Natural selection and other modes of evolution

**Types of Natural Selection:**

1. Patterns of natural selection: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Sexual selection
* Genetic variability exists in populations and can arise through mutations and \_\_\_\_\_\_\_\_\_\_\_.
* Natural selection acts upon these genetic variations. The environment \_\_\_\_\_\_\_\_\_\_\_ certain traits over others.
* Both \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_ factors (e.g. disease, climate, availability of resources) can affect a population by acting as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pressures.
* Selective pressures can result in different \_\_\_\_\_\_\_\_\_\_\_\_\_ of natural selection.
1. **Patterns of natural section**
* **Directional Selection:**
* Favours individuals with an \_\_\_\_\_\_\_\_\_\_\_\_ variation of a trait, higher or lower than the average
* Results in a shift \_\_\_\_\_\_\_\_\_\_ from the average, towards one \_\_\_\_\_\_\_\_\_\_\_\_
* **Stabilizing Selection:**

* Favours individuals with the population \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a trait
* Individuals with traits that \_\_\_\_\_\_\_\_\_\_\_\_\_ from the average are selected against
* Results in a shift towards the average, away from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_

* **Disruptive Selection:**
* Favours individuals at two \_\_\_\_\_\_\_\_\_\_\_\_\_ of a trait variation
* Can result from an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that favours more than one \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Results in a shift away from the \_\_\_\_\_\_\_\_\_\_\_\_\_, towards both extremes
1. **Sexual Selection**
* Favours individuals with traits that enhance \_\_\_\_\_\_\_\_\_\_\_\_\_\_ success
* These traits may be disadvantageous to \_\_\_\_\_\_\_\_\_\_\_\_\_
* Results in sexual \_\_\_\_\_\_\_\_\_\_\_\_\_\_, and mating and courtship \_\_\_\_\_\_\_\_\_\_\_\_\_

**Evolution without Selection**

Evolution can also be the result of factors which are unrelated to natural selection:

* **Genetic Drift:**
* When individuals mate, the \_\_\_\_\_\_\_\_\_\_ they pass on are chosen by \_\_\_\_\_\_\_\_\_\_
* This chance selection of alleles can result changes in the allele \_\_\_\_\_\_\_\_\_\_\_\_\_ of a population
* Genetic drift is more prevalent in \_\_\_\_\_\_\_\_\_\_\_ populations
* **Genetic Bottlenecks:**
* An extreme reduction in the \_\_\_\_\_\_\_ of a population that results in genetic drift and a decrease in genetic diversity
* The new smaller population might not contain the same ­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_ or frequency of alleles as the original population
* **Founder Effect:**
* A small group of individuals \_\_\_\_\_\_\_\_\_\_\_\_\_ from the original population
* Results in genetic drift and a \_\_\_\_\_\_\_\_\_\_\_\_ in genetic diversity
* The new smaller population might not contain the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_ or frequency of alleles as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ population

**The Hardy-Weinberg Principle:**

* Evolution is the \_\_\_\_\_\_\_\_\_\_\_\_ in the genetic makeup (or gene pool) of a population over \_\_\_\_\_\_\_\_\_
* A gene pool can be thought of as the \_\_\_\_\_\_\_\_\_\_\_\_\_ of alleles within a population
* Any factor that causes changes in allele frequencies can lead to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The Hardy-Weinberg Principle: In large populations in which only random chance is at work, allele frequencies are expected to remain \_\_\_\_\_\_\_\_\_\_\_ from generation to generation