

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

OCR requires understanding of both mitosis (for growth) and meiosis (for reproduction).

- Mitosis: produces 2 genetically IDENTICAL diploid cells — for growth and repair
- Meiosis: produces 4 genetically DIFFERENT haploid cells — for sexual reproduction (gametes)
- Before mitosis: DNA replicates. Chromosomes separate. Cytoplasm divides.
- ★ HT Meiosis creates variation through crossing over and independent assortment
- Stem cells: undifferentiated cells that can divide and specialise — embryonic (any type) and adult (limited types)

Key Terms

Mitosis	2 identical diploid cells — growth, repair
Meiosis	4 different haploid cells — gametes for sexual reproduction
Stem cell	Undifferentiated cell that can divide and differentiate

■ **Exam Tip:** Mitosis = identical, diploid (same chromosome number). Meiosis = different, haploid (half chromosome number). Always know which is which.