

THE PRESENT THEORY OF NATURAL SELECTION



1. The **GENE POOL** is the total of all the _____ of a population of a species in a given _____. The gene pool includes genes for both better-adapted and poorly-adapted _____. The gene pool has **genetic variation** as a result of:
 - ◆ **Mutations**
 - ◆ **Chromosomal changes during meiosis and mitosis**
 - ◆ **Variations of combinations of gametes in sexual reproduction**
2. **GENE FREQUENCIES** are the frequencies or numbers of genes of particular types in a population. Gene frequencies alter because of 3 factors:
 - ◆ **Migration into or out an area**
 - ◆ **Isolation**
 - ◆ **Adaptation**
3. **ISOLATION** is of 3 types:
 - ◆ **Geographic Isolation** (e.g. birds on different _____, wind-pollinated plants on different sides of a mountain, continental drift)
 - ◆ **Behavioural Isolation** (e.g. _____ and diurnal feeders)
 - ◆ **Reproductive Isolation** (i.e. a social or structural difference that prevents mating)

4. **ADAPTATIONS** are characteristics possessed by an organism that causes it to be better suited or better able to _____ and reproduce in its surroundings. Adaptations may be:
- ◆ **Structural Adaptation** (e.g. streamlined shape of _____)
 - ◆ **Physiological Adaptation** (e.g. hibernation of _____ in cold climates)
 - ◆ **Colour Adaptation** (e.g. _____)
 - ◆ **Behavioural Adaptation** (e.g. nocturnal feeders in hot climates)
 - ◆ **Reproductive Adaptation** (e.g. peacock's fanning display to attract a _____)

Organisms with better-adapted characteristics will breed, passing the better-adapted gene to future generations, and _____ the gene frequency of the better-adapted gene.

Organisms that are poorly-adapted will breed less if at all, reducing the gene frequency of the poorly-adapted gene, possibly to the point of **extinction**.

5. **SPECIATION** - New species that can no longer _____ with the original species develop over time in different areas.