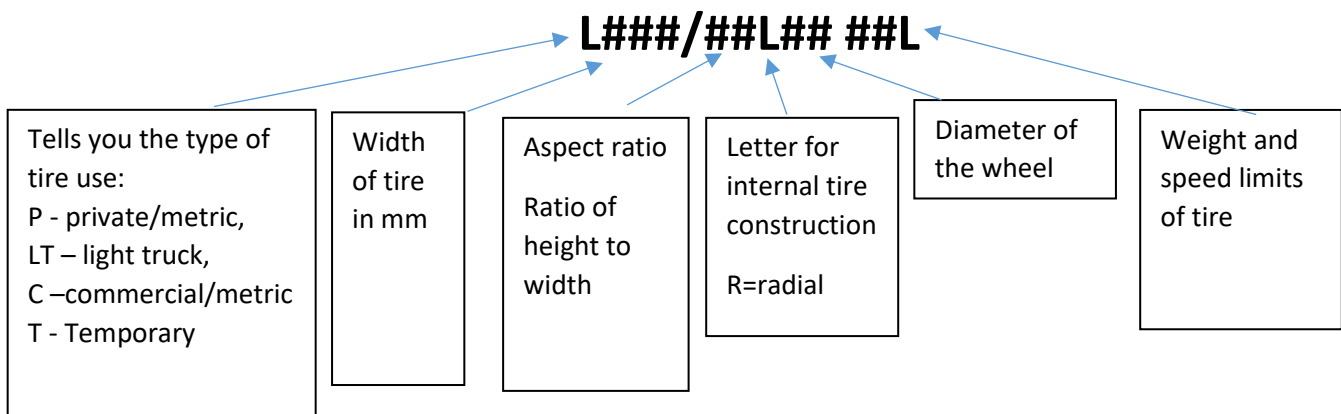# Forensics 30 – Impression Evidence

Unit Review

1. What is impression evidence? **Impression evidence can be defined as objects or materials that have retained the characteristics of other objects through direct contact**

2. Name two ways of collecting footprint evidence? **2D – Measurements and Photographs taken on the print, 3D – a plaster or silicon mould is taken of the print**

3. Define: Dactyloscopy, Friction Ridges, and Minutia   **Dactyloscopy – the science of friction ridge comparison, Friction Ridges – The raised portion of the skin that allows it to have gripping properties.**

4. What are the three different types of fingerprint pattern looked at in class? How are they different? **Arches – ridges enter one end and leave the other. There are no deltas present; Loops – one delta and ridges entering and leaving on the same side; Whorls – two deltas, ridges make a full circuit. (Double Loop Whorl – made from two loops coming from opposite sides, looks like a ying-yang; Accidental Whorl – two or more of the patterns, loops and whorls, but no arch, this pattern doesn't fall nicely into the other categories)**

5. What is the most common fingerprint pattern? What is the least? **Archs 5%, Loops 60%, Whorls 35%**

6. Describe the process of dusting and lifting latent prints. **Powder is applied to the brush. Starting above the print dust is scattered/brushed onto the surface. Once a print is discovered, powder is applied to the print to completely coat it. The excess and surrounding powder is removed. Tape is now placed carefully over the print in a manner that avoids creases. The tape is peeled up and then applied to the fingerprint card in a similar manner.**

7. What are the different types of fingerprint that can be found at a scene? **Latent prints – cannot be seen on a surface, Patent print – are visible on a surface due to the material they were made in (blood, oil, etc…), Plastic Prints – are visible prints that have been pressed into soft material.**

8. In addition to fingerprints what are two other body parts that can leave prints at crime scenes? (we watched a video that talked about this) **Ear prints have started to be used as evidence in Europe. Footprints are also being used as identifying marks in cases starting in Canada.**

9. What is Dentition? **The number and arrangement of different types of teeth in a mammal**

10. What is forensic odontology? **A scientist who studies teeth and uses their knowledge to confirm identities via dental records. They also compare bite marks found at a scene to known arrangements to determine if the marks are human, and to suspect bite moulds to confirm their presence at a crime scene.**

11. What are the four types of teeth, and how are they shaped and used? **Incisors – flat single rooted teeth that are used to cut food; Canines – cone shaped singe rooted teeth, that are used to rip food; Premolars – double cusped and single rooted these teeth are used to grind food; Molars – Large square teeth with multiple cusps and roots used to grind up food.**

12. A dental formula of $\dfrac{2143}{2133}$ means what to all of the different types of teeth? **2 incisors top and bottom, 1 canine top and bottom, 4 premolars top and 3 bottom, and 3 molars top and bottom on one side of the jaw.**

13. What is the difference between the teeth for herbivores, carnivores, and omnivores? Which are we? **Herbivores - Either small or absent canines, large diastema (gap), ridged premolars and molars; Carnivores – Well developed canines, blade-like premolars and molars. Omnivores have a combination of these two, both top and bottom incisors and large canines, as well as flat premolars and molars for grinding. Humans have omnivore teeth.**

14. What is the difference between an Individual Characteristic and a Class characteristic with respect to a toolmark, or a tire tread? **Class Characteristics identify a type of object. These characteristics look at size and pattern that is common for that type. Tread pattern on a tire or size of a crowbar blade fit this characteristic. Individual characteristics are unique to only that object. They can be used to narrow a search to just a single object. A tire tread missing a chunk is individual, as is a pair of plyers with a melted end.**

15. Define the four different types of toolmark that can be found on an object? **Indentation – object pressed into a softer material; Abrasion – object sliding or scratching onto something; Cutting – marks or striations along the edge of the material**

16. What do the 9 letters and numbers on a tire tell you? **These letters and numbers tell us the dimensions of the tire and its speed and load limits. (L = letter, # = number)**

L###/##L## ##L

Tells you the type of tire use: P - private/metric, LT – light truck, C –commercial/metric T - Temporary	Width of tire in mm	Aspect ratio Ratio of height to width	Letter for internal tire construction R=radial	Diameter of the wheel	Weight and speed limits of tire

17. How can direction of travel be discovered when only tire tracks have been left at a scene? **Directional tread pattern, plants pushed over, compression and lifting of snow/soil, dirt mud or water thrown forward when not spinning or backwards when spinning.**

18. How is track width measured? **From centre of tire to centre of tire from right to left. Measurements are also made from inside to inside, and outside to outside to help find the centre. This measurement can only be made using the rear tires as the front tires give inconsistent measurements during turning.**

19. What are the two differences in tracks left by cars when parking? **Drive forward, stop and reverse back while turning makes a D pattern. Backing in while turning, stopping and driving forward gives a b pattern**

20. Who was Ted Bundy? What were his crimes and how was impression evidence used to convict him? **Man who committed 30 murders over 7 states throughout the 70's. He preyed on women who reminded him of a high school girlfriend who rejected him. His crimes were very daring and often committed in broad daylight. Victims would be lured to another location where he would rape and kill them. Bodies, or their parts, were kept for several days until he couldn't stand the rot. He was captures and escaped. After his second capture he was tried for a series of murders/rapes where he had bit a victim leaving distinct marks. These marks and his behavior in court led to Bundy being convicted and eventually executed.**

21. Who is Danny Rosenthall? What were his crimes and how was impression evidence used to convict him? **Danny was a troubled man from London who killed his Father when he was denied money to continue his strange experiments. He killed his mother too when she confronted him. The murders are thought to have occurred using a hammer and the bodies were dissected using a hacksaw. The hacksaw blade was found at the scene in France and the handle was found in London. Blood on the saw was linked to the murders and markings from the blade were matched to marks on the first victim. The second victim's body was never found. Danny was sentenced to life in a mental hospital.**