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

Evolution by natural selection explains how species change over time and how new species arise.

- 1. Variation in population (mutations, sexual reproduction)
- 2. Competition for limited resources
- 3. Better-adapted individuals survive and reproduce more
- 4. Advantageous alleles inherited by more offspring
- 5. Over generations, allele frequency changes → population evolves
- Evidence: fossil record, DNA comparisons, antibiotic resistance, comparative anatomy
- Speciation: geographic isolation → independent evolution → populations cannot interbreed → new species

Key Terms

Natural selection	Mechanism of evolution — better-adapted survive and reproduce
Speciation	Formation of new species through reproductive isolation
Adaptation	Inherited feature improving survival/reproduction in an environment

■ **Exam Tip:** For natural selection: all 5 steps needed for full marks. Use the words: VARIATION, COMPETITION, SURVIVE, REPRODUCE, INHERIT. Evolution is the result — not the cause.