



**What EVIDENCE do we have to support the theory of evolution?**

# **“EVOLUTION” Defined**

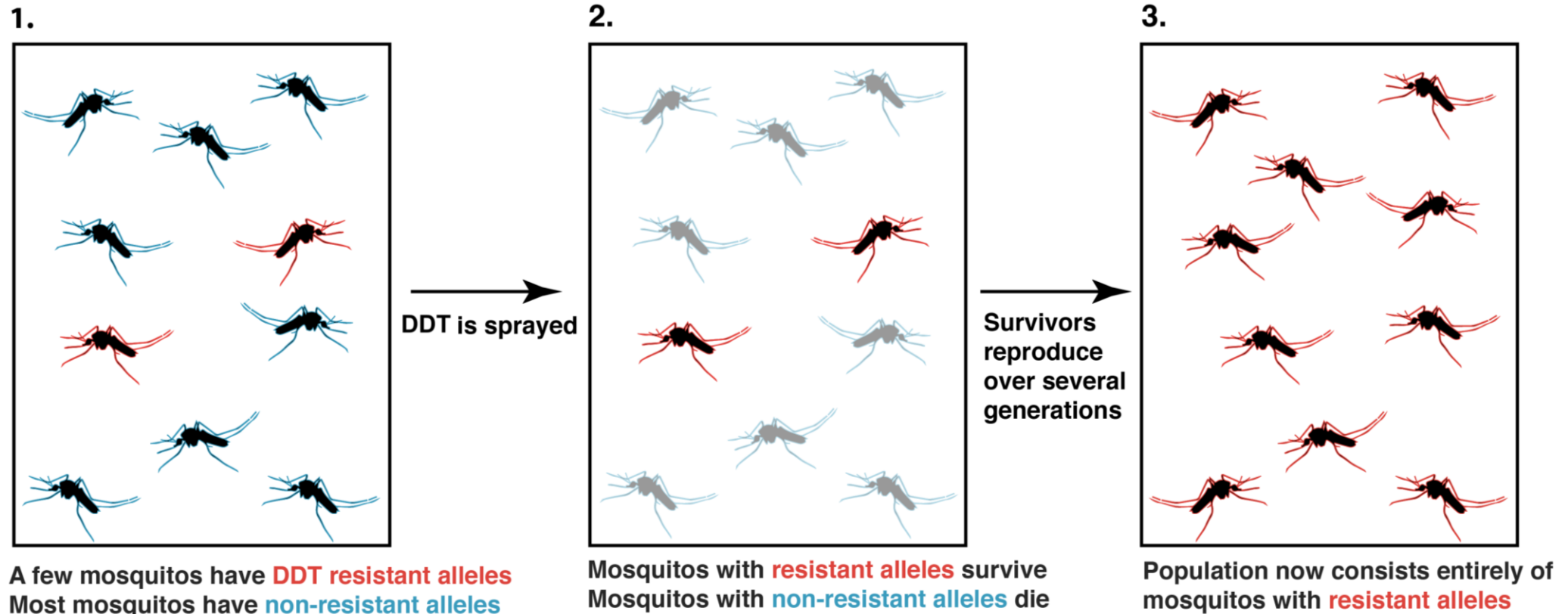
- **First, let’s understand that the the word, “evolution” simply means, “change over time”.**
  - **So, to say that organisms have evolved is simply saying that the life forms we observe today are different from the life forms of the past...in other words, they have changed.**
- **The scientific THEORY of evolution is actually a network of related theories that make up the scientific discipline of biology.**
- **We have overwhelming evidence that life on Earth has gone through significant change.**
  - **Organisms we observed today are different from their ancestors.**
  - **Different types of organisms today probably share common ancestors.**





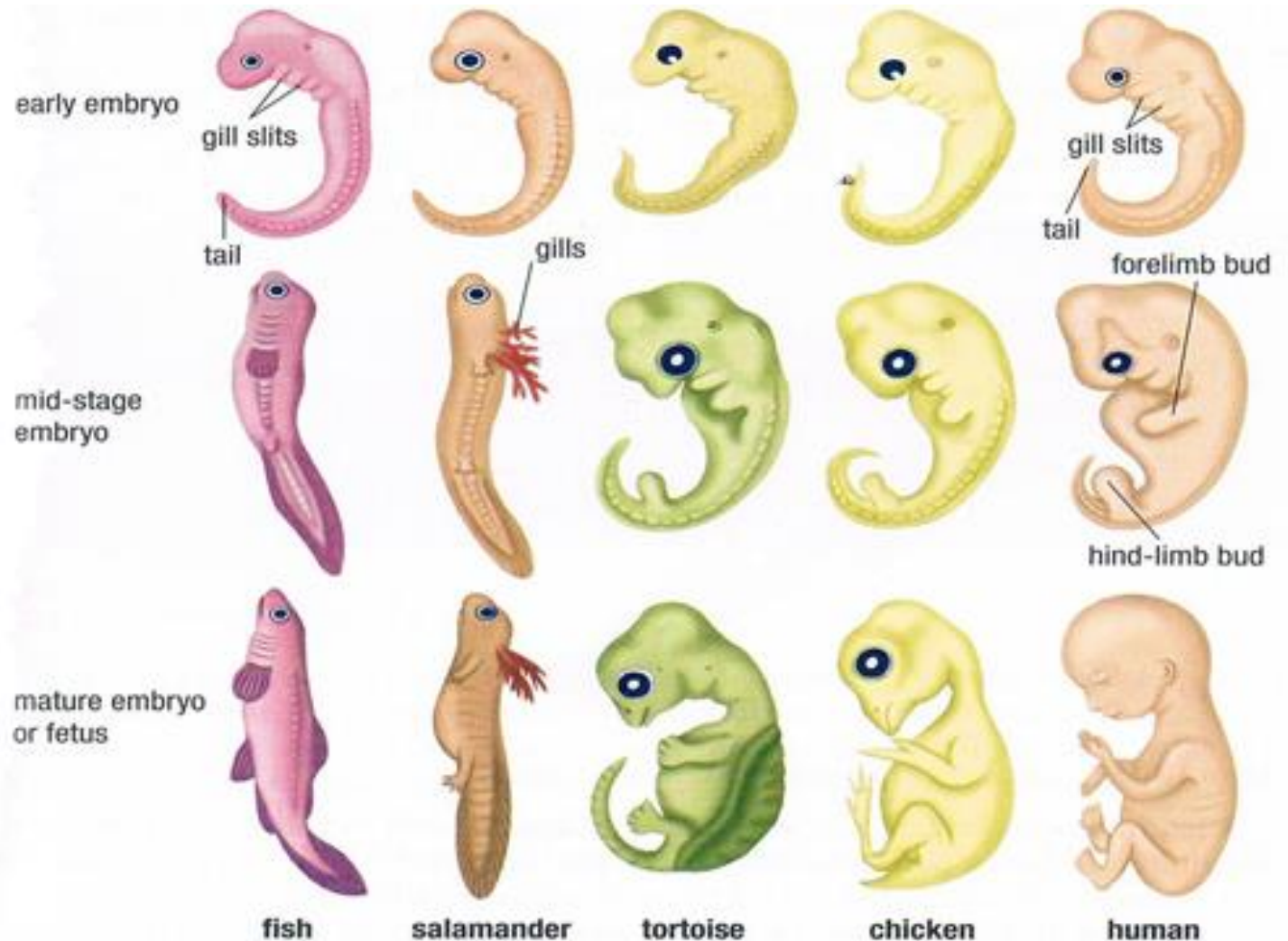
# Evidence from INSECTS & BACTERIA

- Bacteria and insects who ARE NOT immune to an antibiotic or pesticide die off, and the ones who ARE immune reproduce more, changing the species!
- We can observe evolution happening in these organisms.



# Evidence from EMBRYOLOGY (study of embryo development)

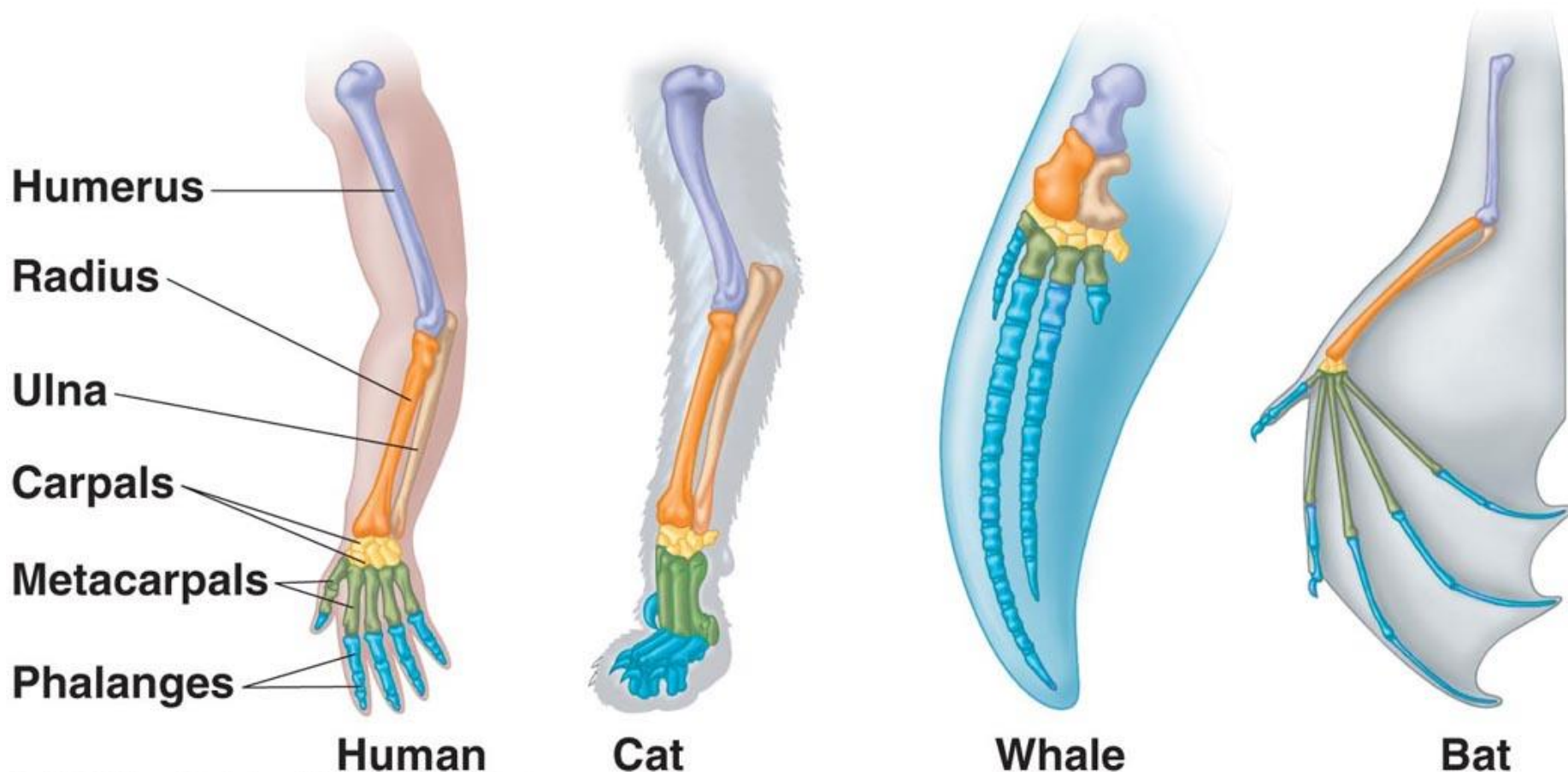
- Embryo – earliest growth stage of an organism
- The embryos of fish, reptiles, birds, and mammals are remarkably similar in the early stages. This suggests an evolutionary relationship among all vertebrate species!





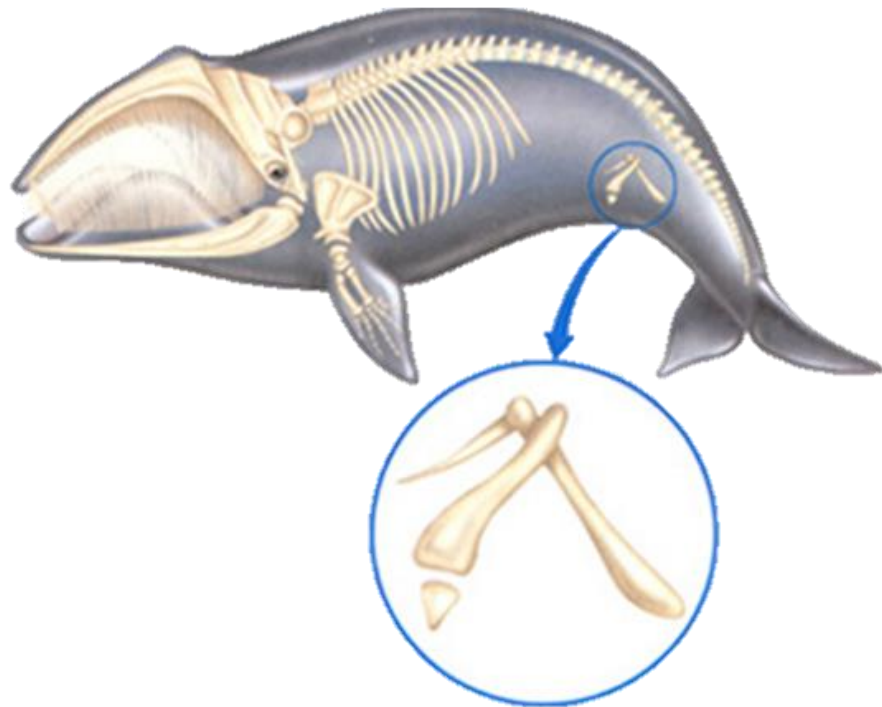
# Evidence from HOMOLOGOUS STRUCTURES

- Homologous Structures – body parts in different species that are similar in structure and suggest a common origin (they share an ancestor).



# Evidence from VESTIGIAL STRUCTURES

- **Vestigial Structures** – body parts in modern organisms that appear to **NOT** have a function
- **Why do manatees, snakes, and whales have pelvic bones if they don't have legs?**



- **Horses have a series of muscles on their heads that allow their ears to move in different directions to better locate sounds...why do humans have the same muscles (*our ears can't do that...*)?**

# Evidence from DNA

- **Similarities in DNA sequences between different species suggest common ancestry.**
  - **The closer the match, the more recent the common ancestor.**

