Wyoming Department of Education Required Virtual Education Course Syllabus

Niobrara County School District # 1

Program Name	Wyoming Virtual Academy	Content Area	SC
Course ID	D-SCI-030V1-K	Grade Level	9-12
Course Name	Forensic Science	# of Credits	0.5
SCED Code	03201E0.5012	Curriculum Type	K12 Inc

COURSE DESCRIPTION

This course surveys key topics in forensic science, including the application of the scientific process to forensic analysis, procedures and principles of crime scene investigation, physical and trace evidence, and the law and courtroom procedures from the perspective of the forensic scientist. Through online lessons, virtual and hands-on labs, and analysis of fictional crime scenarios, students learn about forensic tools, technical resources, forming and testing hypotheses, proper data collection, and responsible conclusions.

WYOMING CONTENT AND PERFORMANCE STANDARDS

STANDARD#	BENCHMARK (Standard/Indicator) Use the Standards and Benchmarks as Spreadsheets
HS-LS1-6	Construct explanations and revise, as needed, based on evidence for: 1) how carbon, hydrogen, and oxygen may combine with other elements to form amino acids and/or other large carbon-based molecules, and 2) how other hydrocarbons may also combine to form large carbon-based molecules.
HS-LS1-7	Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of sugar molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.
HS-LS3-1	Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.
HS-ESS1-5	Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.
HS-ESS1-6	Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.
HS-PS1-5	Apply scientific principles and use evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.
HS-PS3-2	Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative position of particles (objects).
HS-ETS1-1	Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
HS-ETS1-3	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.
HS-ETS1-5	Evaluate the validity and reliability of claims in a variety of materials.

SCOPE AND SEQUENCE		
UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
Unit 1: Scientific Principles of Crime Investigation Lesson 2: Forensic Science Theory		Identify the role and importance of forensic science, and give examples of how forensic science is in the service of law. Compare and contrast forensics, criminalistics, and forensic science. Describe the scope of forensic science in modern society, including the roles of local, state, and national crime laboratories and forensic science organizations. Describe the scientific processes used in forensic science and the role of the scientific method in forensic procedures. Describe the duties of forensic science personnel, including medical examiners, crime scene investigators, and forensic anthropologis
Unit 1: Scientific Principles of Crime Investigation Lesson 3: Forensic Science History		Describe the origins and history of forensic science, including technological innovations and their effect on solving crimes. Identify and describe the contributions of major innovators in forensic science. Explain and give examples of Locard's exchange principle and its application to understanding the nature and details of a crime. Explain the role and importance of evidence in the law and expert witness testimony. Explain the importance of legal cases and precedents, including Frye and Daubert cases.

Unit 1: Scientific Principles of Crime Investigation Lesson 4: Crime Scene		List and explain the sequential steps required in the analysis of a crime scene from the arrival of the first officer (including the collecting and packaging of evidence). Describe the role of each person at a crime scene, including the tools each uses. Explain the concept of "chain of custody" and the procedures required to submit evidence to a crime laboratory. Define crime scene and search warrant, and explain the constraints placed on investigators by Mincey v. Arizona and Michigan v. Tyler.
Unit 1: Scientific Principles of Crime Investigation Lesson 5: Laboratory: Crime Scene Sketch 1	HS-ETS1-5	Describe the importance of accurate notes and sketches, and the characteristics that make each valuable when documenting or reconstructing a crime scene. Compare the documentation of a crime scene to the scientific procedures (such as data collection and data analysis). Develop notes about a possible crime scene. Develop a crime scene sketch.
Unit 1: Scientific Principles of Crime Investigation Lesson 6: Laboratory: Crime Scene Sketch 2	HS-ETS1-5	Describe the importance of accurate notes and sketches, and the characteristics that make each valuable when documenting or reconstructing a crime scene. Develop notes about a possible crime scene. Develop a crime scene sketch. Compare the documentation of a crime scene to the scientific procedures (such as data collection and data analysis).
Unit 1: Scientific Principles of Crime Investigation Lesson 7: Crime Scene Personnel		Distinguish between the roles of detectives, crime scene investigators, and forensic scientists in investigating a crime. Identify the education, training, and job requirements of every position related to crime scene investigations. Explain the concept of "duty to preserve" and its role in crime scene investigation.

Unit 1: Scientific Principles of Crime Investigation Lesson 8: Laboratory: Measurement and Significant Figures 1		Identify the importance of accurate measurement and significant figures to crime scene evidence. Distinguish between precision and accuracy. Distinguish between base units and derived units. Measure length, mass, and volume using metric units.
Unit 1: Scientific Principles of Crime Investigation Lesson 9: Laboratory: Measurement and Significant Figures 2	HS-ETS1-5	Identify the importance of accurate measurement and significant figures to crime scene evidence. Distinguish between precision and accuracy. Distinguish between base units and derived units. Measure length, mass, and volume using metric units.
Unit 1: Scientific Principles of Crime Investigation Lesson 10: Crime Scene Photography		Describe the role of the crime scene photographer, and explain how the photographer supports other crime scene personnel. Compare and contrast crime scene photographs. Identify and evaluate equipment used to produce accurate crime scene photographs. Explain the technical requirements of common equipment used to photograph crime scenes. Identify the education, training, and job requirements of a crime scene photographer.
Unit 1: Scientific Principles of Crime Investigation Lesson 11: Your Choice		
Unit 1: Science of the Environment Lesson 12: Unit Test	HS-ETS1-5	

Unit 2: Evidence Lesson 1: Types of Evidence		Compare and contrast gross and trace physical evidence, and describe the importance of each when interpreting a crime scene. Describe different kinds of physical evidence, and explain how specific examples can be used to solve a crime. Explain the roles of identification, comparison, and individualization when analyzing data.
Unit 2: Evidence Lesson 2: Death and Decomposition		Describe the role of a forensic examiner at a possible homicide scene and the steps the examiner takes when dealing with a dead body. Define death, and describe how death was determined historically and in modern times. Describe and identify the changes that occur after death and the sequence of events that a corpse undergoes. Describe and identify the signs of rigor mortis, livor mortis, and algor mortis, and explain how each yields information about death and a suspected homicide. Identify and describe types of data that can be used to determine the time of death.
Unit 2: Evidence Lesson 3: Autopsy		Compare and contrast the current and historical roles of a coroner, medical examiner, and forensic pathologist, and identify the required medical background of each position. Describe how and why an autopsy is done, identify the legal reasons for performing an autopsy, and identify when an autopsy is not necessary. Identify the steps of an autopsy, including the notes taken during the autopsy. Describe the information stated on the medical report of an autopsy and the use of this information in resolving a possible crime.

Unit 2: Evidence Lesson 4: Laboratory: Human Digestion Actions 1		Describe and identify the signs of rigor mortis, livor mortis, and algor mortis, and explain how each yields information about death and a suspected homicide. Identify and describe types of data that can be used to determine the time of death. Describe the process of digestion in a human, citing examples from anatomy. Know the individual functions and sites of secretion of digestive enzymes. Apply the results of a laboratory examination to solving a specific crime scenario.
Unit 2: Evidence Lesson 5: Forensic Entomology		Explain how the presence of overlapping life cycle stages of the blowfly is valuable in determining the time of death. Describe the role, education, and training of a forensic entomologist. Interpret a diagram of the life cycle of a blowfly, including the timing of each of the stages and the role of that information in determining the time of death. Explain how information on a body farm can be used to solve crime, focusing on information from insects and other invertebrates.
Unit 2: Evidence Lesson 6: Laboratory: Human Digestion Actions 2	HS-LS1-7, HS-PS1-5	Describe the process of digestion in a human, citing examples from anatomy. Know the individual functions and sites of secretion of digestive enzymes.
Unit 2: Evidence Lesson 7: Your Choice		

Unit 2: Evidence Lesson 8: Forensic Anthropology		Identify and describe the skeletal evidence that will indicate the age, possible race, and sex of a body. Describe and give examples to explain how the work of facial reconstruction can be vital to determining the identity of a individual whose skeletal remains have been discovered. Describe the role, education, and training of a forensic anthropologist. Explain why the discovery of any skeleton in any unusual circumstances requires examination by a forensic anthropologist.
Unit 2: Evidence Lesson 9: Forensic Odontology		Describe the role, education, and training of a forensic odontologist. Explain why the discovery of any skull in any unusual circumstances requires examination by a forensic odontologist. Describe the dental evidence and procedures that a forensic odontologist will use to determine the identity of an individual. Identify examples where examination of bite marks have been used solve crimes of violence, including homicides.
Unit 2: Evidence Lesson 10: Laboratory: Teeth 1	HS-LS3-1, HS-ETS1-5	Recover information from a simulated crime scene, and interpret this information based on an understanding of odontological data. Apply dental information to the identification of a simulated dead body. Apply dental information to interpret bite marks and match or eliminate possible suspects. Prepare a report similar to one that would be submitted as evidence by a forensic odontologist.

Unit 2: Evidence Lesson 11: Laboratory: Teeth 2	HS-LS3-1, HS-ETS1-5	Recover information from a simulated crime scene, and interpret this information based on an understanding of odontological data. Apply dental information to the identification of a simulated dead body. Apply dental information to interpret bite marks and match or eliminate possible suspects. Prepare a report similar to one that would be submitted as evidence by a forensic odontologist.
Unit 2: Evidence Lesson 12: Trauma and Blood Spatter		Define trauma and explain how trauma evidence can be used to resolve a possible crime. Describe how blood-spatter patterns are documented and the importance of accurate data collection of spatter patterns. Interpret blood-spatter patterns. Describe the probable sequence of events that occurred during a violent crime using information from blood-spatter patterns and trauma data.
Unit 2: Evidence Lesson 13: Ballistics		Differentiate between a bullet and shot, and describe rifling. Describe and interpret how ballistic patterns are documented in cases of both bullet and shot, and the importance of accurate data collection of such data. Describe data that can be collected in crimes in which guns are used, including cartridge and bullet classification, position and distance of the shooter, comparative bullet markings, and residue analysis.

		Describe the role of ballistic search databases, their history, and the role of role of NIBIN (National Integrated Ballistic Information Network), summarize the NIBIN website; and cite examples of NIBIN's aid in solving gun crimes.
Unit 2: Evidence Lesson 14: Laboratory: Ballistics and Spatter 1	HS-LS3-1, HS-ETS1-5	Recover information from a simulated crime scene, and interpret this information based on an understanding of ballistic and blood-spatter data. Apply ballistic and blood-spatter evidence and information to the reconstruction of a simulated crime. Apply ballistic and blood-spatter information to interpret the validity of a suspect's account of a simulated incident. Collect data and answer questions about a fictional crime scene.
Unit 2: Evidence Lesson 15: Laboratory: Ballistics and Spatter 2	HS-LS3-1, HS-ETS1-5	Apply ballistic and blood-spatter evidence and information to the reconstruction of a simulated crime.
Unit 2: Evidence Lesson 16: Your Choice		
Unit 2: Evidence Lesson 17: Unit 2 Test	HS-LS3-1, HS-ETS1-5	
Unit 3: Trace Evidence 1 Lesson 1: Hair and Fibers		Identify or describe situations where trace evidence of hair and fibers are useful in solving crimes. Describe the characteristics of individual hairs, the difference between human and animal hairs, and the stages of growth of human hair. Explain the technology of comparing hairs and fibers. Identify the different classes and characteristics of fibers, including chemical characteristics and shape.

Unit 3: Trace Evidence 1 Lesson 2: Spores, Pollen,and Seeds		Describe the characteristics of pollen, spores, seeds, fruits, and other biological materials and their role in providing evidence during a crime investigation. Identify and describe situations where trace biological evidence of spores, seeds, pollen, and similar materials are useful in solving crimes. Explain how spores, pollen, and other similar material are examined.
Unit 3: Trace Evidence 1 Lesson 3: Laboratory: Investigating Biological Compounds 1	HS-LS3-1, HS-LS1-6, HS-ETS1-5,	Gather and analyze biochemical data that can be used to provide evidence in a crime situation. Explain various tests that can be used to detect the presence of certain macromolecules. Identify the presence or absence of macromolecules by experimenting with various chemical indicators.
Unit 3: Trace Evidence 1 Lesson 4: Laboratory: Investigating Biological Compounds 2	HS-LS3-1, HS-LS1-6, HS-ETS1-5	Gather and analyze biochemical data that can be used to provide evidence in a crime situation. Explain various tests that can be used to detect the presence of certain macromolecules. Identify the presence or absence of macromolecules by experimenting with various chemical indicators.
Unit 3: Trace Evidence 1 Lesson 5: Alcohol	HS-PS1-7	Relate the use of alcohol with the occurrence of crime, and describe the need and process of testing alcohol in the blood at crime scenes and driving incidents. Describe the physiology of alcohol in the human body. Identify the steps of a field sobriety test. Interpret a diagram, and describe the science and technology of a breath

		test to determine blood alcohol content.
Unit 3: Trace Evidence 1 Lesson 6:Organic Analysis	HS-PS1-7	Describe the chemistry of paint, and other organic substances and explain the importance of chemical analysis for resolving crimes. List the layers of paint found on a typical vehicle, and describe how forensic scientists use this information to prepare crime reports. Explain the steps in the proper collection and storage of paint and other organic materials found at a primary or secondary crime scene. Describe the role and technology of pyrolysis gas chromatography and other scientific tools in the analysis of paint and organic samples.
Unit 3: Trace Evidence 1 Lesson 7: DNA		Describe and give examples of the importance of DNA individualization and its role in modern forensic science. Describe the role of the polymerase chain reaction to the use of DNA evidence in possible crime situations. Describe short tandem repeats, and explain their use in DNA fingerprinting. Describe systems to compare short tandem repeat data, and explain the 13 repeat system used in the United States for tandem repeat comparison.
Unit 3: Trace Evidence 1 Lesson 8: Laboratory: DNA 1	HS-LS3-1, HS-ETS1-5	Interpret simple electrophoresis data used to distinguish the DNA of one individual from another.

		Process data from short tandem repeat analysis. Use DNA short tandem repeat data to search a database to link or refute an individual's presence at a crime scene.
Unit 3: Trace Evidence 1 Lesson 9: Laboratory: DNA 2	HS-LS3-1, HS-ETS1-5	Interpret simple electrophoresis data used to distinguish the DNA of one individual from another. Process data from short tandem repeat analysis. Use DNA short tandem repeat data to search a database to link or refute an individual's presence at a crime scene.
Unit 3: Trace Evidence 1 Lesson 10: Fingerprints		Describe the history of fingerprinting analysis and its historical acceptance in law. Identify the essential characteristics of a fingerprint, and describe the major types of fingerprints. Describe the use of national automated fingerprint identification systems and how local fingerprint experts are able to search for fingerprint matches from large databases. Describe methods of collecting fingerprint data at crime scenes, including processes for making latent prints clear and visible.
Unit 3: Trace Evidence 1 Lesson 11:Laboratory: Fingerprints 1	HS-LS3-1, HS-ETS1-5	Interpret fingerprint data from a fictional crime scene. Characterize fingerprints, and compare and contrast fingerprints from different individuals to resolve a crime. Search a database of fingerprint data to link or refute an individual's presence at a crime scene.
Unit 3: Trace Evidence 1 Lesson 12: Laboratory: Fingerprints 2	HS-LS3-1, HS-ETS1-5	Interpret fingerprint data from a fictional crime scene. Characterize fingerprints, and compare and contrast fingerprints from different individuals to resolve a crime. Search a database of fingerprint data to link or refute an individual's presence at a crime scene.
Unit 3: Trace Evidence 1 Lesson 13: Blood		List the major components of blood and the major blood types, and describe their use in

		solving crimes. Explain the science behind the testing of blood type. List and explain the various tests to determine the presence of blood at a possible crime scene, including tests to determine if the blood is human. Describe the proper collection, processing, and storage of blood samples from a crime scene.
Unit 3: Trace Evidence 1 Lesson 14: Laboratory: Blood	HS-LS3-1, HS-ETS1-5	Interpret blood data from a fictional crime scene. Describe proper techniques to locate blood residue at a crime scene. Determine if blood is from a human using blood data. Identify blood types, and compare and contrast blood types from different individuals to resolve a simulated crime.
Unit 3: Trace Evidence 1 Lesson 15: Your Choice		
Unit 3: Trace Evidence 1 Lesson 16: Unit 3 Test	HS-LS3-1, HS-ETS1-5	
Unit 4: Trace Evidence 2 Lesson 1: Crime Story		Share crime evidence information and the basis for conclusions with others. Critique the information collected and the hypotheses developed by other students, by applying scientific processes to crime analysis. Evaluate a conclusion about a possible crime based on scientific data. Analyze evidence collected from a possible crime scene by using scientific procedures.

Unit 4: Trace Evidence 2 Lesson 2: Tool Marks		Define toolmark, and describe the importance of toolmarks as evidence in certain types of crimes. Compare and contrast indented marks, striated marks, and cutting marks, and identify the types of tools that typically make each mark. Describe the techniques for collecting and documenting toolmark evidence, including the use of casts to permanently secure a toolmark as evidence. Explain how toolmarks are compared to the tools that possibly made the marks.
Unit 4: Trace Evidence 2 Lesson 3: Glass		
Unit 4: Trace Evidence 2 Lesson 4: Soil		
Unit 4: Trace Evidence 2 Lesson 5: Footwear and Tire Marks		Describe casting and photographic techniques for recording and preserving evidence of foot- and shoeprints, tire marks, and other impressions. Describe and explain the importance of electrostatic dust collection and techniques for obtaining evidence in mud or snow conditions. Describe the techniques to identify tire impressions and to link a tire impression to tires involved at a crime scene. Describe how tire skid marks are used as evidence of braking or accelerating in the reconstruction of the motion of a vehicle that may be associated with a crime. Compare and contrast patent, plastic, and latent impressions made by tires, shoes, and similar objects.
Unit 4: Trace Evidence 2 Lesson 6: Laboratory: Rocks and Minerals 1	HS-ESS1-5, HS-ESS1-6	Perform tests for hardness, color, streak, and special properties on mineral samples. Interpret the results of tests to identify several mineral samples.

		Apply the results of mineral analysis to solve a fictional crime scenario.
Unit 4:Trace Evidence 2 Lesson 7: Laboratory: Rocks and Minerals 2	HS-ESS1-5, HS-ESS1-6	
Unit 4: Trace Evidence 2 Lesson 8: Crime Story		Share crime evidence information and the basis for conclusions with others. Critique the information collected and the hypotheses developed by other students, by applying scientific processes to crime analysis. Evaluate a conclusion about a possible crime based on scientific data. Analyze evidence collected from a possible crime scene by using scientific procedures.
Unit 4: Trace Evidence 2 Lesson 9: Toxicology	HS-PS3-2	Describe the role, education, and training of a forensic toxicologist. Describe the techniques for collecting and preserving toxicological evidence both from crime scenes and from human bodies, including collecting evidence where drugging or drug use is suspected. Describe the technology used in thin-layer chromatography, gas chromatography, and immunoassay when determining the nature of a poison or toxic substance. Compare and contrast results of various tests to certify or negate the presence of dangerous substances in a body or at a crime scene. List and describe the classes of drugs, and describe the physiological effects of each.
Unit 4: Trace Evidence 2 Lesson 10: Resolving the Crime Story		Share crime evidence information and the basis for conclusions with others. Critique the information collected and the hypotheses developed by other students, by applying scientific processes to crime analysis. Evaluate a conclusion about a possible crime based on scientific data.

		Analyze evidence collected from a possible crime scene by using scientific procedures.
Unit 4: Trace Evidence 2 Lesson 11: Your Choice		
Unit 4: Trace Evidence 2 Lesson 12: Unit 4 Test	HS-ETS1-5, HS-PS3-2	
Unit 5: Forensics of Certain Crimes Lesson 1: Personal Injury Crimes		Define, compare, and contrast personal injury crimes, including assault, battery, and sexual crimes. Describe the procedures for interviewing a victim of a personal injury crime, and explain the importance of taking accurate data during the interview. Describe the procedures of a medical examination when a personal injury crime happens. Describe the role of a police sketch artist.
Unit 5: Forensics of Certain Crimes Lesson 2: Drug Crimes		List and describe the classes of drugs, and describe the physiological effects of each. Describe the laws and penalties related to drug use, including the schedules of the Controlled Substances Act. Describe the tests used for the identification of drugs and the science underlying the tests. Explain the concept of drug dependence, and describe its importance in the establishment and changes of drug laws.
Unit 5: Forensics of Certain Crimes Lesson 3: Gun Crimes		Explain the special considerations in law when guns are used in a crime. Describe the processes for serial number restoration. Describe the processes for identifying and tracing the ownership of a gun, and describe Internet databases of firearms and their use. Describe the major U.S. federal gun laws that have been enacted since 1934, describe the extent of gun ownership in the United States, and compare the differences in gun laws of the states.

Unit 5: Forensics of Certain Crimes Lesson 4: Computer Crimes		Describe crimes that involve the use of a computer and the types of digital crimes common in today's society. Describe the components of a computer, and explain how a hard drive stores data. Compare and contrast latent and visible data. Describe the techniques for preserving, restoring, and retrieving data from a computer.
Unit 5: Forensics of Certain Crimes Lesson 5: Your Choice		
Unit 5: Forensics of Certain Crimes Lesson 6:Financial Crimes		Describe financial crimes, including tax crimes, counterfeiting, bribery, and fraudulent bookkeeping. Describe the role, education, and training of a forensic financial auditor. Describe the essentials of bookkeeping, and explain how financial records can be altered to hide crime. Describe financial crimes related both to tax law and to the RICO (Racketeer Influenced and Corrupt Organizations) Act.
Unit 5: Forensics of Certain Crimes Lesson 7: Arson		Define arson, and describe scenarios in which arson should be suspected. Describe the process by which a fire is ignited and sustained, and explain the chemistry of fire. Describe the forensic procedures that are followed in cases of suspected arson. Explain how the location of the origin of a fire is determined. Describe the process for identification of accelerants and other fire-related and explosive materials.

Unit 5: Forensics of Certain Crimes Lesson 8: Laboratory: Arson Evidence 1	HS-ETS1-5	Recover information from a crime scene that involves the necessity for understanding arson and explosion data. Apply arson reconstruction techniques to the reconstruction of a fire-based crime. Distinguish biological characteristics of a fire victim vs. non-fire victim. Apply arson data to interpret the validity of a suspect's account of an incident.
Unit 5: Forensics of Certain Crimes Lesson 9: Laboratory: Arson Evidence 2	HS-ETS1-5	Recover information from a crime scene that involves the necessity for understanding arson and explosion data. Apply arson reconstruction techniques to the reconstruction of a fire-based crime. Distinguish biological characteristics of a fire victim vs. non-fire victim. Apply arson data to interpret the validity of a suspect's account of an incident.
Unit 5: Forensics of Certain Crimes Lesson 10: Robbery		Identify and explain the steps used to reconstruct robbery and theft in person or by the use of digital media. Describe the types of items that are commonly stolen and the sequence of events that happens to items and money after they are stolen. Describe, compare, and contrast the laws as they apply to thievery and the penalties for various types of robbery or theft. Describe the different types of property crimes, including robbery, burglary, and larceny.
Unit 5: Forensics of Certain Crimes Lesson 11: Fraud		Define fraud, and list examples of types of fraud. Describe, compare, and contrast health fraud, insurance fraud, and confidence game fraud. Define forgery, and list examples of types of forgery. List and describe the types of evidence used to document incidents of fraud and forgery.

Unit 5: Forensics of Certain Crimes Lesson 12: Document Analysis		Describe how a document such as a will or check can be altered, and explain how documents can be validated or rejected as authentic. Describe, compare, and contrast the kinds of notes and writing found at a crime scene. Describe the chemistry of paper, how papers are collected and analyzed, and how a burned or charred note can be reconstructed.
Unit 5: Forensics of Certain Crimes Lesson 13: Laboratory: Paper Chromatography 1	HS-ETS1-5	Apply the results of a paper chromatography procedure to solve a fictional crime. Describe the principle behind the technique of chromatography. Use paper chromatography to separate components of inks.
Unit 5: Forensics of Certain Crimes Lesson 14: Laboratory: Paper Chromatography 2	HS-ETS1-5	Apply the results of a paper chromatography procedure to solve a fictional crime. Describe the principle behind the technique of chromatography. Use paper chromatography to separate components of inks.
Unit 5: Forensics of Certain Crimes Lesson 15: Your Choice		Describe the role, education, and training of a forensic handwriting analyst, and describe how an analyst preserves evidence, collects samples, and interprets handwriting. Explain the uniqueness of handwriting, and describe how handwriting is variable and changes over time. Describe the basic techniques of handwriting analysis.
Unit 5: Forensics of Certain Crimes Lesson 16: Laboratory: Handwriting 1	HS-ETS1-5	Analyze handwriting from a fictional crime scene. Interpret TLC ink analysis to determine the authenticity of a document. Compare and contrast handwriting samples.
Unit 5: Forensics of Certain Crimes Lesson 17: Laboratory: Handwriting 2	HS-ETS1-5	Analyze handwriting from a fictional crime scene. Compare and contrast handwriting samples.

		Interpret TLC ink analysis to determine the authenticity of a document.
Unit 5: Forensics of Certain Crimes Lesson 18: Your Choice		
Unit 5: Forensics of Certain Crimes Lesson 19: Unit 5 Test	HS-ETS1-5	
Unit 6: Forensic Science Project Lesson 1: The Courtroom		Explain the concept of jurisdiction. Define trier of fact, and describe, compare, and contrast a jury trial and a bench trial. Describe the role and responsibilities of the members of a court. List and explain the significance of each step in a bench or jury trial. Describe the process of appeals in the United States.
Unit 6: Forensic Science Project Lesson 2: Expert Witness		Define expert witness, and explain the rule regarding the classification of a forensic scientist as an expert witness. Describe how rules of evidence affect expert witness testimony. Explain how expert testimony is based on accurate and organized data collection. Explain how the demeanor of an expert witness under questioning may affect the outcome of the trial.
Unit 6: Forensic Science Project Lesson 3: Planning Your Research Paper		Respond to a research paper. Choose a topic for a research paper. Make a list of questions about a research topic.
Unit 6: Forensic Science Project Lesson 4: Finding and Using Information		Use the library and the Internet for research. Evaluate research sources and conduct research. Evaluate Internet sources. Use index cards, create bibliography cards, and take notes. Create bibliography cards. Identify instances of plagiarism.

		Take notes on index cards. Understand plagiarism.
Unit 6: Forensic Science Project Lesson 5: Organizing Notes and Developing an Outline		Write a thesis statement. Determine a pattern of organization. Organize note cards. Make a formal outline. Create an outline for a research paper that includes a thesis statement, plans for introductory and supporting material, and a conclusion.
Unit 6: Forensic Science Project Lesson 6: Writing Your Paper		Draft and revise a research paper. Draft a research paper. Include citations within the body of the paper.
Unit 6: Forensic Science Project Lesson 7: Creating a Works Cited Page		Create a Works Cited page. Write a final draft of a research paper that includes properly cited resources both in text and on a Works Cited page.
Unit 6: Forensic Science Project Lesson 8: Revising and Proofreading Your Paper		Revise a research paper. Write a final draft of a research paper that includes properly cited resources both in text and on a Works Cited page. Proofread and polish a research paper. Create a final draft of a research paper.
Unit 6: Forensic Science Project Lesson 9: Your Choice		
Unit 6: Forensic Science Project Lesson 10: Research Paper	HS-ETS1-1, HS-ETS1-3, HS-ETS1-5	
Unit 7: Semester Review Lesson 1: Semester Review		
Unit 7: Semester Review Lesson 2: Your Choice		
Unit 7: Semester Review Lesson 3: Your Choice		
Unit 7: Semester Review Lesson 4: Semester Test		