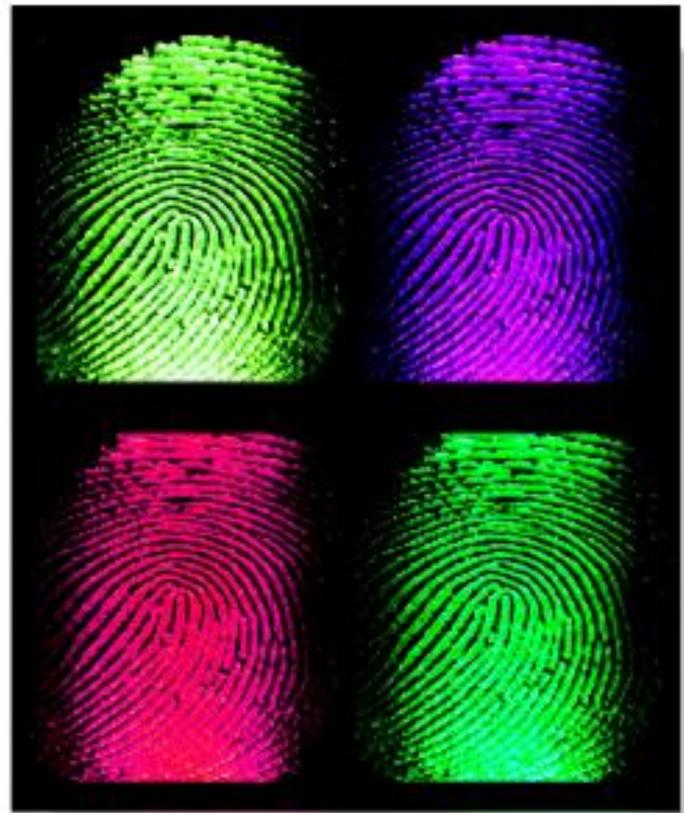


Fingerprints



etys

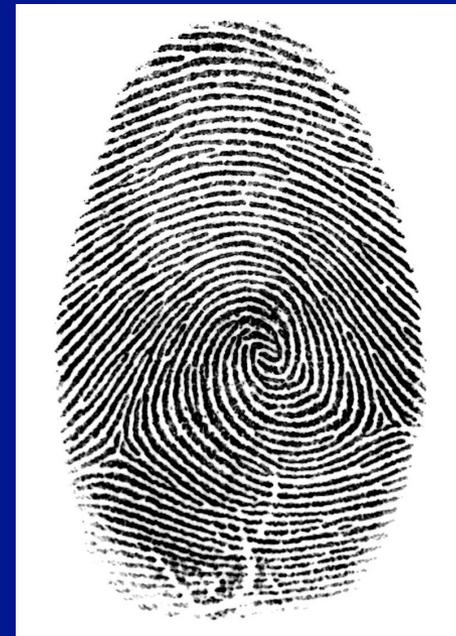
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It was the break they had been waiting for: prints left behind at the scene of the crime.

Fingerprinting

- System of identification based on the classification of finger ridge patterns



Fundamental Principles of Fingerprints

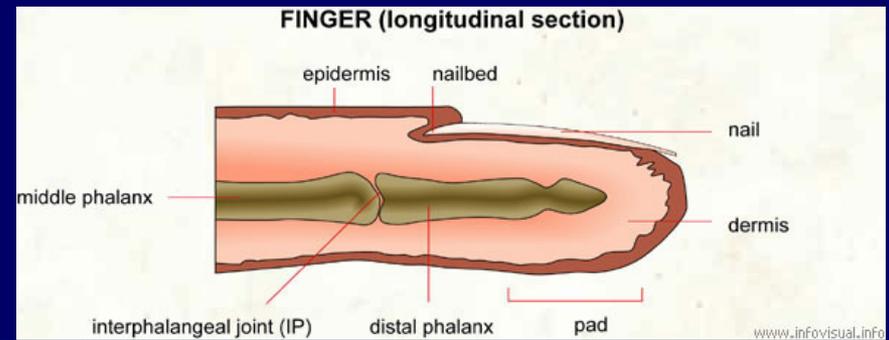
1. No two persons have identical ridge patterns.
2. A fingerprint remains unchanged during a person's lifetime.
3. Fingerprints have general ridge patterns that can be systematically classified.

What are Fingerprints?

- An impression left on any surface that consists of patterns made by the ridges on a finger
- Ridge: appears dark in an images
- Valley: appears light in an image



Human Skin



- The epidermis (outer layer) and dermis (inner layer) determine the form and pattern of ridges on the surface of skin
- Fingerprints develop in the human fetus (starting the 10th week)
- Other prints: palms of the hands, soles of feet, lips, ears

Ten Card

- A form used to record and preserve a person's fingerprints

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Name: **MALCOLM LITTLE**

Classification: **9A Aa 10**

Color: **BLACK** Sex: **MALE**

Ref: **1a B**

1--R. Thumb 2--R. Index Finger 3--R. Middle Finger 4--R. Ring Finger 5--R. Little Finger

6--L. Thumb 7--L. Index Finger 8--L. Middle Finger 9--L. Ring Finger 10--L. Little Finger

Left hand impressions: 1, 2, 3, 4, 5

Right hand impressions: 6, 7, 8, 9, 10

Impressions taken by: *John F. Little*

Prisoner's signature: *Malcolm Little*

Fingerprint Patterns

Three classes:

- Loops
- Whorls
- Arches



Fingerprint Data

Fingerprint Type	Total #	Classroom Total #	Classroom %	National Population (%)
Loop				
Whorl				
Arch				

National Fingerprint Data

National Population:

- Loops (65%)
- Whorls (30%)
- Arches (5%)





Whorl

30%



Loop

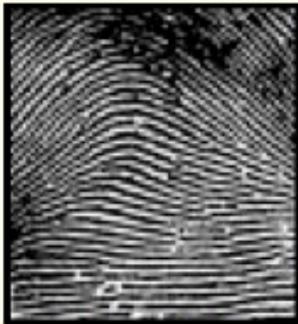
65%



Arch

5%

Fingerprint Patterns



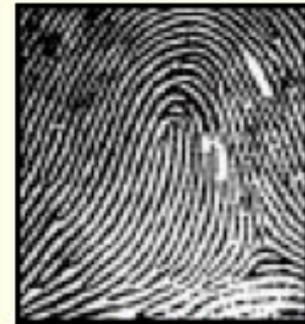
Plain Arch



Tented Arch



Ulnar Loop



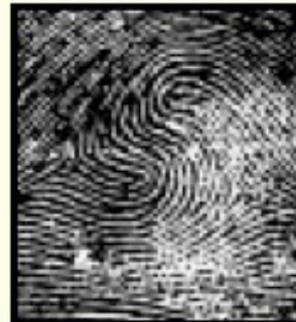
Radial Loop



Plain Whorl



**Central Pocket
Loop**



**Double Loop
Whorl**



**Accidental
Whorl**