

BIOLOGY
FINAL SEMESTER 2 STUDY GUIDE

- Know the definitions of adaptation, homologous structures, vestigial structures, mutations, acquired traits, speciation, gene pool, genotypic variation, phenotypic variation, fitness, survival of the fittest, evolution,
- Know what Darwin's finches were and what evolutionary concept they exemplify
- Know what mutations affect inside the body to cause variation or adaptations
- Understand the order of evolution of the skulls we looked at in class
- Be able to determine which organisms are most closely related if given a group of them
- Be able to interpret a cladogram
- Know the different adaptations of each of the different ancestors of humans and how they allowed those humans to live in their environment
- Know all the major characteristics of the 6 Kingdoms we discussed in class use the following terms to describe all 6: heterotrophic, multicellular, no nuclear membrane or nucleus, eukaryotic, prokaryotic, autotrophic, unicellular, cell walls, no cell walls, has a nucleus
- Understand the 7 levels of classification and how organisms are related within and among each group
- Know what a dichotomous key is and how it is used
- Know the difference between eukaryotic and prokaryotic organisms and be able to tell what kingdom organisms in these groups could belong to
- Given a scenario, be able to pick the pedigree that matches
- Be able to pick the correct pedigree with traits mapped on it
- Know the terms pure bred, heterozygous, homozygous recessive, heterozygous recessive,
- Be able to determine the outcome of a cross between individuals with different alleles of a trait (ex: heterozygous with heterozygous, homozygous r with homozygous d, etc.)
- Know what F2 means and be able to determine the probability of having offspring with particular traits using punnett squares
- Know what incomplete dominance is
- Given a pedigree, be able to determine the genotypes of certain individuals on the pedigree
- BE able to identify a chromosomal disorder on a karyotype and be able to determine the sex of the individual in the karyotype
- Given a list, be able to determine which terms in the list are genotypic and which are phenotypic
- Know what the disease sickle cell does to a person with that disorder
- Know what reproductive isolation is and how mating can determine which organisms are different species and which organisms are the same species with different physical variety
- Know the difference between meiosis and mitosis and be able to identify both with pictures
- Know what crossing over is and what it is used for
- Know what causes mutations and how they work
- Know how to determine the coordinating strand of DNA in DNA replication
- Know the products of meiosis and mitosis and how these cells are used (ex. Haploid, diploid, somatic cells, gametes, sex cells, $2n$ and n)
- Know the structure of DNA and how that structure helps to fulfill its function in the body
- Know what happens to cells during fertilization and what happens to the chromosome number in the sex cells and in the new fertilized organism
- Know the 2 types of digestion, what the organs in our body are used for
- Define: gallbladder, pancreas, neurons, central nervous system, peripheral nervous system, brain, arteries, veins, heart attack, stroke, insulin,
- Know what circulatory system, respiratory system, nervous system, digestive system each animal phylum has
- Know the function of all 11 body systems