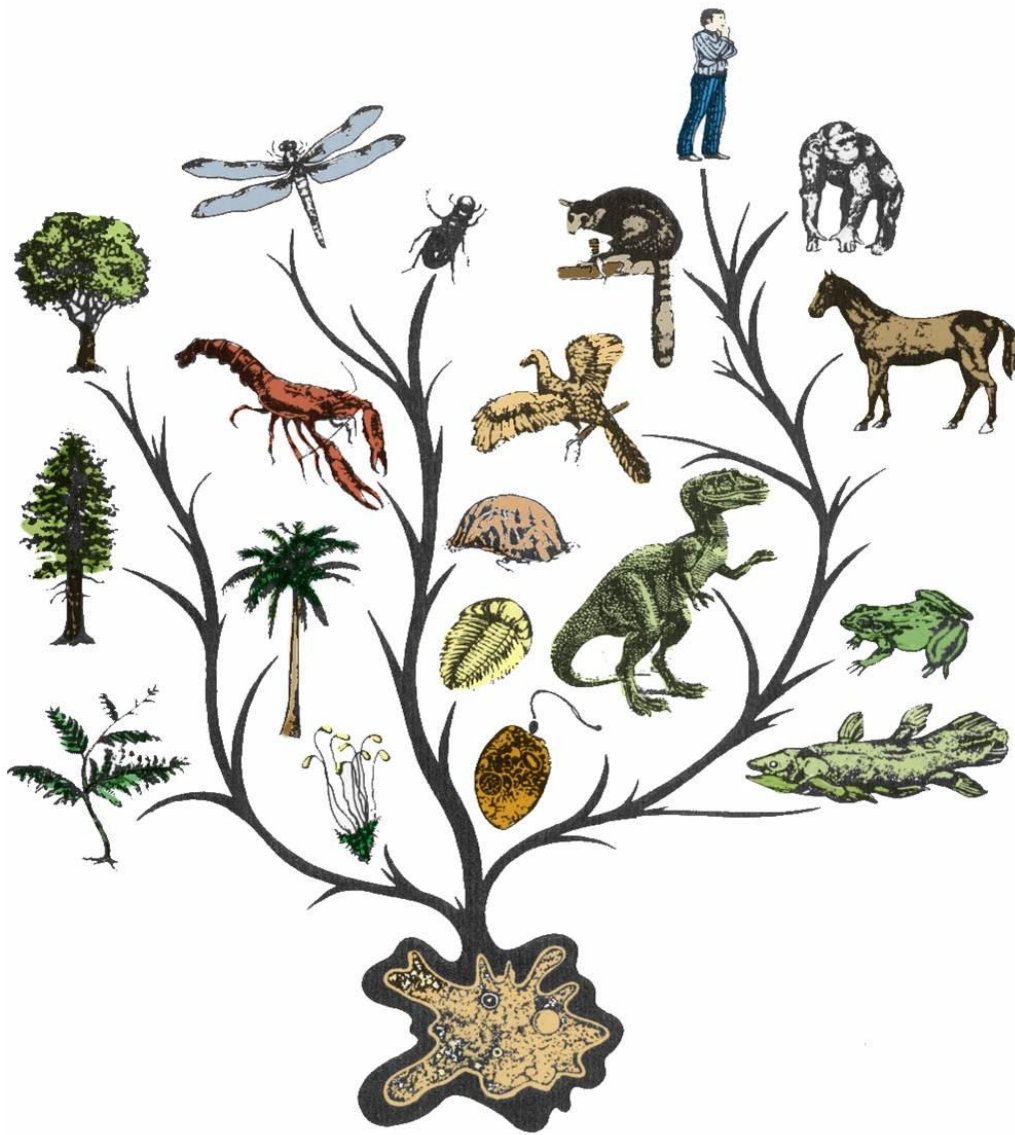
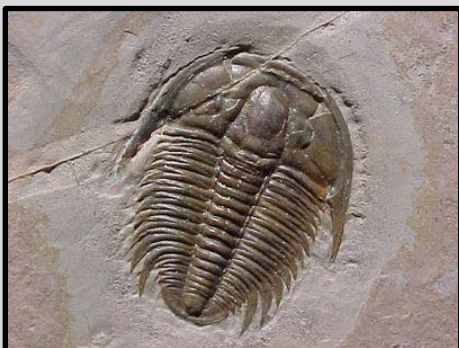


REVIEW: Evolution



Think of EVOLUTION as a tree that shows how organisms have a common ancestry.

Fossils are EVIDENCE of EVOLUTION



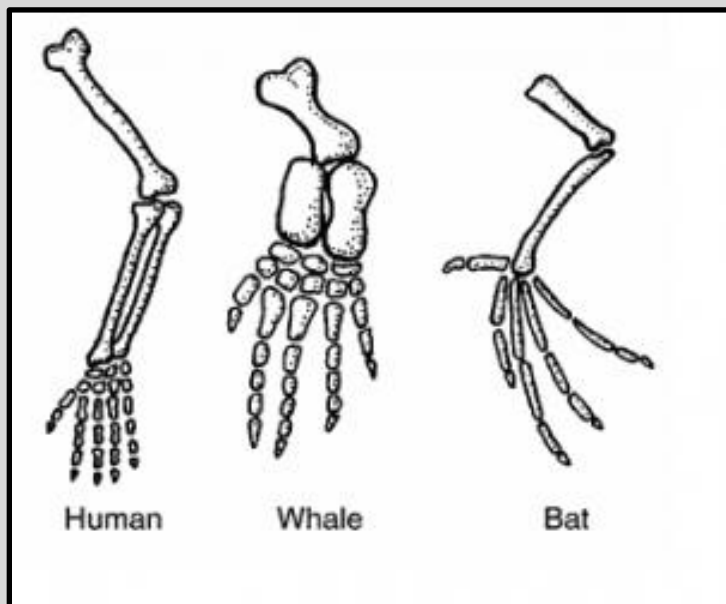
Comparative Anatomy

- Study the STRUCTURES of organisms for SIMILARITY



Homologous Structures

- Structures that have SIMILAR ORIGIN
- May NOT have SAME FUNCTION
- Show COMMON ANCESTRY



Organisms may have:

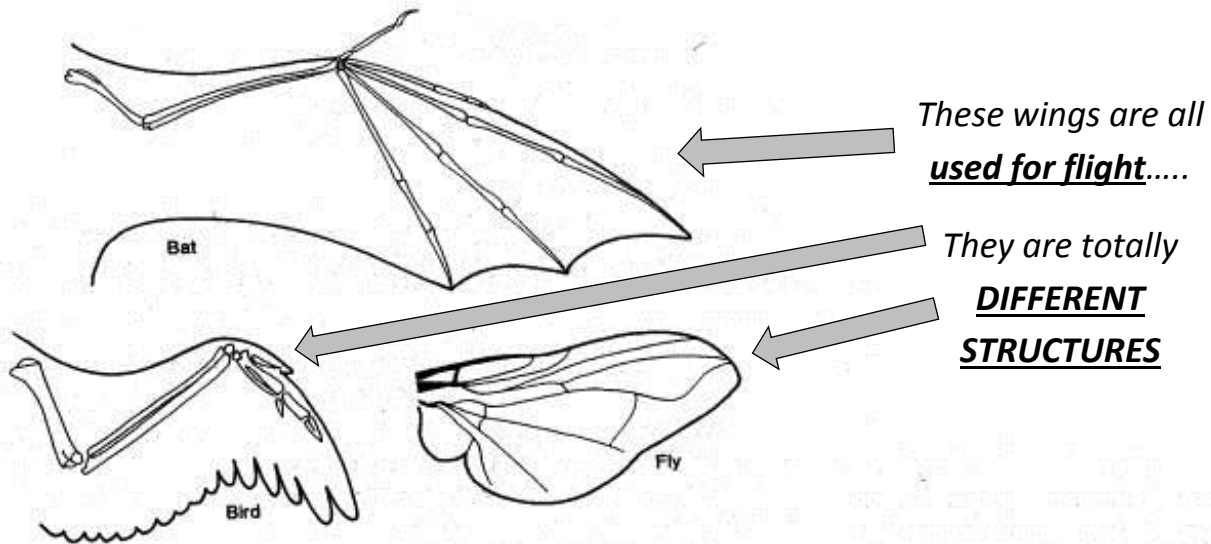
- ✓ the same number of bones
- ✓ the same bone arrangement



ADAPTATION to the environment led to
CHANGES in the STRUCTURES

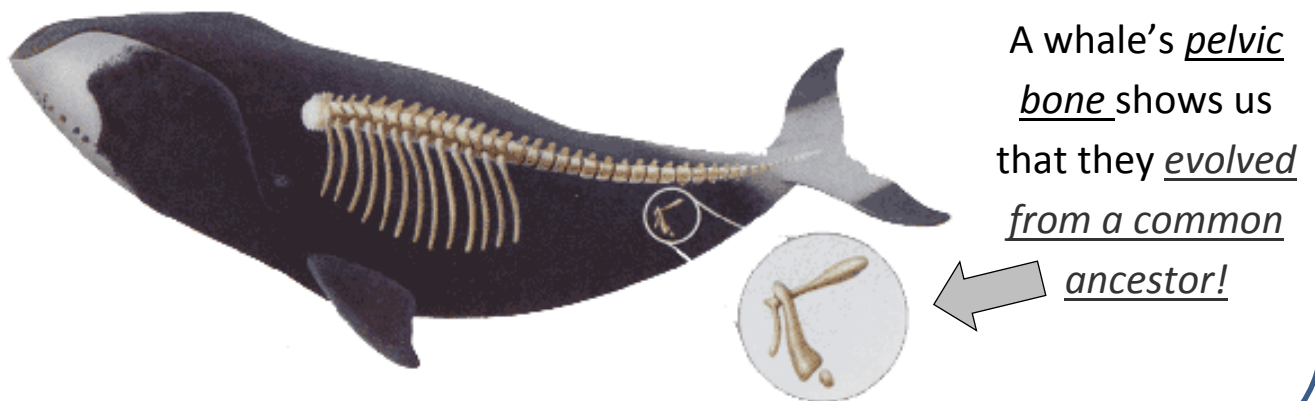
Analogous Structures

- DIFFERENT origins but SIMILAR FUNCTION
- Does NOT show COMMON ANCESTRY



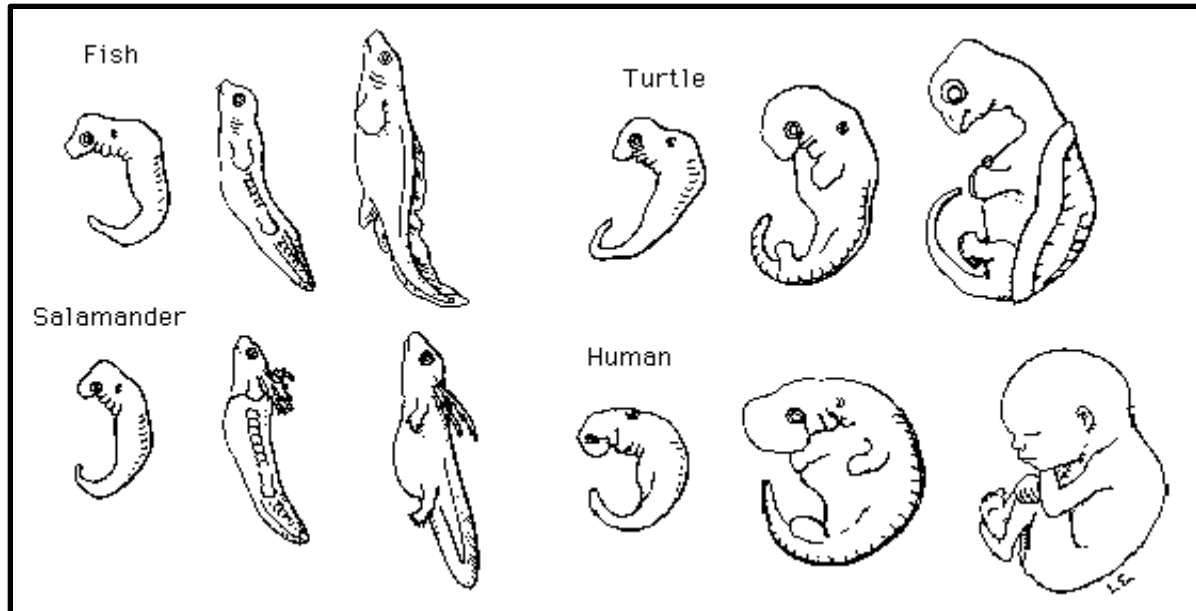
Vestigial Organs

- Parts that once had a function
- Have NO FUNCTION now



Comparative Embryology

- Embryos of DIFFERENT SPECIES develop SIMILARLY
- shows COMMON ANCESTRY

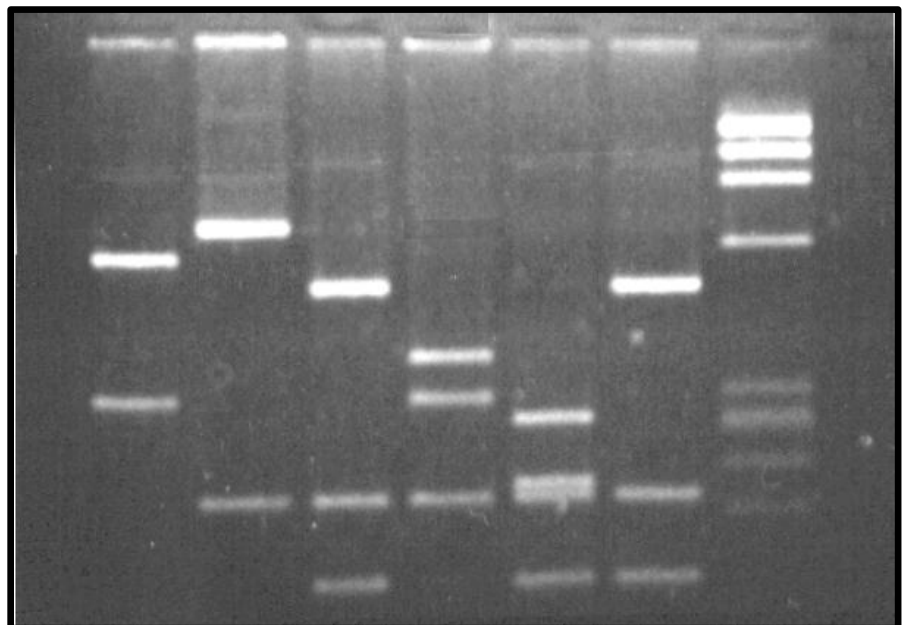
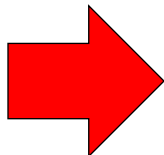


Each of these organisms DEVELOP SIMILARLY.....showing COMMON ANCESTRY!

Comparative Biochemistry

- examine DNA to find relation

The results of a
Gel
Electrophoresis
would allow
you to see a
relation!



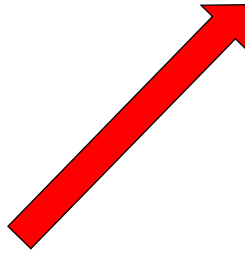
Evidence of Evolution

Structural evidence

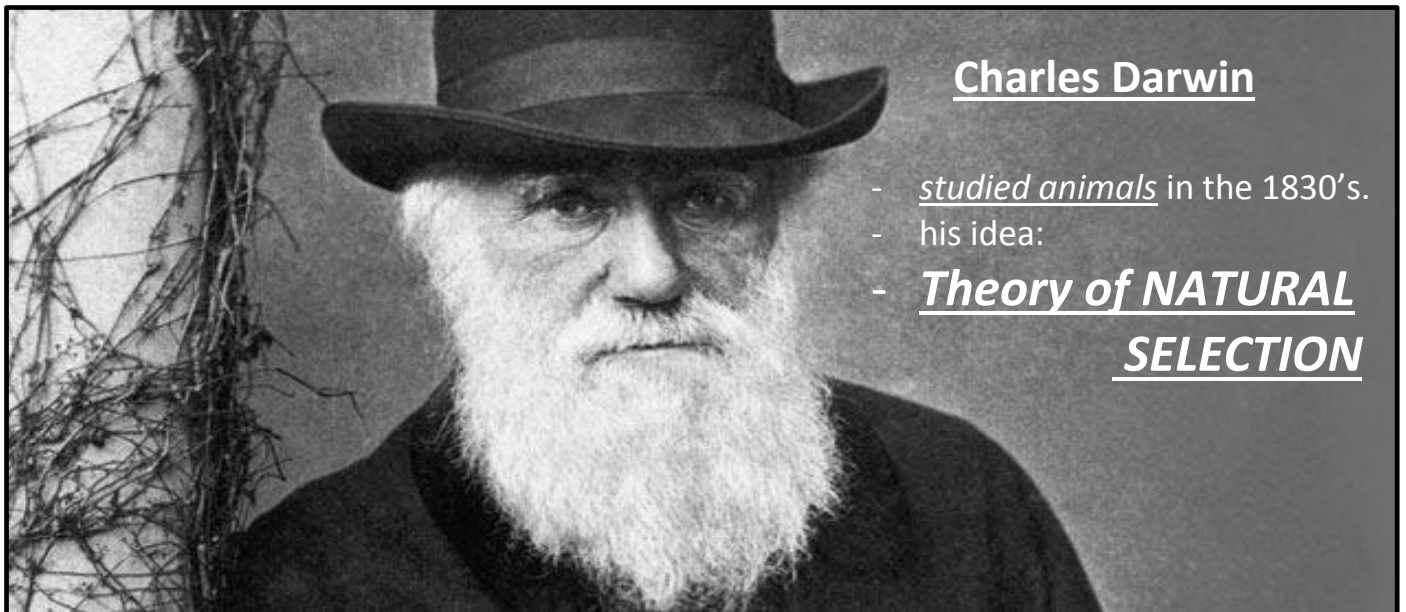
- ✓ Fossils
- ✓ Homologous Structures
- ✓ Vestigial Organs
- ✓ Embryology

Chemical evidence

- ✓ DNA (gel electrophoresis)
- ✓ Amino Acid sequence



CHEMICAL EVIDENCE is the BEST!



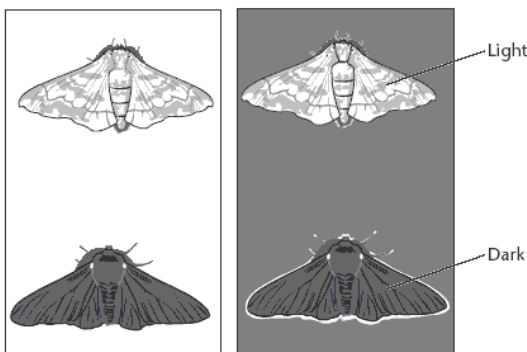
Charles Darwin

- studied animals in the 1830's.
- his idea:
- **Theory of NATURAL SELECTION**

Natural Selection



Better ADAPTED organisms will SURVIVE & REPRODUCE

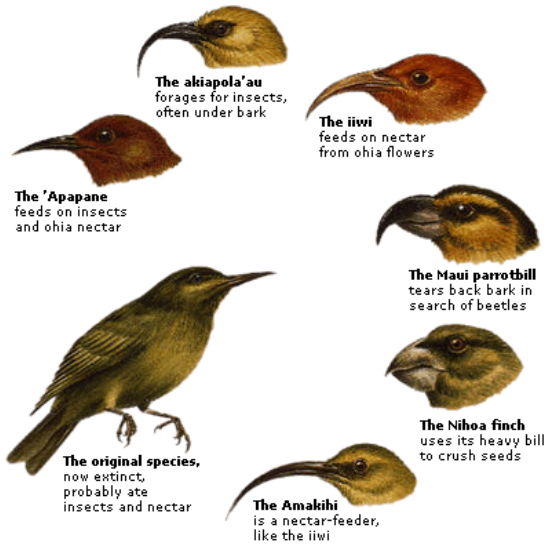


The moth that has better camouflage for its environment was selected for survival.

Adaptations



INHERITED TRAITS that improve
survival & reproduction

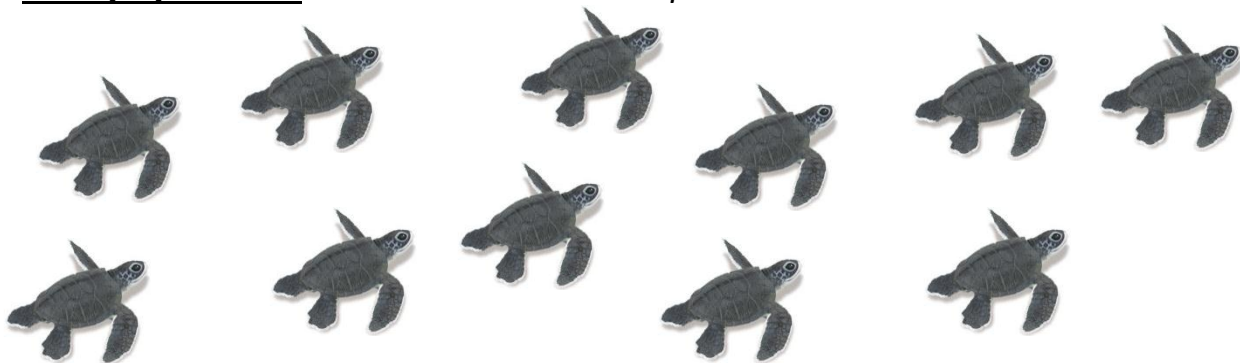


*Each of these birds has
adaptations (type of beak)
to ensure their survival.*



The Best adapted are the BEST COMPETITORS!

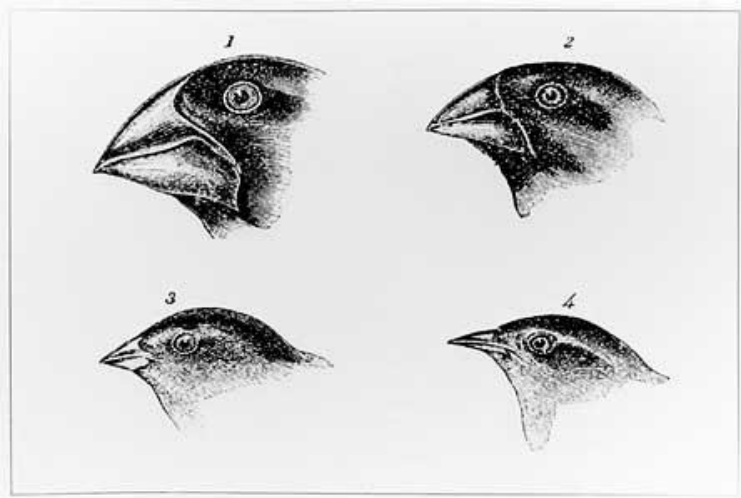
Overpopulation: MORE OFFSPRING are produced that can SURVIVE



When NEW SPECIES arise it is called SPECIATION

Survival of the Fittest

the population with the BEST VARIATIONS
will SURVIVE!



The finch that
adapts to its
environment will
survive!

Sexual Selection

- being choosy about the mate affects the evolution of the population



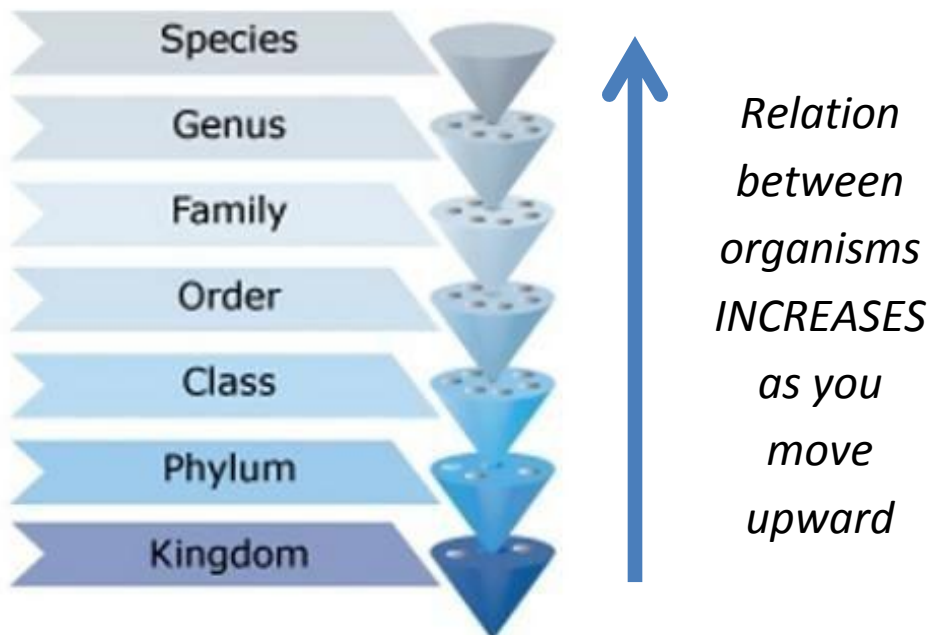
A RANDOM MUTATION can cause a pest to become RESISTANT to PESTICIDE

*I am a
NEW
SPECIES!*



GOOD MUTATIONS can lead to SPECIATION(a new species develops)

Classification



Binomial Nomenclature



Scientific name

The scientific name for HUMANS is Homo Sapiens

this is the GENUS

this is the SPECIES