

# HOMEWORK ASSIGNMENTS

## ASSIGNMENT ONE

1. What is Forensic Science?
2. What is Locard's principle?
3. Explain how the ABO blood grouping system works.
4. Draw a pie chart to show the proportions of each blood group in Australia. Which blood group is the most common in Australia? If you found that blood group at a crime scene, would it be very useful evidence?
5. What is DNA? Include a labeled diagram with your explanation.
6. Explain how DNA can be obtained from a crime scene, magnified and profiled against a DNA sample.
7. If a match is found between DNA left at the crime scene and the DNA of a suspect, does this prove that the suspect committed the crime? Explain your answer. You may describe some possible crimes as part of your explanation.

## ASSIGNMENT TWO

1. What is the study of fingerprints known as?
2. What are the main groups that fingerprints are sorted into?
3. John Dillinger, an American gangster in the 1930's removed his fingerprints by plastic surgery. They grew back! He burned them off with acid, but they grew back again. See if you can find out what happened to John Dillinger. Did he ever get caught?
4. Do you think children would have fingerprints identical to their parents? Explain why or why not.
5. What surfaces make it easy to find fingerprints? What sort of materials are needed to show up the prints?
6. What glands in the skin are associated with leaving fingerprints? Describe what each produces. A diagram needs to be included.
7. What is Anthropometry?
8. What does a forensic odontologist examine? Bite into a chilled Mars Bar and describe what sort of indentations are left.
9. What is Cheiloscopy? Put some lipstick on (or ask someone in your family) and kiss a plain piece of paper. Identify what category your print falls into.

<http://www.mmu.k12.vt.us/teachers/alexanders/Forensics%20Folder/Notes/Lip%20Prints%20basic.pdf>

### ASSIGNMENT THREE

1. Describe two types of crime where hair may be left at the crime scene.
2. How could the forensic scientist decide what sort of animal left the hair behind?
3. What are some differences between fibres seen with the naked eye and the same fibres seen under the microscope?
4. What are the differences between the stereo, light and electron microscopes?
5. Make a table that lists the type of evidence that could be found at the scene of a crime in one column and the type of microscope that could be used to find it in the other column.

### ASSIGNMENT FOUR

1. A footprint has been found in a flowerbed outside a window. What are the steps that a forensic scientist must take to make a cast?
2. In what ways would a cast be more useful than a photograph?
3. Make a list of the sorts of marks that could be left behind at a crime scene that could be made into a cast.

### ASSIGNMENT FIVE

1. How could a cheque be forged?
2. How could you make it more difficult for a criminal to forge your cheque?
3. If a pen gives a distinctive pattern of pigments in a chromatography test, does this necessarily mean that a particular person can be identified from the pen they use?
4. Many people engrave metal objects with identification numbers. Why is it difficult to remove these numbers completely from metals?
5. Banks ask customers with passbook accounts to sign their books with a 'black light' signature. How do bank tellers see the signature? Why would the banks do this?
6. Chromatography can be used to identify the chemicals in a solution or poisons in blood or tissues. Investigate how this type of chromatography works.

### ASSIGNMENT SIX

1. What do different colours in different soils tell the forensic scientist
2. List the various qualities of soil that can be tested
3. What materials make up soil?
4. What is the pH of soil a measure of?