AP Biology
Student Learning Plan
Evolution Unit 9 - 14 Days
Math skill: Hardy Weinberg equilibrium, histograms (art sel lab)

Student Learning Plan for Evolution

Chapters 20, 21, 22, 23, (skipping 23.5 Ch 24 and Ch 25)

Day/Date	Topic/Objectives	Support
Day 1	Introduction Genetic Variation ☐ Describe the primary source of genetic variation ☐ What factors in a population increase its ability to respond to changes in the environment? ☐ Why can some members of a population respond differently to the same environmental factors? ☐ Describe the range of species in which evolution has occurred	Ch 20.1- 20.4
Day 2	Selection ☐ Explain why metabolic pathways are conserved in evolution ☐ Describe the functional unit of evolution ☐ Explain how natural selection increases reproductive fitness. ☐ Explain how environmental factors can influence traits both directly and indirectly ☐ Describe the link between environmental stress and speciation	Ch 20.6 – 20.9
Day 3	☐ Use the Hardy-Weinberg equations to calculate changes in allele frequency over time. ☐ Describe the conditions necessary to maintain Hardy-Weinberg equilibrium	lab
Day 4	Evidence ☐ Describe the range of dates that correspond to formation of the earth, life being able to exist on earth and earliest fossils and explain why these dates are significant	Ch 21.1 – 21.3
Day 5	Fossils ☐ Use phylogenetic trees and cladograms to represent traits that are either derived or lost due to evolution	Ch 21.4 – 21.5

Day 6	Convergence	Ch 21.6- 21.7
Day 7	Species ☐ Explain how homeotic genes are involved in developmental patterns and sequences ☐ Describe how the process of embryonic induction in development results in the correct timing of events. ☐ Give an example in which an organism's adaptation to local environment reflects a flexible response to the genome. ☐ Explain what causes variation in rates of speciation ☐ Explain how reproductive isolation can lead to speciation ☐ Give specific examples of isolating mechanisms leading to speciation	Ch 22.1 – 22.2
Day 8	Drift and Radiation ☐ Describe the role of five major extinctions in rates of speciation ☐ Describe the evolution of heart chambers in animals ☐ Describe the rate of speciation caused by reproductive isolation	Ch 22.3 – 22.5
Day 9	Extinction ☐ What types of populations are at the greatest risk for extinction ☐ Describe how antibiotic resistance can serve as an example of evolution	Ch 22.6 – 22.7
Day 10	Systemics/Cladistics ☐ Explain why phylogenetic trees and cladograms are described as dynamic	Ch 23.1 – 23.2
Day 11	Phylogenetics ☐ Construct phylogenetic trees and cladograms to show relatedness, morphological similarities, and divergence in DNA and protein sequences	Ch 23.3 – 23.4
Day 12	☐ test	