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

Natural selection is the mechanism that drives evolution. It acts on existing variation to change allele frequencies over generations.

- 1. Variation exists (from mutations and sexual reproduction)
- 2. Competition for limited resources
- 3. Best-adapted individuals survive and reproduce more
- 4. Advantageous alleles passed to more offspring
- 5. Frequency of beneficial alleles increases over generations
- Evidence: fossil record, DNA comparisons, antibiotic resistance, comparative anatomy
- Darwin and Wallace: independently proposed natural selection — Darwin published first (1859)

Key Terms

Natural selection	Better-adapted individuals survive and reproduce → allele frequencies change
Adaptation	Inherited feature improving survival/reproduction in environment

■ **Exam Tip:** 5 steps: Variation → Competition → Survival → Inheritance → Change over time. You need all five. Do NOT say organisms "try to adapt" — mutations are random, selection acts on existing variation.