

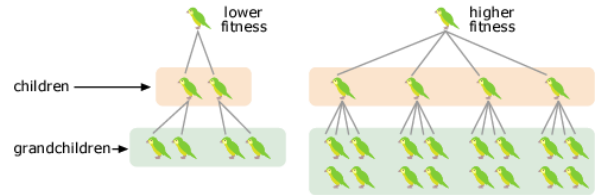
Bio 125 Lecture #6 (2/2/17)

Lecture Quiz 2

- I. Evolution (con't)
 - A. Genetics Basics
 - 1. Fitness
 - 2. Adaptations
 - 3. DNA
 - 4. Chromosomes
 - 5. Genes
 - 6. DNA replication
 - 7. Mutations
 - 8. Sexual reproduction
 - B. Natural Selection
 - C. Evolution
 - 1. Definition
 - 2. Hypothesis vs. Theory
 - 3. Six lines of Evidence for evolution
 - D. Adaptive Radiation: Tree of life
- II. Introduction to Life
 - A. Classification System – 8 levels

➢ Lab field trip to Devereux next week – meet in IV
 ➢ Exam 1 is in 12 days – study daily!

**Evolutionary Fitness:
Contribution to future generations**

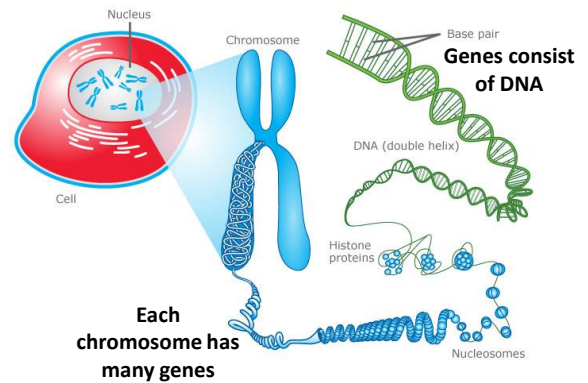


Adaptations:

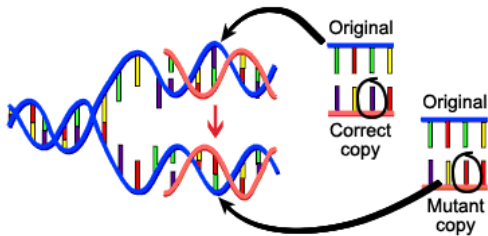
Inherited traits that increase fitness



Traits are passed on by genes

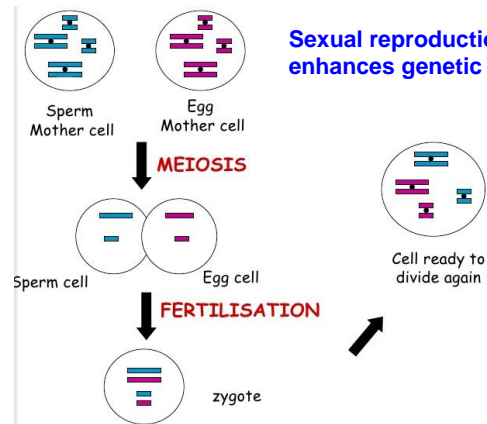


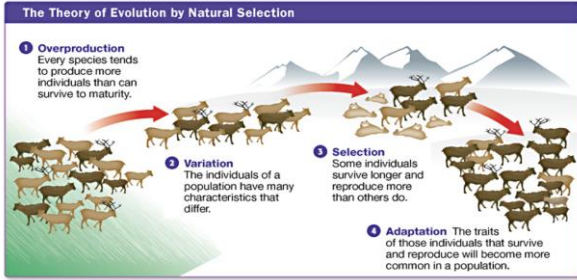
Genetic diversity arises via mutations in DNA



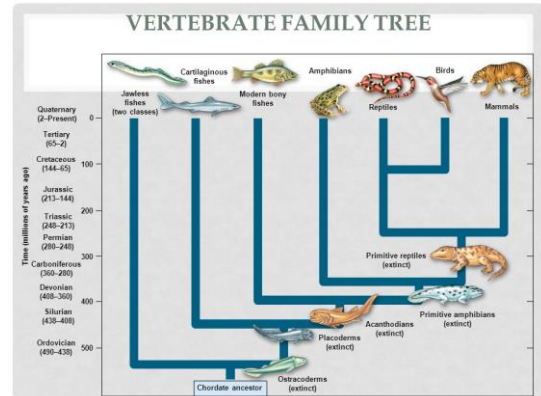
- Mutations caused by:**
- Error during replication
 - Environmental & chemical mutagens

**Sexual reproduction
enhances genetic diversity**





Evolution: descent with modification

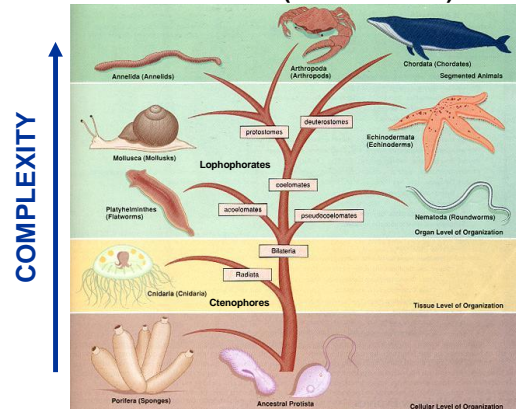


Darwin's theory of Evolution



- Species living today descended from a single ancestral species
 - Descent with Modification

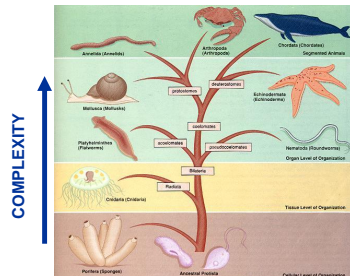
EVOLUTIONARY TREE (TREE OF LIFE)



EVOLUTIONARY TREE (TREE OF LIFE)

'Ancient' / 'lower' animals are no better or worse adapted than 'more complex' / 'higher' animals.

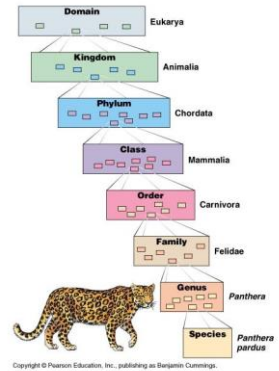
Survival of the 'fittest' (best adapted for their environment)



The Current System of Classification

The current system uses eight taxa:

- Domain
- Kingdom
- Phylum
- Class
- Order
- Family
- Genus
- Species



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Lecture #6 (2/2/17): Study Questions

1. Define fitness.
2. Define adaptation.
3. Define: DNA, chromosome, gene, DNA replication, mutation.
4. List 2 causes of mutations to DNA.
5. Define: allele, homozygous, heterozygous, genotype, phenotype
6. How does sexual reproduction increase genetic diversity?
7. Does natural selection act upon individuals or populations?

Lecture #6 (2/2/17): Study Questions

8. Define evolution. Does evolution act upon individuals or populations (ie, do individuals evolve)?
9. Evolution was initially a hypothesis, but it is now a theory. What does that mean?
10. There are 6 lines of evidence for evolution. List at least 3 of them.
11. What does the Tree of Life illustrate?
12. Briefly describe what the biological classification system does. List the 8 levels of it, in order from most general to most specific.