

# Science: Introduction to Forensics

UNIT/Weeks	Timeline/Topics	Essential Questions
3	<p><b><u>Introduction to Forensics</u></b></p> <ul style="list-style-type: none"> <li>• Introduction</li> </ul>	<ul style="list-style-type: none"> <li>• How has the development of Forensics Science over the years benefited the criminal law system?</li> <li>• What accounts for the recent rapid growth of Forensic Laboratories?</li> <li>• Why is it important to include specialized forensic services other than those of the crime laboratory?</li> </ul>
3	<p><b><u>The Crime Scene and Physical Evidence</u></b></p> <ul style="list-style-type: none"> <li>• Investigating the Crime Scene and Physical Evidence</li> </ul>	<ul style="list-style-type: none"> <li>• How does the physical evidence at the crime scene affect the investigation?</li> <li>• Why would investigators sketch the crime scene as well as take photographs?</li> <li>• Why is it not possible to apply a simple analytical scheme to all types of evidence?</li> <li>• Why is it necessary to consider the relevance of scientific evidence prior to it being introduced into a criminal case?</li> </ul>
4	<p><b><u>Properties of Matter: Glass Analysis</u></b></p> <ul style="list-style-type: none"> <li>• Properties of Matter and Glass Analysis</li> </ul>	<ul style="list-style-type: none"> <li>• How are the properties of different samples of glass important to a crime investigation?</li> <li>• How is the physical property of density related to the classification of glass samples?</li> <li>• Why is the collection and preservation of glass evidence critical to a crime investigation?</li> </ul>
4	<p><b><u>Forensic Serology</u></b></p> <ul style="list-style-type: none"> <li>• Investigating Blood and other Biological Evidence.</li> </ul>	<ul style="list-style-type: none"> <li>• How can blood typing support a criminal investigation?</li> <li>• How can genetics support to a criminal investigation?</li> <li>• How can a simple Punnett square identify a person of interest?</li> <li>• How are respiratory measurements used to predict the vitality of the human body?</li> <li>• How is the digestive system arranged to allow for ingestion, digestion and absorption of nutrients?</li> </ul>

		<ul style="list-style-type: none"> <li>• In what ways do nutrients affect the body?</li> <li>• How is normal metabolism maintained in the body?</li> </ul>
4	<p><b><u>Forensics and DNA</u></b></p> <ul style="list-style-type: none"> <li>• Forensics and DNA Fingerprinting</li> </ul>	<ul style="list-style-type: none"> <li>• How has the discovery of DNA changed the field of Forensic Science?</li> <li>• How does the concept of Base-Pairing relate to the structure of DNA?</li> <li>• Why is PCR critical to the science of Forensics?</li> <li>• How does Mitochondrial DNA support Forensic Scientists?</li> </ul>
4	<p><b><u>Bloodstain Pattern Analysis</u></b></p> <ul style="list-style-type: none"> <li>• Reconstructing a Crime Scene and Bloodstain Pattern Analysis</li> </ul>	<ul style="list-style-type: none"> <li>• What information can be obtained by analyzing bloodstain patterns?</li> <li>• How can the angle of impact be useful to a crime scene investigator?</li> <li>• How can the velocity of the impact be used by the investigator?</li> </ul>
4	<p><b><u>The Microscope: Hair and Fiber Analysis</u></b></p> <ul style="list-style-type: none"> <li>• Hair and Fiber Analysis</li> </ul>	<ul style="list-style-type: none"> <li>• What is the importance of proper collection of hair and fiber evidence?</li> <li>• What are the advantages and limitations of microscopy as it relates to the analysis of trace evidence?</li> <li>• What roles do natural and synthetic fibers play in criminal investigations?</li> </ul>
4	<p><b><u>Fire and Explosions</u></b></p> <ul style="list-style-type: none"> <li>• Forensic Investigations of Fire and Explosions</li> </ul>	<ul style="list-style-type: none"> <li>• Why is collecting and identifying trace residues critical during the investigation of fires and explosions?</li> <li>• What is the importance of close cooperation and communication between public and private entities during an investigation?</li> <li>• How can a background in physics and chemistry support an arson investigator?</li> </ul>
3	<p><b><u>Fingerprints</u></b></p> <ul style="list-style-type: none"> <li>• Fingerprint Detection and Analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Why have so many different methods of detecting and preserving</li> </ul>

		fingerprints been developed over the years?
3	<p><b><u>Careers in Forensic Science</u></b></p> <ul style="list-style-type: none"><li>• Careers in Forensic Science</li></ul>	<ul style="list-style-type: none"><li>• What are some required college courses needed to enter the field of Forensic Science?</li><li>• What are some of the major disciplines of Forensic Science?</li><li>• How can an individual's existing skills and interests be best applied to becoming a forensic scientist?</li></ul>