

J. Mele

Sequencing Rationale for Evolution Unit

Starting this unit of evolution with its biological definition of change of frequency of alleles in a population over time, this ties the previous unit of Genetics where alleles are introduced to this unit. By next giving possible reasons for change as mutations or crossing-over, this too ties the previous unit of genetics to this unit of evolution together. Then the concept of gene pool can be introduced and the calculation of relative frequency of alleles by looking at traits the students in the classroom have so they can relate these terms to themselves and the genetic traits they have. Look at traits that are not only monogenic, but polygenic too so that the students can relate to these terms when discussing types of natural selection in the future. Only after this point should the definition of biological evolution be introduced. The concept of natural selection can then be introduced by examining people or animals that live in opposite areas (country vs. city) and what traits have helped them adapt to that area. Now that students understand what natural selection is, the 3 types can be given to demonstrate what particular types of changes can take place. Natural selection can now be distinguished from genetic drift. Both can also be defined with, along with the remaining conditions to maintain genetic equilibrium (Hardy-Weinberg's Principle). Now speciation formation and isolation types that result in forming new species allows the student to build on the fact that species can change, and also how are they created and survive. This leads well into talking about Darwin and his discoveries of natural selection genetic drift, isolation types and speciation of the different organisms Darwin saw, especially on the Galapagos Islands. Since Darwin also found fossils of organisms that were no longer living in his travels around the world to study nature, it is logical that fossils and geological history of Earth would follow next. Finally, the unit ends with classification of organisms based on their characteristics and ancestors by examining the fossils and grouping by age determined by radioactive and/or relative dating methods.