Factors in genetic diversity assignment

Factors in Genetic Diversity Genetic diversity is a critical factor in organic science. The higher the genetic diversity the more alleles are presented to a group according to Eldon Anger (2007). These alleles have a profound effect on many aspects of organic development. Genetic diversity effects mutations, sexual reproduction, migration, and even population size. Mutations cause new occurrences to happen in a population. Anger states that these occurrences can be a result of modifications to alleles that are already present or can be new alleles that the mutation introduces (2007).

Either of the two results in a facet of the population becoming transformed. Many of these mutations can be passed along the gene pool making the likelihood of said mutation to occur in future generations. In the theory of evolution this is the root of all diversity on planet earth. Mutations in evolutionary theory are adaptations to the environment an organism lives in. The next aspect of genetic diversity is sexual reproduction. In sexual reproduction the DNA is not infused with any new information the information is Just produced in a different pattern if alleles.

The frequency of distinct alleles may not be changed in this process, but the individual is given a specific set of alleles that is not the same as the parent. Genetic diversity is critical in this process, because the diversity of the parent organisms allows for multiple patterns to be present in the DNA. If the population had no diversity the process of sexual reproduction would Just be replication of the same identical individual and the entire function of sexual reproduction would be pointless. Migration is a key function in genetic diversity.

Migration is when alleles in a certain population move to another group or population Anger points out (2007). This meaner that while one group gains alleles another group may lose them. Without this critical function populations would not have as great an opportunity to diversify. The clearest example I can give to this would be dogs. All dogs have a common ancestor, the wolf. Throughout time the population of wolves, be it by nature or by artificial selection, passed on different traits to a segment of a population.

These animals with the desired traits were then bred with other animals with like traits. This selective breeding used migration to create the hundreds of dog breeds we have today. The last aspect of genetic diversity is population size. Population size plays a critical role in the diversity of the gene pool. If there are few individuals within the population then there is only a limited amount of alleles and patters that can result within that gene pool. The traits that are passed down can be very similar or widely different pending on the population size.