Forensics Learning Outcomes

By the end of this unit you should know the following:

Lesson		Learning Outcome
1		1. What the main tasks of a Crime Scene Investigator are. 2. How to take a suspect's fingerprints correctly.
2		3. How to lift a fingerprint from a glass surface. 4. How to use the minutia of a fingerprint to match identical prints. 5. How to take a shoe print and the importance of wear patterns in order to match identical shoes.
3a		6. Acids and alkalis are opposites. 7. Examples of common acids are vinegar and lemon juice. 8. Examples of acids found in the laboratory are sulphuric acid and hydrochloric acid. 9. Examples of common alkalis are baking powder and indigestion tablets. 10. Universal indicator is used to test the pH of substances. 11. An acid has a pH of less than 7 and will be yellow, orange or red with universal indicator. 12. An alkali has a pH of more than 7 and will be sea green, blue or purple with universal indicator. 13. Neutral substances have a pH of 7 and will be green with universal indicator.
3b		14. Any substance able to neutralise an acid is called a base. 15. When an acid is neutralised by a base, the reaction always produces a salt, water and sometimes a gas. 16. If an acid is neutralised by an alkali (like sodium hydroxide) or a metal oxide (like copper oxide) it forms a salt plus water. 17. Big salt crystals are formed by slow evaporation of solutions.
4		18. If an acid is neutralised by a metal carbonate (like calcium carbonate) it produces a salt, water and carbon dioxide gas. 19. Word equations can be written to describe chemical reactions.

		20. The reactants are found on the left hand side of the arrow in a word equation. These are the substances we start with and react together. 21. The products are found on the right hand side of the arrow in the word equation and are produced during the reaction. 22. Carbon dioxide is the only gas that turns limewater milky. 23. Effervescence describes bubbling and fizzing in a reaction and is a sign of a gas being given off. 24. Hydrogen gas burns with a squeaky pop. 25. Oxygen relights a glowing splint.
5		26. A solution is made by dissolving a solute in a solvent. 27. A dilute solution contains less solute and more solvent. 28. A concentrated solution contains more solute and less solvent. 29. A saturated solution cannot dissolve any more solute.
6a		30. Soil is made up of minerals from rocks and organic matter such as plant or animal waste. 31. There are several types of soil including sandy, clay & loamy. 32. Soil types can be tested by rubbing the soil between a wet finger and thumb.
6b		33. Experiments can be done to calculate the % water retention in soil samples.
7		34. When certain solutions containing metal compounds come together they can react to form an insoluble product. 35. Insoluble products are called precipitates and reactions that produce them are called precipitation reactions.
8		36. Chromatography is used to separate the pigments that make up coloured ink. Each pigment will travel through wet paper at a different speed.
9		37. DNA is found in all cells and lengths of connected DNA molecules, called genes, are like tiny pieces of a secret code.