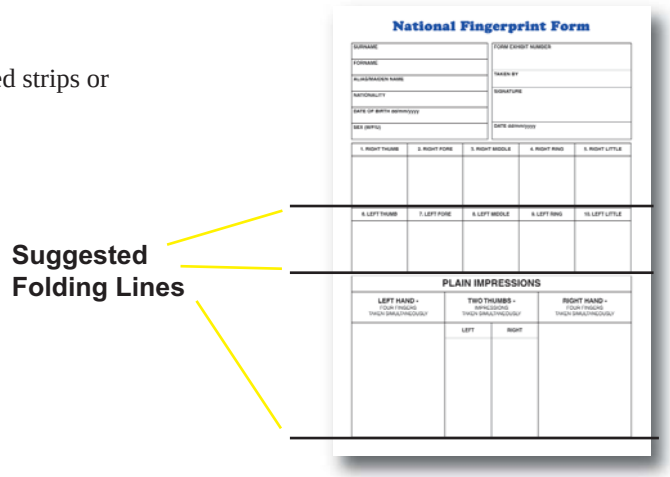
Class Notes –
Collecting Inked Fingerprints

Equipment

- Ink pad, (As an alternative pre-inked strips or inkless printing can be used)
- Fingerprint collection sheets
- Even surface (MDF works well)
- Gloves
- Magnifying glasses



Instructions

In order to take someone's prints for comparison a standard procedure is used, in this exercise you will take each other's prints in order to understand the procedure involved.

Each of the print cards has a specific layout and details that must be filled out, (in this scenario you do not have to use your own details as the print cards will not be collected and are for your own use).When taking prints an even surface is necessary because this prevents the uneven surface of the surface effecting the detail of the prints.

When taking prints work in pairs, each person has their prints taken by the other person. The person taking the prints should wear gloves so that their prints do not appear on the fingerprint form. When taking the prints you may find it easier if you fold the fingerprint form along the suggested folding lines (see above) when taking the appropriate prints and place the form along the edge of the table.

For each finger in turn the finger is rolled in the ink pad covering the finger in ink from nail edge to nail edge and then rolled onto the print card in the appropriate place, again from nail edge to nail edge. First all of the fingers on one hand (inking one at a time) and then the other are taken. If the minutia detail is not visible there may be too much ink on the finger and a test impression can be taken on a scrap of paper to reduce the amount of ink and to practice the technique.

Then all of the fingers of each hand are taken at once, this is to prevent the fingerprints in the other boxes having been placed incorrectly. Palmers (impressions of the friction ridge skin covering the palms of the hand), are usually taken and placed on the back of the fingerprint form but in this case would be unnecessary.

Once you have taken the prints from your partner's hands they will need to wash their hands and take the your prints.

When analysing your prints you will need to identify what first level detail is present, is it a radial or ulnar loop for example or a whorl. Also secondary detail, can you identify as many minutia as possible.

Questions

1.
Go through your own ten print card/fingerprint form and determine what the pattern types are for each finger.

Right Thumb	Right Fore	Right Middle	Right Ring	Right Little
Left Thumb	Left Fore	Left Middle	Left Ring	Left Little

2.
As a class tally up the pattern types for your whole class using the following pattern types, you can subdivide these further if you wish. Can you comment on the distribution;

Loop	Arch	Whorl	Don't Know

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3.
Why are fingerprints useful at a crime scene?

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4.
Some one was arrested due to his DNA being found at the scene of a crime, his prints were also consistent with those found on the murder weapon, but says his identical twin must have done this (he does have an identical twin), what do you make of this? Which evidence is more useful to an investigator?

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5.
Inked prints in this way are sometimes called elimination prints, why do you think this is?

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6.
Take one of your prints (or one of the enlarged prints) and analyse it. Could you identify enough ridge characteristics in your print to make you confident of making a match with another print, how many minutia are necessary for this?

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Glossary of Technical Terms used in this Activity

Expert Witness

An expert witness is someone qualified enough in a particular field to give their opinion upon evidence within that field, an expert witness may be asked to represent their opinion in a court of law.

Fingerprints

Fingerprints are friction ridge skin marks which have been identified by a qualified fingerprint examiner.

Forensic Science

Forensic science deals with the application of scientific knowledge to legal matters including but not exclusive to criminal law

Latent Prints

A print on a surface which is invisible to the naked eye, these prints need some form of development such as using powders or a chemical developer.

Patent Prints

A print which is visible prior to any development such as one found in grease or an inked fingerprint.

Perpetrator(s)

Someone who has committed a (the) crime

Suspects

Someone who is under suspicion of having committed a crime or is believed to have committed a crime.

Investigation of Fingerprints Puzzle

E N I R C C E S I F A N R S K V N X R
S H M D N Y R G N H A I P I Q Q O Z T
F U X E Z Q N B X B D D E M Z E I M E
H F F L K G B I A G G R I R Z B T T H
N O I T A L U G E R O M R E H T A S O
R R F A W N N E A C C V T D K L G U M
D E E I C E N I R I P H D L Y D I O E
C N D U N D H C N S T F Z R C R T E O
B S D W I G F Y I H R U C J L I S C S
R I S N O W E M P I Y A N E Y H E A T
S C G Q T P R R C O O D U I T T V B A
L O O P W E C T P N C Z R W M I N E S
P D G H D S I I A R W S L I P K I S I
E M O I N O M Y T S I T O K N S L E S
I R P M N B C X M E E N S E U E U S U
L E L A T E N T U M N C T R G Q D W V
N O I T A C R U F I B G O S I D U G Q
V A S O D I L A T I O N A N E F E A W
G L P O R O S C O P Y H U M D E G A C

Questions

1. The name give to the friction ridge skin found on the fingers and thumbs (12)
2. A loop would be an example of this level of detail (5)
3. Name for the centre of the print (4)
4. Name given to any science concerned with the law (8)
5. Chemical developer of fingerprints, especially good for porous surfaces such as paper (9)
6. Type of third level ridge detail including the location of eccrine sweat glands.(9)
7. Name given to the body maintaining its own internal environment (11)
8. A detailed inquiry for the assertion of facts (13)
9. Outer layer of the skin (9)
10. Technical name for the active chemical in superglue fuming (13)
11. Type of fingerprint pattern (4)
12. Layer of the skin containing elastic fibres and blood capillaries (6)
13. Type of sweat gland especially abundant on the palms of the hand and the forehead (7)
14. Name given to the level of ridge detail where the minutia are looked at. (6)
15. Type of third level ridge detail including looking at the morphology of the ridges in terms of the shape of their edges (10).
16. Type of ridge characteristic (5,6)
17. Type of sweat gland found at the base of hair follicles (9)
18. Type of ridge characteristic where two ridges meet (11)
19. Most important quality of fingerprints is that they are _____(6)
20. The opening up of blood vessels close to the surface of the skin is known as (12)
21. Part of a print where ridges are meeting from three different directions (5)
22. Type of fingerprint which is invisible to the naked eye (6)
23. Level of detail where a microscope can be used to look at the shape rather than just the pattern of the ridges (5)
24. Fingerprint applicant applied using a magnetic applicator (8,6)
25. Another term for ridge characteristic (8)
26. Fingerprint pattern type where the ridges enter and leave the print on the same side (4)
27. Fingerprint patter type where a ridge turns through a full circle (5)
28. _____ Ridge Skin (8)
29. name given to the automated fingerprint system in the UK (5)
30. Name given to the process by which the body maintains a constant temperature (16)