

The **Forensic Science CPU** engages students in an in-depth study of the principles, practices, uses, and skills involved in forensic science. They explore areas of forensic science such as forensic medicine, forensic odontology, forensic pathology, forensic chemistry and toxicology, forensic entomology and many other subfields. Activities cover areas such as DNA evidence and electrophoresis, blood typing, classifying fingerprints, and drug/chemical analysis.

- Define forensics.
- Explore the history of forensic science.
- Define and describe methods of collecting physical evidence.
- Make and use a druggist fold for preserving collected samples.
- Describe what careers you chose to shadow/research and explain how each career is significant to the field of forensic science.
- Discover the history of forensic science.
- Identify the importance of collecting evidence from a crime scene.
- Define and determine the uses of trace and transfer evidence.
- Demonstrate proper procedure when handling and utilizing a microscope.
- Use a microscope to examine various slides and compare hair samples.
- Explain how a microscope makes exact identification of trace and transfer evidence possible and determine what other methods a forensic scientist could use to identify such evidence.
- Identify different types of evidence.
- Explore how trace and transfer evidence is collected.
- Define forensic medicine.
- Discover autopsy procedures, pretest and post test care.
- Examine a death certificate and see what is included in this document.
- Consider some circumstances (cultural, religious, or ethical) in which a family may not wish to have an autopsy performed, even if the autopsy might be seen as necessary.
- Explore how forensic science helps solve crimes.
- Explore safety precautions and equipment used in the forensic science lab.
- Explain blood and study the various types of blood.
- Examine how blood and genetics play a role in solving mysterious crimes.
- Discuss how the identification of blood has affected the field of forensics and consider what sorts of evidence would be more heavily relied upon if blood identification didn't exist.
- Complete the simulated blood typing experiment.
- Define DNA and its components.
- Examine common sources of DNA.
- Consider why DNA has become an important type of evidence in criminal court cases.
- Discover the collecting and preserving process for DNA evidence.
- Consider some pros and cons to the idea of a database containing information on every US citizen's DNA by listing at least two examples of both positive and negative effects such a program might have.
- State the common uses of gel electrophoresis as it relates to forensics.
- Explain the process of electrophoresis.
- Complete the electrophoresis experiment.
- Consider how indisputable DNA evidence has become in modern court cases and explain whether or not this status is merited.
- Finish the electrophoresis experiment.
- Explore forensic odontology, including dental identification and bite marks.
- Examine forensic chemistry and toxicology and their history, objectives, and future.
- Discover the attributes of forensic serology.
- Utilize various sources to explore how blood stain patterns are analyzed.
- Consider what options a deceased person's survivors might have had prior to the ability to accurately detect and identify poisons in a body if they suspected the victim was poisoned.
- Complete the Crime Scene #3: Drug Bust procedures.
- Explore the roles required in forensic pathology.
- Examine cause, mechanism, and manner of death.
- Discover changes that occur to the body after death.
- Discuss positive and negative aspects of a court case when the testimony of one or more forensic pathologists offer differing scientific testimony.
- Define forensic psychology and psychiatry and describe a career in these fields.
- Determine how forensic psychology and psychiatry affect criminal proceedings.
- Explore the attributes of a career in forensic anthropology.
- Consider bone and other postmortem testing conducted by a forensic anthropologist.
- Explore mummies.
- Make some connections between forensic anthropology and other branches of forensic science and consider how these fields relate to each other and how findings from one supplement or aid findings from another in a particular case.
- Explore various types of forensic entomology.
- Discover the history of forensic entomology.
- Distinguish how forensic entomologists determine the time of death.
- Complete an entomology data form from an entomology case.
- Consider other environmental factors (other than bacterial, arthropodal, and weather interaction with dead flesh) that might also help forensic scientists determine certain facts about a body.
- Examine the technique and theory of fingerprinting.
- Explore the various layers of skin.
- Discover latent fingerprints.
- Complete a fingerprint investigation.
- Discuss how mistaken identity based on very similar fingerprints may change how fingerprint analysis is conducted when using computerized comparisons.
- Explore forgery and how the field of forensic science aids in preventing forgery.
- Discover how forensic science helps solve crimes of arson.
- Complete various forensic teaser questions and forensic investigations.
- Research careers.
- Discuss what other types of crimes (other than murder, forgery, and arson) forensic science might be able to help solve and list a few of these case types and then describe how forensics might be useful in investigating such cases.
- You will participate in a career shadowing activity the instructor has arranged or complete research on the makeup of DNA and how DNA fingerprinting is used in the field of forensic science.
- Describe how your shadowing opportunity went (or how your research is going).
- Select appropriate vocabulary terms based on the definitions provided.
- Test your comprehension of concepts gained during this course.
- State and explain your opinion of the Forensic Science CPU.