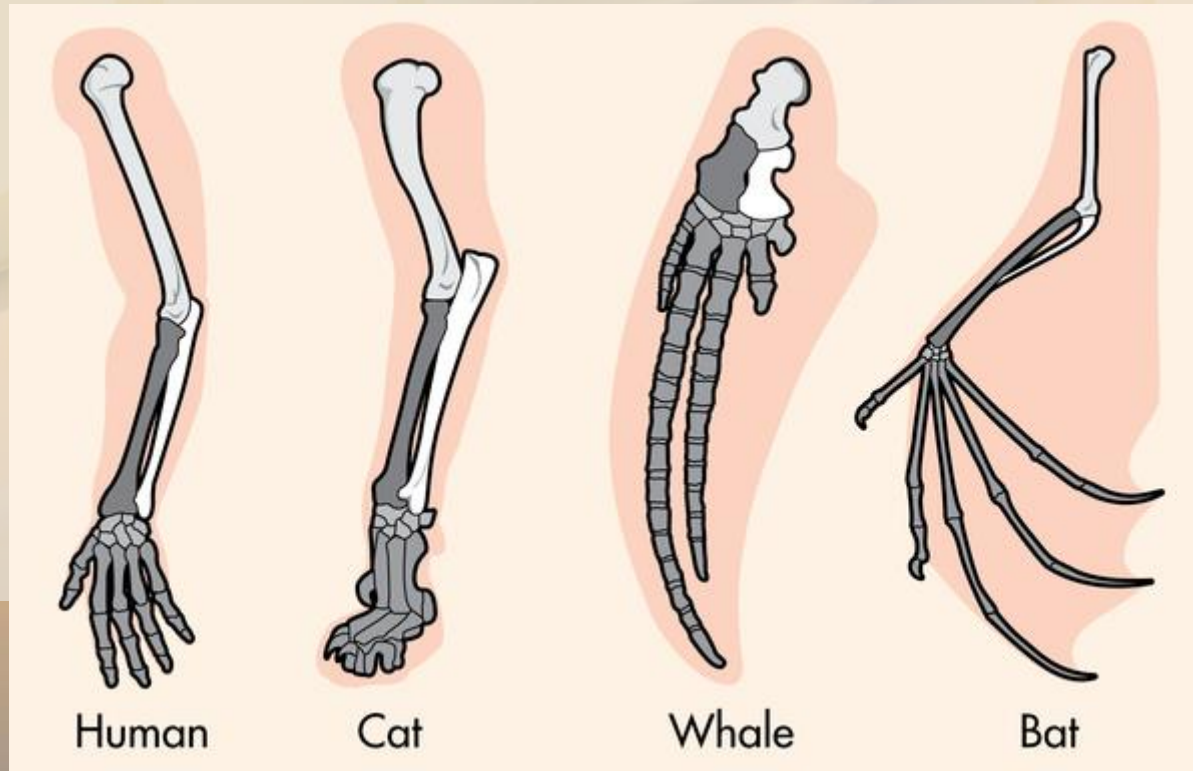


Comparative Anatomy and Embryology

**How can we show common
ancestry?**

Homology

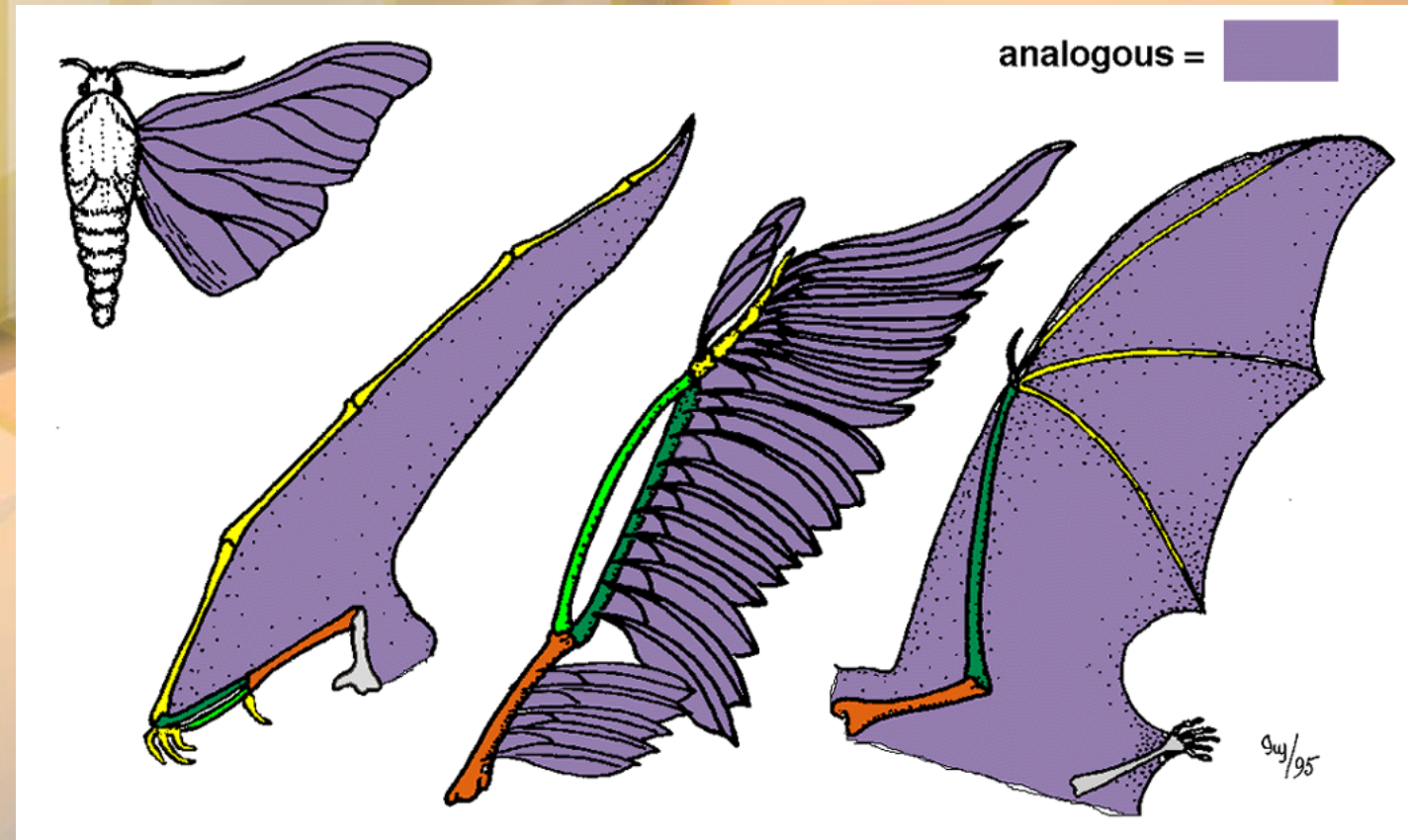
- **Homology** – similarity in anatomical features resulting from common ancestry
 - Same structure but different function – **Homologous Structures**
- Species that share a common ancestor will exhibit similar features that have evolved differently / changed as each organism faced different environmental conditions.



Analogous Structures

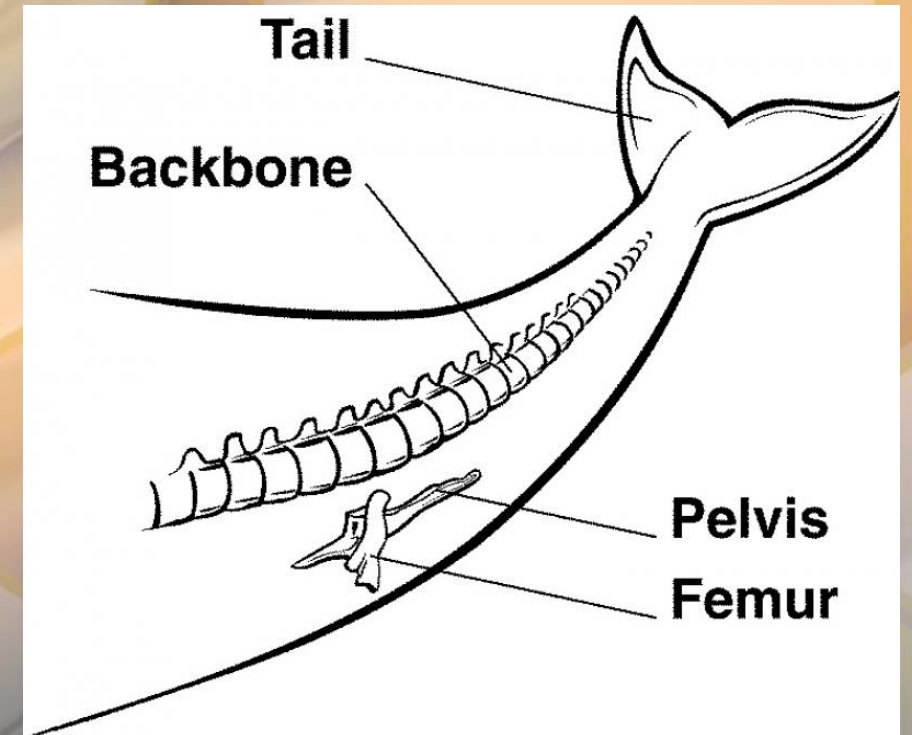
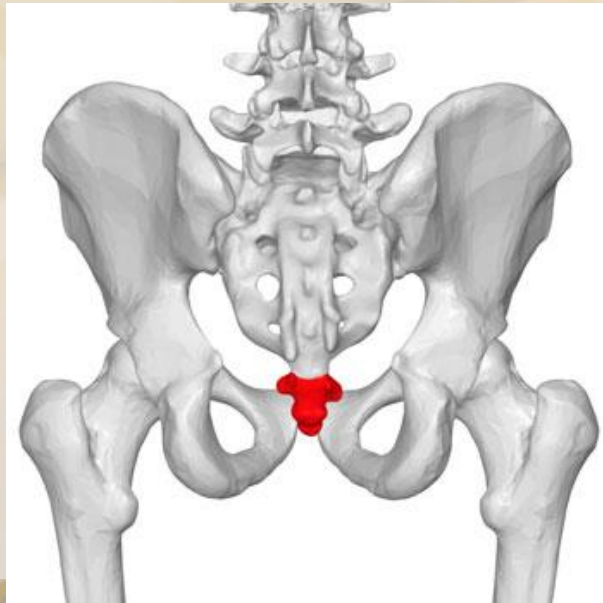
Some structures have the same function but not the same structure this is called analogous structures.

Organisms face similar pressures to adapt to, so they develop similar features, but do not share common ancestors. (Convergent Evolution)



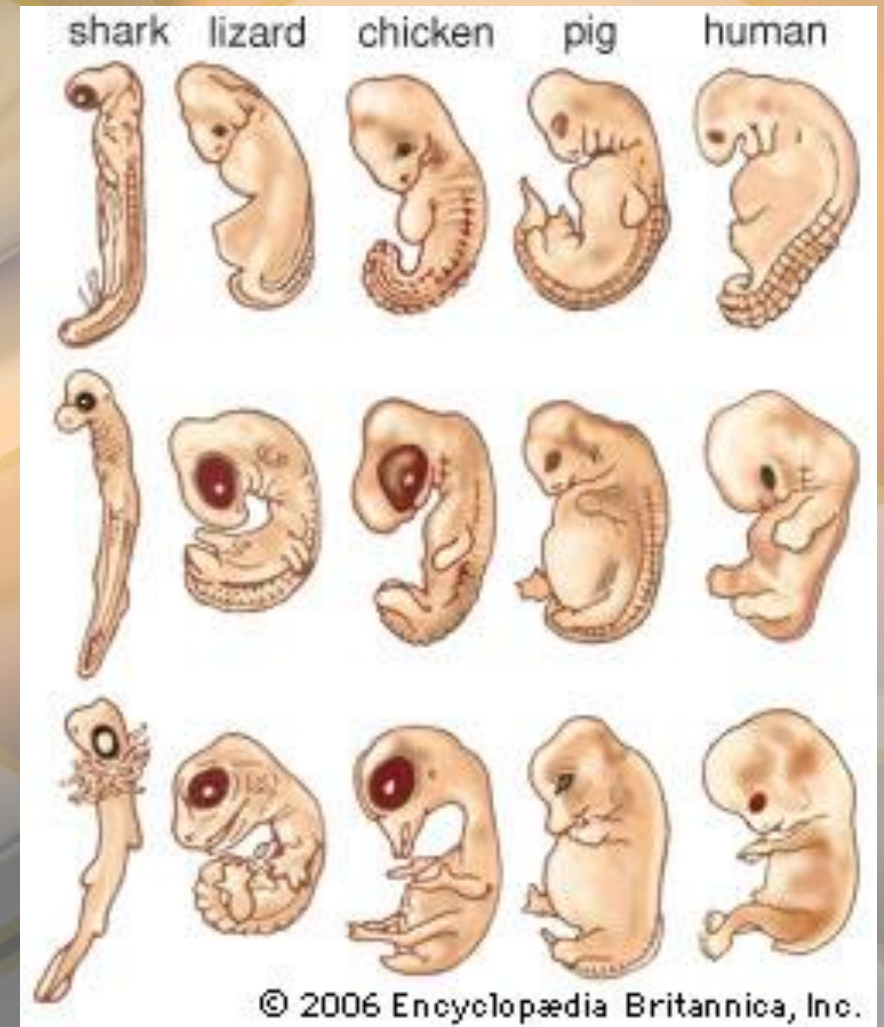
Vestigial Structures

- Vestigial structures are those structures that are similar but are reduced in size and remain unused
- Humans have a vestigial structure. Can you name it?



Embryology

- Embryology is the study of the early stages of development of an organism
- Researchers noticed a long time ago that vertebrate embryos look very similar
- The same groups of embryonic cells develop in the same order and in similar patterns



Embryology

- Vertebrate embryos have fold of tissue in the neck region called gill pouches
- In fish these develop into gills
- In human these same pouches develop to form inner ear bones.

