* Definition of Evolution
  + Factors that contribute to evolution
* Methods of comparing species
  + Paleontology (fossil record), embryology, comparative anatomy, molecular biology, biogeography
  + The components/use of each one of these types of comparisons
* Lamarck’s Theories
* Darwin’s Theories
  + Key Points
  + Supporting factors
  + Be able to describe his research on the Galapagos Islands
  + Buzz words!!!!!!
  + Components that are not accounted for in his research/findings
* Types of evolution
  + Microevolution, Macroevolution, Coevolution, convergent, divergent, parallel
* Understand the following words and how they apply to evolution
  + Genetic drift, mutation, gene flow, founders effect, natural selection, adaptation, acquired resistance, polyploidy, adaptive radiation, neutral variation, bottle neck, nonrandom mating, phenotype, genotype, allele, mutation, hybrid inviability, hybrid sterility, hybrid breakdown
* Types of isolation
  + Reproductive, geographical, habitat, temporal, behavioral, mechanical, gamete
* Types of selection
  + disruptive, stabilizing, directional, sexual, artificial, natural
* Hardy-Weinberg Theorem
  + Be able to use/complete calculations for gene frequencies
  + The 5 guidelines for equilibrium
* Species vs. population
* Types of speciation
  + Allopatric, sympatric, adaptive radiation
    - Balanced polymorphism, polyploidy, hybridization
* Be able to identify/use phylogenic trees
  + Common ancestors, how closely related organism would be on a tree
  + Gradualism vs. punctuated equilibrium
* Heterozygous advantage, hybrid vigor, and frequency-dependent selection (minority advantage)
  + Example of each
* How can antibacterials/insecticides change a population
* Example of moths in the industrialization of England
* Origin of life
  + Primitive organisms allowing for more complex organisms to evolve from them
  + Early atmospheric contributions to the change over time
  + How tectonic plate movement can play a role in the fossil record
  + Miller-Urey experiment
* Endosymbiotic theory
* Fruit flies
  + Life cycle, Virgin females, Test crosses