Fairfax Collegiate
2026 Summer Program
Forensic Science Course Syllabus
Rising Grades 7-9

Course Description

Solve crimes with science.

Explore fingerprinting, handwriting analysis, microscopy, chemical testing, blood typing, blood spatter analysis, tool impression matching, and ink chromatography.

Document crime scenes, test unknown substances, analyze evidence, and compare your findings to real forensic investigations.

Students in Forensic Science solve mysteries, examine evidence, and think like real investigators. They become more curious, detail-oriented, and excited to explore how science helps solve crimes. With hands-on labs and step-by-step investigations, students build confidence as they dive into the world of forensic science.

Each day brings a new challenge that strengthens students' understanding of biology, chemistry, and the scientific reasoning behind forensic investigation.

Families receive photos and videos capturing students as they investigate crime scenes, conduct lab tests, and complete their final forensic case. Students leave the course with sharper observation skills, stronger scientific thinking, and a deeper appreciation for how science brings mysteries to light.

Learning Objectives

Course Goals	**Experience Forensic Science:** Students participate in authentic forensic lab activities, giving them an opportunity to role play and discover what forensic science entails. **Learn Crime Scene Analysis:** Students learn about and conduct the crime scene analysis and laboratory techniques used by forensic scientists. **Understand Scientific Basis of Forensics:** Students understand the biological and chemical concepts behind the methods used in crime scene investigation.
Course	**Forensic Concepts:** Students understand what a career in forensics entails and the science that

Topics	goes into the field. **Crime Scene Investigation:** Students learn how crime scene investigators employ a practical approach to crime scenes, moving step by step to preserve the original scene. **Fingerprinting:** Students differentiate classifications of fingerprint patterns and how crime scene investigators use these to identify suspects. **Microscopes:** Students learn how to properly use microscopes to study evidence from a crime scene. **Blood Types:** Students understand the different blood types, how blood type is determined, and its usefulness in forensic analysis. **Blood Stain Analysis:** Students complete activities to understand how investigators analyze blood stains and splatter patterns to solve crimes. **Handwriting Analysis:** Students analyze what makes unique handwriting styles different and learn how to distinguish forgeries at a crime scene. **Tool Impression Analysis:** Students observe impressions and learn how to preserve them, identify and utilize tool marks, and differentiate the impressions. **Chromatography:** Students understand how ink chromatography is used to analyze writing samples and help solve crimes. **Evidence and the Justice System:** Students gain a deeper understanding of how crime scene investigators present their findings to the justice system.

Course Schedule

Class Meeting 1	**Activity: Introducing the Crime Scene:** Students discover a sample crime scene that will be used for the day's forensic science activity. **Introduction and Icebreaker:** Students get to know their instructor and classmates. **Introduction of Class Rules:** Students are familiarized with the Fairfax Collegiate Summer Program rules and the rules of this course. **Definition of Forensic Science:** Students learn the meaning of "forensic science" and the differences between police officers, crime scene investigators, and forensic scientists. **Course Objectives and Workbook:** Students learn about the course's objectives, receive their workbooks for the course, and discuss what they'll be covering over the next ten days. **Basics of Forensic Science:** Students learn the basic principles and techniques of forensic investigation and crime scene documentation. **Activity: Documenting the Crime Scene:** Students investigate the simulated crime scene revealed at the beginning of the class and search for evidence. **Activity: Discussing the Crime Scene:** Students discuss how they assessed the crime scene and

	why certain procedures are used. **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.
Class Meeting 2	**Warm-up: Fingerprinting:** Students get an introduction to the use of fingerprinting as a means of identification. **Fingerprinting Lesson, Part 1:** Students learn about the patterns and characteristics of fingerprints used for identification. **Fingerprinting Lab: Classification:** Students practice fingerprint identification and classification of print features. **Finding Our Own Fingerprint Patterns:** Students fingerprint themselves and study and classify the distinguishing features of their prints. **Fingerprinting Lesson, Part 2:** Students learn about different types of fingerprints and the method they'll use to lift prints in their next activity. **Dusting and Lifting Prints:** Students learn how to use fingerprinting dust and other tools to lift and preserve fingerprints. **Plastic Prints:** Students learn about plastic prints and what distinguishes them from other types of fingerprint. **Balloon Prints:** Students produce enlargeable impressions of their own fingerprints **Who Left the Fingerprint?:** Students use what they've learned about fingerprinting to find and identify a fingerprint left by one of their classmates.
Class Meeting 3	**Warm-up: ESDA:** Students learn about the use of electrostatic detection apparatus (ESDA) to detect imprints of writing on paper. **Handwriting Analysis Lesson, Part 1:** Students are introduced to the basics of handwriting analysis and it's use in court. **Individual Variation Activity:** Students analyze their own handwriting samples and those of their classmates to observe the variation that occurs in a person's handwriting style. **Handwriting Characteristics Lab:** Students learn the 12 basic characteristics that forensic scientists use to analyze handwriting and apply this analysis to their own handwriting. **Handwriting Analysis Lesson, Part 2:** Students learn how forensic scientists identify different paper types and inks and detect forgeries. **Altered Grades Lab:** Students use what they've learned about handwriting analysis to find altered grades on a report card. **Handwriting Forgery Lab:** Students apply what they've learned about handwriting analysis to detect forgeries. **Class Debate--Handwriting Analysis:** Students have a class debate on the merits and drawbacks of using handwriting analysis as admissible evidence in court.

Class Meeting 4	**Cell Biology Lesson:** Students are introduced to microscope technology with a brief lesson on how microscopes let us explore cell biology. **Microscope Lesson:** Students learn about the functioning, uses, and different types of microscopes, as well as the parts of the microscopes they'll be using. **Introduction to Microscopes Activity:** Students use microscopes to examine objects at high magnification and learn the skills and terminology associated with them. **Forensic Microscope Activity:** Students use the skills they've learned in microscope use and forensic analysis to identify a suspect.
Class Meeting 5	**Chemical Tests Lesson:** Students learn about the scientific basis for chemical forensics. **Chemical Analysis Lab Activity:** Students use chemical forensic techniques to analyze unknown substances, and learn about chemical and physical changes. **Movie: Sherlock Holmes and the Speckled Band:** Students watch a video demonstrating the application of chemical forensic analysis
Class Meeting 6	**Video: The Magic School Bus:** Students watch a Magic School Bus video introducing them to the human circulatory system and the bloodstream. **Blood Types Lesson:** Students learn about the immune system and blood types and do a lab activity to demonstrate blood type compatibility. **Activity: Blood Type Compatibility:** Students carry out an experiment to determine which blood types are compatible and incompatible with each other. **Activity: Blood Typing Kit:** Students use simulated blood samples for a laboratory activity in which blood types are identified.
Class Meeting 7	**Blood Stains Lesson:** Students learn about how forensic scientists use analysis of blood stains and spatter patterns to solve crimes. **Activity: Blood Spatters Kit:** Students use simulated blood in an experiment to determine how blood drop/spatter patterns can help forensic scientists investigate crime scenes.
Class Meeting 8	**Tool Impressions Lesson:** Students learn about how forensic scientists analyze and interpret tool impressions to help solve crimes. **Activity: Tool Impressions:** Students apply what they've learned about analyzing tool impressions to determine which tool created the markings on a piece of evidence. **Ink Chromatography Lesson:** Students learn about how ink chromatography is used to analyze writing to help solve crimes. **Ink Chromatography Lab:** Students use ink chromatography to identify the pen that was used to write a ransom note.
Class Meeting 9	**Jeopardy Review:** Students compete in a jeopardy trivia game using what they've learned over the past two weeks. The winning team will get to pick their crime scene location for the final

	project. **Final Project, Part 1:** Students prepare for the final crime scene project that will be completed on the last day of class.
Class Meeting 10	**Final Project, Part 2:** Students continue the final project they began on the previous day. **Final Project, Part 3:** Students complete the last phase of their final activity and try to identify the culprits from their crime scenes. **Careers in Forensics:** Students learn about the possibilities for different careers in forensic science.