Unit 7- Forensic scientists compare questioned and known

Content Area: **Science**
Course(s): **Forensic Science**
Time Period: **March**
Length: **10 Blocks**
Status: **Published**

Enduring Understandings

No two fingers have yet been found that possess identical ridge characteristics.
A fingerprint remains unchanged during a person's lifetime.
Fingerprints have ridge patterns that allow them to be systematically classified.

Essential Questions

How are fingerprints used in criminal investigations?

Content

Vocabulary
Arch
Digital imaging
Fluoresce
Iodine fuming
Latent fingerprinting
Livescan
Loop
Ninhydrin
Physical Developer
Pixel
Plastic print
Ridge characteristics
Super Glue Fuming
Visible print
Whorl

Skills

Identify the common ridge characteristics of a fingerprint
List the three major fingerprint patterns and their respective subclasses
Distinguish visible, plastic and latent fingerprints

Describe the concept of an automated fingerprint identification system (AFIS)
List the techniques for developing latent fingerprints on porous and nonporous objects
Describe the proper procedures for preserving a developed latent fingerprint

Resources

- Teacher's Wraparound Edition for Forensic Science: An Introduction, 2nd Edition

  Richard Saferstein, Forensic Science Consultant ©2011 |Prentice Hall

- Instructor's Manual with Lesson Plans for Forensic Science: An Introduction, 2nd Edition

  Richard Saferstein, Forensic Science Consultant ©2011 |Prentice Hall

- Basic Laboratory Exercises for Forensic Science: An Introduction, 2nd Edition

  Richard Saferstein, Forensic Science Consultant ©2011 |Prentice Hall

- Forensic Science Experiments (Facts on File Science Experiments) Hardcover – October 1, 2009

  by Pamela Walker (Author), Elaine Wood (Author)

- Forensic Science Experiments on File (Facts on File Science Library) Ring-bound

- Crime Scene Investigations: Real-Life Science Labs For Grades 6-12

  by Pam Walker, Elaine Wood, Christopher Stone (Illustrator)

Assessments

Performance: Lab Assignment
Lab: Finger the Felon Students print their own finger prints and they become familiar with the three patterns of fingerprints

Performance: Lab Assignment
Lab: The Invisible Prints Students will exchange beakers and exchange finger print cards (previous activity) and try to match the person who touched the beaker.

Performance: Lab Assignment
Lab: Super Glue Students will take a metal spoon and put a thumb print on it. Students can be expected to analyze print to identify the person who touched spoon.

Standards

SEP.1	Asking Questions and Defining Problems
CCC.1	Patterns.
	Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them.
SEP.1.a	Ask questions
CCC.1.1	students observe patterns in systems at different scales and cite patterns as empirical evidence for causality in supporting their explanations of phenomena. They recognize classifications or explanations used at one scale may not be useful or need revision using a different scale; thus requiring improved investigations and experiments. They use mathematical representations to identify certain patterns and analyze patterns of performance in order to reengineer and improve a designed system.
SEP.1.a.1	that arise from careful observation of phenomena, or unexpected results, to clarify and/or seek additional information.
SEP.3	Planning and Carrying Out Investigations
SEP.3.d	Select appropriate tools to collect, record, analyze, and evaluate data.
SEP.4	Analyzing and Interpreting Data
SEP.4.a	Analyze data using tools, technologies, and/or models (e.g., computational, mathematical) in order to make valid and reliable scientific claims or determine an optimal design solution.
SEP.4.b	Apply concepts of statistics and probability (including determining function fits to data, slope, intercept, and correlation coefficient for linear fits) to scientific and engineering questions and problems, using digital tools when feasible.
SEP.4.c	Consider limitations of data analysis (e.g., measurement error, sample selection) when analyzing and interpreting data.
SCI.9-12.1.2	Classifications or explanations used at one scale may fail or need revision when information from smaller or larger scales is introduced; thus requiring improved investigations and experiments.