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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 Fingerprinting |
| **TEKS Student Expectations** | 130.339. (c) **Knowledge and Skills**(4) The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom.(F) The student is expected to research and describe the history of science and contributions of scientists within the criminal justice system.(8) The student analyzes impression evidence in forensic science.(F) The student is expected to explain the Automated Fingerprint Identification System (AFIS) and describe the characteristics examined in the AFIS  |
| **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 fingerprinting2. Illustrate the history of fingerprinting3. Explain the Automatic Fingerprint Identification System |
| **Rationale** | Fingerprinting is used as a means of identification in criminal investigations. To fully understand its scientific and legal applications, a Latent Print Examiner must be familiar with the history and development of fingerprinting. |
| **Duration of Lesson** | 4 to 6 hours |
| **Word Wall/Key Vocabulary***(ELPS c1a,c,f; c2b; c3a,b,d; c4c; c5b) PDAS II(5)* |  |
| **Materials/Specialized Equipment Needed** | **Materials*** Poster board and markers
* Computers with Internet access
* History of Fingerprinting Quiz and Key
* Discussion Rubric
* Individual Work Rubric
* Presentation Rubric
* Research Rubric
* Writing Rubric
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| **Anticipatory Set**(May include pre-assessment for prior knowledge) | Do an Internet search for the following: Savvy criminals obliterating fingerprints to avoid identification. Read and discuss the article as a class.Use the Discussion Rubric for assessment. |
| **Direct Instruction \*** | 1. Fingerprints
	1. Definition – A fingerprint is the impression left by a finger’s friction ridges upon contact with a surface. These fingerprints are a unique trademark.
	2. Patterns of classification – arch, loop, and whorl
2. Discovery Timeline
	1. The ancient world
		1. Ancient China – documented use 3000 years ago
		2. Babylon – used for identity on clay tablets
	2. The modern world
		1. 1686 – Marcello Malpighi noticed the ridges, spirals, and loops.
		2. 1823 – John Purkinje published a discussion of 9 fingerprint patterns.
		3. 1858 – Sir William Herschel required Indians to sign contracts with hand prints and later with fingerprints.
		4. 1880 – Dr. Henry Faulds recognized the importance of fingerprints as a means of identification.
		5. 1888 – Sir Francis Galton published “Finger Prints” which discussed the anatomy of fingerprints and pattern types.
		6. 1891 – Juan Vucetich created a fingerprint classification system in Argentina.
		7. 1897 – Sir Edward Richard Henry created another fingerprint classification system in England that included grouping fingerprint patterns according to arches, loops, and whorls. The Henry System is still in use today.
	3. The United States
		1. 1901 – the New York City civil service commission adopts fingerprinting for personal identification of all applicants; the first in the U.S.
		2. 1903 – Will West case
		3. 1904 – World’s Fair in St. Louis: representatives from Scotland Yard train several U.S. Police officials.
		4. 1906 – the U.S. Army began using fingerprints.
		5. 1924 – the Identification Division of the FBI was established.
		6. 1948 – Introduction of the Automated Fingerprint Identification System (AFIS)
		7. 1977 – the International Association for Identification (IAI) voted to establish the world's first certification program for fingerprint experts.
		8. 2009 – the Automated Fingerprint Identification System: a computerized fingerprint database that can search through millions of records in a short period of time. It provides a list of potential identification "hits" that can be verified by a certified Latent Print Examiner.
		9. 2010 – the Integrated Automatic Fingerprint Identification System (IAFIS) operated by the FBI; Inquiring agencies receive electronic responses to criminal submissions within two hours.

*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 \*** | 1. Have students work as individuals or small groups to create a poster illustrating the history of fingerprinting with a timeline using the major contributors to forensic science. The students may present their posters to the class. Use the Presentation Rubric for assessment.
2. Have students research the IAFIS and write a minimum one-page paper explaining the system. Students should cite the resources and edit their work. Use the Writing Rubric for assessment.

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| **Lesson Closure** |  |
| **Summative/End of Lesson Assessment \***  | *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*For reinforcement, the student will assemble a timeline using premadematerials. Use the Individual Work Rubric for assessment. |
| **References/Resources/****Teacher Preparation** |  |
| **Additional Required Components** |
| **English Language Proficiency Standards (ELPS) Strategies** | Do an Internet search for the following:• Savvy criminals obliterating fingerprints to avoid identification• Onin fp history• Sirchie |
| **College and Career Readiness Connection[[1]](#footnote-1)** | English Language Arts1. Writing

A. Compose a variety of texts that demonstrate clear focus, the logical development of ideas in well-organized paragraphs, and the use of appropriate language that advances the author’s purpose.* + 1. Determine effective approaches, forms, and rhetorical techniques that demonstrate understanding of the writer’s purpose and audience.
		2. Generate ideas and gather information relevant to the topic and purpose, keeping careful records of outside sources.
		3. Evaluate relevance, quality, sufficiency, and depth of preliminary ideas and information, organize material generated, and formulate a thesis.
		4. Recognize the importance of revision as the key to effective writing. Each draft should refine key ideas and organize them more logically and fluidly, use language more precisely and effectively, and draw the reader to the author’s purpose.
		5. Edit writing for proper voice, tense, and syntax, assuring that it conforms to standard English, when appropriate.
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| **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 student will assemble a timeline using premade materials. Use the Individual Work Rubric for assessment.For enrichment, the student will research details of an assigned scientist who made an impact on the science of fingerprints. Use the Research Rubric for assessment. |
| **Family/Community Connection** |  |
| **CTSO connection(s)** | SkillsUSA |
| **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)