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| **TEXAS CTE LESSON PLAN**  [www.txcte.org](http://www.txcte.org) | |
| **Lesson Identification and TEKS Addressed** | |
| **Career Cluster** | Law, Public Safety, Corrections, & Security |
| **Course Name** | Forensic Science |
| **Lesson/Unit Title** | History of Forensic Science |
| **TEKS Student Expectations** | **130.339. (c) Knowledge and Skills**  (5) The student explores the history, legal aspects, and career options within forensic science.  (F)The student is expected to illustrate the history of forensic science and recognize the major contributors in the development of forensic science |
| **Basic Direct Teach Lesson**  (Includes Special Education Modifications/Accommodations and  one English Language Proficiency Standards (ELPS) Strategy) | |
| **Instructional Objectives** | The student will be able to:  1. Recognize the major contributors to the development of forensic science.  2. Illustrate the history of forensic science. |
| **Rationale** | Forensic science is the application of science to criminal and civil law, making the scientist in the crime laboratory an active participant in the criminal justice system. An understanding of the origin and development of forensic science is imperative for effective communication in the courtroom. |
| **Duration of Lesson** | Two 45-minute lectures |
| **Word Wall/Key Vocabulary**  *(ELPS c1a,c,f; c2b; c3a,b,d; c4c; c5b) PDAS II(5)* |  |
| **Materials/Specialized Equipment Needed** | * Posters and drawing materials * History of Forensic Science Quiz and Key Discussion Rubric * Presentation Rubric * Research Rubric |
| **Anticipatory Set**  (May include pre-assessment for prior knowledge) | Discuss the following article with your class: <http://www.crimemuseum.org/library/forensics/origins.html>  Use the Discussion Rubric for assessment |
| **Direct Instruction \*** | 1. Before the 17th Century    1. Guilty persons were thought to confess under torture, while God would give an innocent person the strength to resist the pain (similar to the Salem Witch Trials).    2. The earliest record of the application of forensic science was back in the 3rd century in China. A woman claimed that her husband died when he was unable to escape from a house fire. A suspicious coroner performed an experiment in which he burned one pig alive and burned another pig that was already dead. He noticed that the pig that was burnt alive had ashes inside its mouth while the dead pig did not. Upon finding the deceased man’s mouth to be free of ashes, he questioned the widow, and she confessed to murdering her husband and burning his body to destroy the evidence. 2. The 18th century – in 1775, Carl W. Scheele, a Swedish chemist, devised the test for detecting arsenic in corpses. 3. The 19th century    1. Medical advancements enabled medical examiners (MEs) to determine causes of death.    2. The development of microscopes allowed trace evidence examination.       1. 1828 – polarizing microscope invented       2. 1839 – first microscopic detection of sperm    3. The development of chemical tests allowed for more evidence testing       1. 1806 – Valentin Ross (German chemist) discovered the precise method of detecting small amounts of arsenic.       2. 1814 – Mathieu Orfilla, Father of Forensic Toxicology, published articles on the detection of poisons and effects.       3. 1839 – the first use of toxicological evidence in a criminal trial       4. 1863 – the first presumptive test for blood was discovered.    4. 1850-1860s – the development of photographs allowed for more accurate records and documentation.    5. 1879 – Alphonse Bertillon, a French anthropologist, introduced the Bertillon System, also called Anthropometry. It was a system of identifying people by their physical appearance. Various measurements were taken and recorded from various parts of the body. It was considered to be the most accurate method of personal identification until the Will West case in 1903.    6. 1888 – London was terrorized by “Jack the Ripper.”    7. 1893 – the first book of criminal investigation using forensic science,    8. Criminal Investigation, was published by Hans Gross from Austria.    9. The most influential figure in 19th century forensic science was “Sherlock Holmes,” the fictional character created by Sir Arthur Conan Doyle. His influence can be compared to the popularity of modern crime scene investigation television shows. 4. The 20th Century    1. 1903 – Kansas State Prison incarcerated two individuals by the name of Will West. They both had identical facial features and body measurements, by the Bertillon’s System. This led to the end of Anthropometry and the beginning of acceptance for fingerprinting.    2. 1901 – Karl Landsteiner discovers ABO blood typing.    3. 1910 – Questioned Documents published by Albert Osborn.    4. 1913 – Locard's Exchange Principle by Edmond Locard (French)       1. When two objects come into contact with each other, they exchange materials. This is called cross-transfer.       2. Locard also started the first known Police Crime Lab in France. 5. Walter McCrone (USA, 1916-2002) was the leading expert in microscopy.    1. History of Crime Labs in the US    2. 1923 – Los Angeles PD Crime Lab is the first in the US    3. 1930 – the University of California at Berkeley Criminalistics Department was opened and led by Dr. Paul Kirk.    4. 1932 – FBI National Laboratory opened under Director J. Edgar Hoover.    5. 1981 – FBI Forensic Science Research & Training Center opened five Federal Crime Labs in the USA.       1. The FBI Laboratory (Quantico, VA)       2. The Drug Enforcement Administration (DEA) Laboratories analyze drugs seized in violation of federal laws.       3. The Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Laboratories analyze alcoholic beverages, weapons, and explosive devices.       4. The U.S. Postal Inspection Services Laboratories       5. The United States Army Criminal Investigation Laboratory (USACIL) in Ft. Gillem, GA 6. Local Crime Labs    1. Houston Police Department Crime Laboratory    2. Harris County Medical Examiner’s Office    3. Texas Department of Public Safety Forensic Laboratories       1. Headquarters in Austin, TX       2. Fourteen total locations including Houston, Abilene, Amarillo, Corpus Christi, Garland, Lubbock, Tyler, and El Paso    4. Major Crime Labs abroad       1. Britain has the British Home Office.          1. Metropolitan Police Laboratory, Scotland Yard, services London          2. Five other regional labs       2. Canada has the Royal Canadian Mounted Police (RCMP) laboratories       3. Centre of Forensic Sciences in Toronto, Canada       4. The Institute of Legal Medicine and Police Science in Montreal, Canada   *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*  NONE |
| **Guided Practice \*** | *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*  NONE |
| **Independent Practice/Laboratory Experience/Differentiated Activities \*** | Create a historical timeline poster. Have students work as individuals, or in small groups, to create a historical timeline poster by arranging events in the history of forensic science and the crime laboratories in chronological order. The students may present their posters to the class. Use the Presentation Rubric for assessment.  *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*  NONE |
| **Lesson Closure** |  |
| **Summative/End of Lesson Assessment \*** | * History of Forensic Science Quiz * History of Forensic Science Poster Presentation   *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*  NONE |
| **References/Resources/**  **Teacher Preparation** | * Saferstein, Richard. Forensic Science: An Introduction. New Jersey: Pearson Prentice Hall, 2008. * Bertino, Anthony J. Forensic Science: Fundamentals and Investigations. Mason, OH: South-Western Cengage Learning, 2009. * http://www.crimemuseum.org/library/forensics/origins.html |
| **Additional Required Components** | |
| **English Language Proficiency Standards (ELPS) Strategies** |  |
| **College and Career Readiness Connection[[1]](#footnote-1)** |  |
| **Recommended Strategies** | |
| **Reading Strategies** |  |
| **Quotes** |  |
| **Multimedia/Visual Strategy**  **Presentation Slides + One Additional Technology Connection** |  |
| **Graphic Organizers/Handout** |  |
| **Writing Strategies**  **Journal Entries + 1 Additional Writing Strategy** |  |
| **Communication**  **90 Second Speech Topics** |  |
| **Other Essential Lesson Components** | |
| **Enrichment Activity**  (e.g., homework assignment) | For reinforcement, the students will research their local and state crime laboratories and the services offered by each laboratory. Use the Research Rubric for assessment.  For enrichment, the students will research and write a report on the analysis performed by Walter McCrone on the Shroud of Turin or the Vinland map.  Use the Research Rubric for assessment. |
| **Family/Community Connection** |  |
| **CTSO connection(s)** |  |
| **Service Learning Projects** |  |
| **Lesson Notes** |  |

1. Visit the Texas College and Career Readiness Standards at <http://www.thecb.state.tx.us/collegereadiness/CRS.pdf>, Texas Higher Education Coordinating Board (THECB), 2009. [↑](#footnote-ref-1)