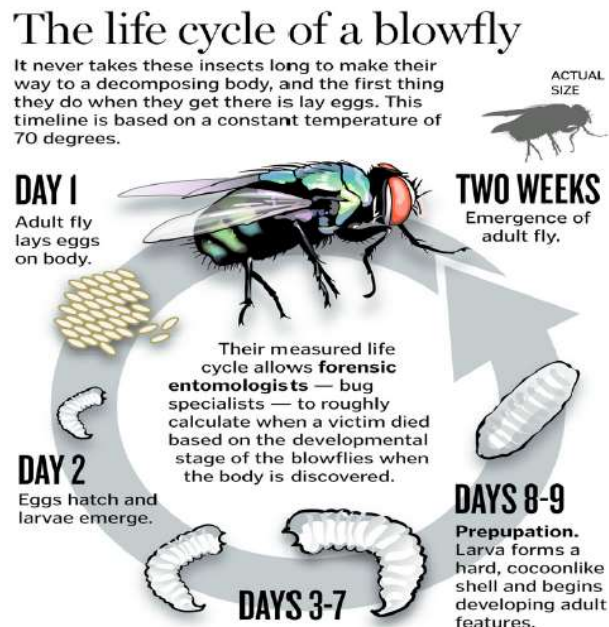


**Forensic Science 30L**  
**Osteology and Entomology**  
**Review**

1. Know the details of the John Wayne Gacy Case.  
**Killer from the 70's who tortured, raped, and murdered 33 males. He buried 26 of the victims in the crawl space under his house.**
2. What are the two types of cells found in bones that are responsible for building bones?  
**Osteoblasts (migrate to the center of cartilage production where they deposit minerals) and Osteoclasts (remove cellular wastes from bones).**
3. What does cartilage do? **Wraps the end of bones and keeps them from scraping together**
4. What is the purpose of ligaments? **They are bands that connect two or more bones together.**
5. What would happen if you had no tendons? **Your muscles wouldn't be attached to your bones.**
6. How long do bones grow for? **Bones grow until you are about 30.**
7. How is it that bones contain the record of a person's physical life? **Handedness can be determined by which side of the body has slightly larger bones. Breaks and injuries will leave a record on the bones. Nutrition will also leave a record in the bones.**
8. Where are the following bones located? Skull, ribs, sternum, vertebral column, pelvis, clavicle, Humerus, Radius, Ulna, Femur, Patella, Tibia, Fibula, Carpals, Tarsals, Phalanges
9. What parts of the skeleton can be used to determine Sex, Age, and Race? **Sex (Skull, pelvis, humerus, and femur), Age (Teeth, bone growth, cranial suture lines), and Race (Skull).**
10. How do you tell male or female from the skull? **Male (square chin, Acute angle to Mandible, Square Eye Orbits, Robust and thick Brow Ridge, pronounced mastoid process ) Female (pointed chin, wide angle to mandible, round eye orbits, small brow ridge, )**
11. How do you tell sex via the Pelvis? **Male (Iliac Crest is high, Pelvic inlet is round, Pelvic outlet is round, Pubic arch is narrow- less than 90) Female (relaxed iliac crest, wide pelvic inlet and outlet, wide rounded pubic arch)**
12. When do the sutures on the skull finally close? **Back of skull close around 30, across top back to front of skull close around 32, across the top side to side close around 50**

13. How many bones are we born with and how many do we have as an adult? **300 at birth and 206 as an adult**
14. Know how to use the height estimation equations? **Length of bone x ratio + base length ± small measurement. This calculation gives a range of lengths.**
15. Know the Kevin Neal case. **Kevin was convicted of the murder of two children. The bodies were found 2 months after they went missing, entomologists were able to determine a possible time of death by analyzing insects collected from around the bodies.**
16. What is PMI? **Postmortem interval is the time between death and discovery of a corpse. It is an estimation made by looking at the development of insects around a body and factoring in weather, location, and body condition.**
17. What are Arthropods? **Insects with three body segments, one pair of antennae, and three pairs of legs.**
18. What are the most important types of arthropods used by forensic entomologists? **Flies (Diptera) and Beetles (Coleoptera)**
19. What is the difference between Complete and Incomplete metamorphosis? **Complete metamorphosis have insects developing from eggs to larvae, forming a pupa, and then into an adult. Incomplete metamorphosis has insects developing from eggs to nymphs and then into adults. CM develop into very different looking insects where IM still look a little like their nymphs.**
20. Label the life cycle of a blowfly?



- 21.** How can maggots help determine if the victim ingested poison or narcotics? **Scientists blend the maggots collected into a milkshake-like mixture that can be analyzed for the presence of drugs or narcotics.**
- 22.** What flies arrive at a body first? **Early Decomposition will have Calliphoridae (Blow & Greenbottle Flies) and Sarcophagidae (Flesh Fly). Late Decomposition will have Muscidae (House Fly) and Piophilidae (Cheese Skipper).**
- 23.** What beetles arrive at a body first? **Early Decomposition will have Silphidae (Carrion Beetles) Staphylinidae (Rove Beetle) and Histeridae (Clown Beetle). Late decomposition will have Cleridae (Ham & Checkered Beetles), Scarabidae (Hide Beetle), Dermestidae (Skin Beetle), Staphylinidae (Rove Beetle) and Histeridae (Clown Beetle).**
- 24.** What is ADH? **Accumulated Degree Hours are used to provide a more accurate time of death. It is found by collecting samples and comparing to insects grown in the lab under similar conditions.**