesson: Foreign Surveillance**

Students will explore how foreign surveillance methods can be applied in crime scene investigation.

**Activity: Handwriting Forgery Contest**

Students utilize what they've learned so far in handwriting analysis and forgery to compete in a handwriting forgery contest amongst each other.

## Day 8

### **Lesson: Presenting Evidence to Court**

Students learn how crime scene investigators present analyzed evidence to the court system.

### **Solving Murder Mystery**

Students apply what they've learned throughout the course to analyze the evidence collected on the first day of the program.

### **Presenting Murder Mystery Findings**

Students practice presenting their findings from the murder mystery in a simulated court system.

### **CSI Movie Clip**

Students watch a sample of how CSI activities are presented in the popular media, then discuss the differences and similarities with real life.

## Day 9

### **Jeopardy Review**

Students utilize what they've learned throughout the course to compete against one another in a jeopardy trivia game.

### **Final Project, Part 1**

Students prepare for the final crime scene project that will be completed on the last day of class.

## Day 10

### **Final Project, Part 2**

Students continue preparing their final project that they began on the previous day.

### **Final Project, Part 3 and Cleanup**

Students present their final projects to students of other classes.

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