

WHO DUNNIT?

FINGERPRINTING ACTIVITY

Developed with support from S.P.S.A Forensic Services, Finger Print Dept. Glasgow

BACKGROUND

The skin on the palms of the hands and the soles of the feet is quite unlike the skin covering the rest of the body's surface. It lacks colouration, hair or hair follicles and some of the glands found elsewhere in the human body (although there are sweat glands present). This skin consists of a system of ridges and grooves and it is known as friction ridge skin. No two people have the same particular ridge characteristics even though there are roughly 7 billion people in the world. In fact the fingerprint on each finger is unique. Fingerprinting has therefore been used as a reliable method of identification for over 100 years.

LEAVING A PRINT

Sweat from the sweat glands on the palms runs along the ridges of the skin so that if a surface is touched, the sweat will be transferred leaving an impression of the ridge detail.

A fingerprint can be left on many types of surface. By using a suitable product, either powder or chemical, the marks can be made visible and recorded by lifting and/or photography. Also, if the fingers are coated with ink for example, then a permanent impression may be made.

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HOW TO TAKE A FINGERPRINT

You will need:

- Paper
- Pencil (soft lead works best)
- A finger!

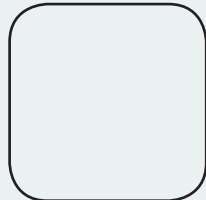


Method:

1. Colour in a small area of paper heavily with the pencil.
2. Roll your left index finger over the graphite, coating your whole fingertip.
3. Press down your finger firmly into the space on the next page.
4. Repeat the process for your right index finger.

GRAPHITE PRINT

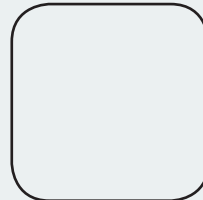
Left Index Finger



Circle:

Whorl Loop Arch

Right Index Finger



Circle:

Whorl Loop Arch

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FINGERPRINT PATTERNS

Although no two fingerprints are identical they can be grouped into 3 main families: **LOOPS**, **ARCHES** and **WHORLS**

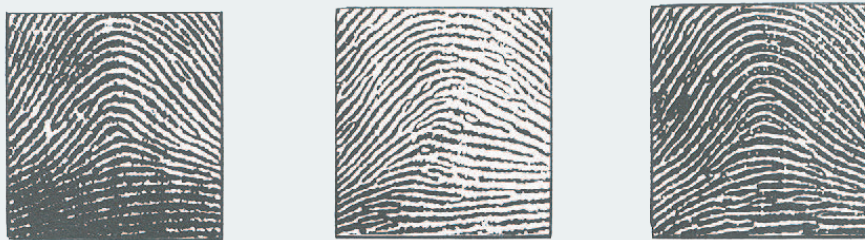
1. LOOPS

In a loop pattern, the ridges enter from either side, re-curve and pass out on the same side that they entered.



2. ARCHES

The ridges enter on one side, make a rise in the centre and exit generally on the opposite side.



3. WHORLS

The ridges are usually circular.



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RIDGE CHARACTERISTICS

A fingerprint expert must match at least 15 ridge characteristics from the suspect's print with the crime mark to make a reliable conviction.

INDEPENDENT RIDGE



- (a) **Ridge Ending:** Where a ridge ends abruptly.
- (b) **Bifurcation:** Where a ridge divides or forks into two.
- (c) **Lake:** Where a single ridge divides and is then rejoined, forming a small, oval shape (or lake) within the ridge.
- (b) **Independent Ridge:** These are small ridges situated between ridges on either side.
- (b) **Spur:** Where a short section of a ridge splits from a continuing ridge and ends in the space between two parallel ridges.

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ANALYSE, COMPARE & MATCH

To the left of this text is an image of a right index fingerprint lifted from a carrier bag at a crime scene. Below are fingerprints showing the right index finger of the four key suspects in this crime.

Identify the suspect responsible for the crime

Circle their print below (once you are sure!)

Match at least 5 ridge characteristics

Circle and label them on the enlarged crime scene image on the left



Suspect 1



Suspect 2



Suspect 3



Suspect 4

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