

Unit 1: The Crime Scene & Physical Evidence

Content Area: **Science**
Course(s): **Forensics**
Time Period: **1st Marking Period**
Length: **10 Weeks**
Status: **Published**

Unit Overview

Introduction to the history and development of forensic science. Observation skills and the factors that influence eyewitness accounts of events. Preserving and recording the crime scene. The significance and examination of the common types of physical evidence.

Transfer

Students will be able to independently use their learning to...

What kinds of long term, independent accomplishments are desired?

Relating observation skills to their use in forensic science.

Improving your own observation skills.

Summarizing Locard's exchange principle.

Describing how evidence is collected and processed from a crime scene.

Understanding the concept of chain of custody.

Understand the contribution of the forensic entomologist can make to an investigation.

Meaning

Understandings

Students will understand that...

-What specifically do you want students to understand?

-What inferences should they make/grasp/realize?

The history and development of forensic science.

What a full service crime lab contains.

The specialty services that are available to law enforcement officials.

The function of a forensic scientist.

The different types of physical evidence that is found at a crime scene.

How to preserve and record a crime scene.

Observation skills are essential to the reliability of eyewitness testimony.

The different types of trace evidence.

Identify the different types of personnel that are present at a crime scene.

Essential Questions

Students will keep considering...

What thought provoking questions will foster inquiry, meaning making and transfer?

What is the basic function of a forensic scientist?

What is a full service crime laboratory?

What special forensic services are available to law enforcement officials?

What is Locard's exchange principle?

What are the different types of physical evidence?

What is trace evidence?

Where does forensic science begin?

How can an entomologist assist in a crime scene investigation?

Why are observation skills important to forensic science?

Application of Knowledge and Skill

Students will know...

Students will know...

What facts and basic concepts should students know and be able to recall?

The major disciplines of forensic science.

The components of a typical comprehensive crime lab.

The specialized forensic services available to law enforcement personnel.

The steps taken to thoroughly process and record a crime scene.

Understand the concept of chain of custody.

The common types of physical evidence found at the crime scene.

The factors that influence eyewitness accounts of events.

Locard's exchange principle.

Identify the examples of trace evidence.

The techniques for collecting and packaging physical evidence.

Students will be skilled at...

Students will be skilled at...

What discrete skills and processes should students be able to use?

Relating observation skills to their use in forensic science.

Improving your own observation skills.

Summarizing Locard's exchange principle.

Describing how evidence is collected and processed from a crime scene.

Understanding the concept of chain of custody.

Understand the contribution of the forensic entomologist can make to an investigation.

Academic Vocabulary

expert witness, Locard's exchange principle, scientific method, algor mortis, autopsy, buccal swab, chain of custody, finished sketch, livor mortis, physical, evidence, rigor mortis, standard/reference sample, substrate control, crime-scene investigation, trace evidence, mineral, direct transfer, fiber, natural fiber, synthetic fiber, cortex, cuticle, medulla, keratin,

Learning Goal 1

Define forensic science and list the major disciplines it encompasses.

NGSS Science and Engineering Practices Standards

- 1: Asking questions and defining problems.
- 2: Developing and using models.
- 3: Planning and carrying out investigations.
- 4: Analyzing and interpreting data.
- 5: Using mathematics and computational thinking.
- 6: Constructing explanations and designing solutions.
- 7: Engaging in argument from evidence.
- 8: Obtaining, evaluating, and communicating information.

Proficiency Scale

- Define forensic science and list the major disciplines it encompasses.

Target 1

SWBAT recognize the major contributors to the development of forensic science.

Target 2

SWBAT describe the services of a typical comprehensive crime laboratory.

Target 3

SWBAT list the specialized forensic services that are available to law enforcement.

Learning Goal 2

One of the most important tools of the forensic investigator is the ability to observe, interpret and report observations clearly.

NGSS Science and Engineering Practices Standards

- 1: Asking questions and defining problems.
- 2: Developing and using models.
- 3: Planning and carrying out investigations.
- 4: Analyzing and interpreting data.
- 5: Using mathematics and computational thinking.
- 6: Constructing explanations and designing solutions.

7: Engaging in argument from evidence.

8: Obtaining, evaluating, and communicating information.

[Proficiency Scale](#)

Target 1

SWBAT define observation and describe examples of factors influencing eyewitness accounts of events.

Target 2

SWBAT relate observation skills to their use in forensic science and compare the reliability of eyewitness testimony to what actually happened.

Target 3

SWBAT explain the role and responsibilities of the expert witness.

Learning Goal 3

Students will be able to list the common types of physical evidence found at the crime scene.

NGSS Science and Engineering Practices Standards

1: Asking questions and defining problems.

- 2: Developing and using models.
- 3: Planning and carrying out investigations.
- 4: Analyzing and interpreting data.
- 5: Using mathematics and computational thinking.
- 6: Constructing explanations and designing solutions.
- 7: Engaging in argument from evidence.
- 8: Obtaining, evaluating, and communicating information.

[Proficiency Scale](#)

Target 1

SWBAT identify the methods of securing, searching and documenting a crime scene.

Target 2

SWBAT understand the concept of chain of custody and discuss the responsibilities of law enforcement officials present at the crime scene.

Target 3

SWBAT understand the contributions that anthropology, entomology and pathology make to forensic science.

Learning Goal 4

Students will be able to define physical evidence and identify the common types.

NGSS Science and Engineering Practices Standards

- 1: Asking questions and defining problems.
- 2: Developing and using models.
- 3: Planning and carrying out investigations.
- 4: Analyzing and interpreting data.
- 5: Using mathematics and computational thinking.
- 6: Constructing explanations and designing solutions.
- 7: Engaging in argument from evidence.
- 8: Obtaining, evaluating, and communicating information.

[Proficiency Scale](#)

Target 1

SWBAT identify the various parts of hair and distinguish between human and nonhuman animal hair.

Target 2

SWBAT describe principal characteristics of common fibers used in their identification.

Target 3

SWBAT list the characteristics of glass and provide examples of the different types of glass.

Target 4

SWBAT list the important forensic properties of metal and paint.

Target 5

SWBAT list the important forensic properties of pollen and soil.

Formative Assessment and Performance Opportunities

Oral question & answer discussion, in-class observation, written exercises, classwork & homework assignments, power point w/ notes, lab reports, projects, portfolios, quizzes and tests.

Summative Assessment

Unit assessment, project based assessments, lab reports, tests and quizzes.

Accommodations/Modifications

Specific to this unit, students will have access to modified definitions for technical vocabulary and content specific videos.

Ex. [Crime Scene Evidence: National Geographic](#)

All instruction, labs, activities, and assessments will be modified and enhanced to adhere to individual student's IEPs and 504s. Differentiated classroom management strategies will be utilized as to adhere to these students individual plans.

Unit Resources

- Textbook - Forensic Science: An Introduction – 2nd Edition
- supplemental textbook materials
- Internet resources
- teacher generated power points & notes and lab materials.

21st Century Life and Careers

CAEP.9.2.12.C.1	Review career goals and determine steps necessary for attainment.
CAEP.9.2.12.C.2	Modify Personalized Student Learning Plans to support declared career goals.
CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.

Interdisciplinary Connections

LA.RST.11-12.1	Accurately cite strong and thorough evidence from the text to support analysis of science and technical texts, attending to precise details for explanations or descriptions.
LA.RST.11-12.4	Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.
LA.WHST.11-12.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.