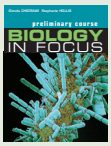
EVOLUTION OF AUSTRALIAN BIOTA

Chapter 3 Reproduction and continuity of species



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Differences between mitosis and meiosis

- ***analyse information from secondary sources to tabulate the differences that distinguish the processes of mitosis and meiosis***

TRCD4.1 A comparison of mitosis and meiosis

	Mitosis	Meiosis
Type of cells in which it occurs	In **somatic** (body) cells for growth and repair of tissue, replacement of dead cells and asexual reproduction	In cells of **sexual reproductive** organs to produce gametes (sex cells)
Number of divisions and resulting daughter cells	**Single division** resulting in the formation of two **genetically identical diploid** daughter cells	**Two successive divisions** resulting in the formation of four daughter cells (tetrad), each of which is **haploid** and **genetically different**
Chromosome behaviour in the early stages of division—prophase	Replicated chromosomes separate out, but do not form homologous pairs; there is no crossing over and no variation introduced	Replicated chromosomes separate out into **homologous pairs** (bivalents) which undergo **crossing over**—they exchange genetic material which increases variation
Chromosome behaviour in anaphase (first division)	**Chromatids** separate and move to opposite poles	In first anaphase, chromatids remain attached; **one entire chromosome** of each homologous pair is pulled towards a pole
End of cytokinesis	**Two cells** produced with **identical** chromosomes to each other and identical to the original cell	End of cytokinesis II, **four cells** are produced; each has **half** the original number of chromosomes and they are **not genetically identical** to each other