

This is the **Higher Separate** version — includes all Higher Tier content (marked ★) and all Separate Science content.

Speciation is the formation of a new species through the accumulation of genetic differences between isolated populations.

- Geographic isolation: population split by barrier (mountain, sea, river)
- Two populations now evolve independently under different selection pressures
- Different mutations arise; different alleles selected for
- Over many generations: genetic differences accumulate
- Eventually: populations can no longer interbreed to produce fertile offspring → different species
- Example: Galapagos finches — different islands, different food sources, different beak adaptations

Key Terms

Speciation	Formation of a new species through reproductive isolation and genetic divergence
Reproductive isolation	Inability of two populations to interbreed successfully

■ **Exam Tip:** Speciation requires: ISOLATION → DIFFERENT SELECTION → GENETIC DIVERGENCE → UNABLE TO INTERBREED. All four ideas must appear for full marks in a 4-6 mark question.