

Fingerprints

The Science of Ridges

Name _____

- _____ is the study of the uniqueness of friction ridge structures and their use for personal identification.
- As we have learned in our first lesson, a fingerprint is made of a series of _____ and _____ on the surface of the finger. The uniqueness of a fingerprint can be determined by the _____ of ridges and valleys as well as the _____ points, which are points where the ridge structure changes.
- When minutiae on two different prints match, these are called points of _____ or points of _____. At this point there is _____ international standard for the number of points of identification required for a match between two fingerprints. However, the United Kingdom requires a minimum _____ points while Australia requires _____.
- AFIS = _____

5. Ridge Characteristics - Draw the different ridge characteristics listed below.

Core	Ending Ridge	Short Ridge	Fork or Bifurcation
Delta	Dot or Island	Eye	Hook
Crossover	Bridge	Enclosures	Specialty

6. How many ridge characteristics can you identify in this fingerprint? Use a hand lens and highlighter to help you identify the characteristics and then label each one.



Try It! - Analyze the fingerprints on your "My Prints" worksheet to see how many ridge characteristics you can find.

Which ridge characteristics did you find in your fingerprints? List them below and mark the two most common ones with a star.

Fingerprint Challenge #1

G



- Match the prints inside the question mark to the prints found around the border of the page.
- You must highlight 3 common features for each pair.

Use a magnifying glass!



Fingerprint Challenge #2

See if you can identify each minutia point in this fingerprint found at a crime scene. When you are done check your answers at the front of the room.

Fingerprint Minutiae



Fingerprint Challenge #3

Matching Fingerprints: When you are done check your answers at the front of the room.

From the 20 impressions below, match the ones that are made by the same finger. In some cases, one print may appear two or three times. Some will not match. Write your answers in your notebook or in the space below each fingerprint.



HINT: There is 1 triple print, 6 doubles & 5 with no match at all

DEAD RECKONING: FINGERING THE KILLER

1. What crime is being investigated on this episode of Dead Reckoning and what is the time period of the investigation? Why was the crime committed?
2. What evidence is harvested by the investigative team to figure out whom, how and why the murder occurred? Be specific.
 1. _____
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____
3. How did the investigators analyze the evidence? What methods, tools or equipment did they use?

Discussion

4. What did you think about the work done by the investigators and lab technicians over the 25+ years? How many hours do you think were spent in solving this crime?
5. What were the changes that occurred in evidence analysis over that period?
6. What do think are the 2 strongest pieces of evidence that could be used when convicting a suspect of a specific crime?