

FORENSIC SCIENCE: FINGER PRINTS

Analysis of fingerprints is probably the most well known use of forensic science. Each fingertip has a pattern of fine skin ridges that are slightly different for every person - even identical twins.

A fingerprint sample is composed of grease and dried sweat left behind by the tips of the fingers. The palms of the hand also leave identifiable prints, as do the soles of the feet.



- Fingerprints are made of ridges on the skin on the hands. It is thought that they are formed during pregnancy in a mechanism involving how the blood flows over the skin of the unborn baby.
- Your fingerprint does not change from the day you are born until the day you die
- Identical twins have the same DNA, but different fingerprints.

Despite not officially being recognized as a means of identification until early 1900 fingerprints had been used as source of identification since the T'ang Dynasty in China, and in 8th century Japan: a thumbprint could suffice for a signature on legal documents. The first crime solved using fingerprints is sometimes stated to be a murder case that occurred in ancient Rome, where a bloody handprint was later found to be the match for the killer.

Fingerprint features

The scientific study of fingerprints began in about 1900. The system is based on three main print patterns: Whorls (Spirals), arches and loops. A fourth pattern called a composite, has the combined features of the others



Arches

Whorls

Loops

A rough estimation is that between 5 and 15 % of the world population is fingerprinted and has its prints on files. Computers all over the world constantly match millions of records per second penetrating collections in depth even with fragments of prints and generate fast results. The axiom that not two persons have the same fingerprints is already firmly based. With the comparison of billions of prints per day, the opposite is never found, so the uniqueness is constantly confirmed in an unprecedented way.

For murder mystery experiments that you can try at home or in school please visit:

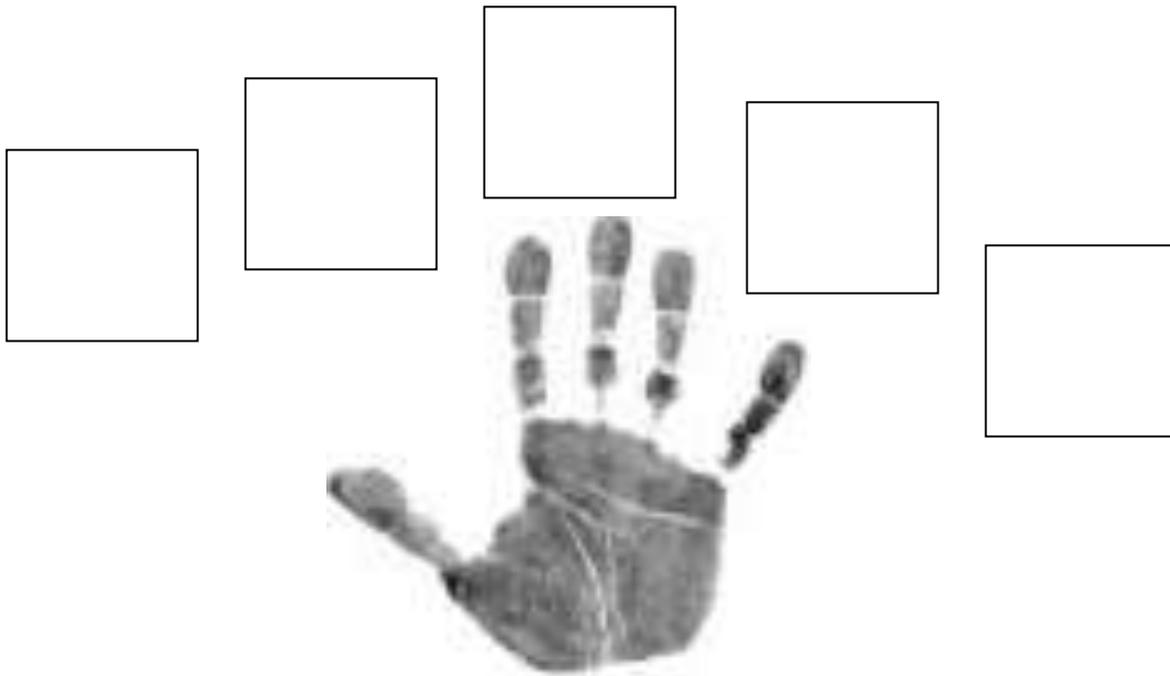
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Collect your own Fingerprints*

One finger at a time –

1. Press a finger on the ink pad
2. Press the same finger in the space outlined below.
3. Upon completion please clean your fingers with the cloth provided

*Collect your friend's fingerprints in the same way and keep them on file for investigating a crime scene (see below).



Collect Fingerprints from a “Crime scene”

Collecting finger prints from a glass –

1. Lay a clean piece of paper on the table.
2. Use a knife to scrape the lead from the tip of a pencil onto the paper (get an adult to help!). Using the end of a spoon mix these scrapings with a teaspoon of talcum powder.
3. Place a piece of card on the inside of the glass (to prevent your own fingerprints from going onto the inside of the glass). Hold the glass from the inside.
4. Lightly brush the mixture of graphite and talcum powder on the outside. This will reveal the prints.
5. Compare the prints on the glass to the prints on file and find out which friend picked up the glass.

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