

Biology
Evolution
2012 - 2013
#3

I. Population Genetics

- Hardy / Weinberg = identified what conditions must be violated in order for evolution to take place
 - populations must be large
 - must not have immigration or emigration
 - must have random mating
 - must not have any mutations
 - must not experience natural selection

A. Mechanisms for evolution

1. **Genetic drift** = the change in the frequency of an allele by a change in the Environment
 - has a large effect on a small population
 - **genetic bottleneck** = after a population crash, the number of available alleles is decreased
2. **Isolation** = separated populations of same species evolve differently
 - **divergence** = accumulations of differences between 2 populations
 - **convergence** = 2 separate populations evolve to be more similar
 - **speciation** = point at which differences between the 2 populations are so great that they can no longer be considered the same species
 - * can no longer mate with each other