

# 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

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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

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How are fingerprints used in criminal investigations?

## Content

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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

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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**

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- 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**

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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

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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.
SCI.9-12.CCC.1	Patterns.
SCI.9-12.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.
SCI.9-12.SEP.1	Asking Questions and Defining Problems
SCI.9-12.SEP.1.a	Ask questions
SCI.9-12.SEP.1.a.1	that arise from careful observation of phenomena, or unexpected results, to clarify and/or seek additional information.
SCI.9-12.SEP.3	Planning and Carrying Out Investigations
SCI.9-12.SEP.3.d	Select appropriate tools to collect, record, analyze, and evaluate data.
SCI.9-12.SEP.4	Analyzing and Interpreting Data
SCI.9-12.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.
SCI.9-12.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.
SCI.9-12.SEP.4.c	Consider limitations of data analysis (e.g., measurement error, sample selection) when analyzing and interpreting data.  Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them.