		MITOSIS	MEIOSIS I
PROPHASE	Chromosomes	After DNA replication in S Phase, **condensation of chromatin** to visible **Duplicated chromosomes**	
	Spindle Fibres	Formation of spindle fibres	
	Cell	Breakdown of nuclear membrane and nucleolus	
	Chrom. No.	2n	
	DIFFERENCE		Chromosomes paired up together in **homologous pairs**
			SYNAPSES: **non-sister chromatids** of **homologous** chromosomes "cross-over" at **chaisma**, resulting in **exchange of genetic material → GENETIC VARIABILITY**
METAPHASE	Chromosomes	Chromosomes migrate to **equator of spindle**	
	ALIGNMENT	**SINGLE** chromosomes lined up on **single metaphase plane**	**INDEPENDENT ASSORTMENT**: Homologous chromosomes aligned **randomly** on metaphase plane, line up in **PAIRS**
	Spindle Fibres	Attached to **kinetochore** of chromosomes	Attached to each **chromosome** in the pair
	Chrom. No.	2n	
ANAPHASE	Chromosomes	**Duplication** of **centromeres**; each **chromatid** moves to **opposite** poles and **separate**	**REDUCTION DIVISION: Separation** of homologous chromosomes to **opposite** poles such that future **daughter cell** receives **one chromosome** from **each pair**
	Spindle Fibres	**Shorten** as chromosomes separate	
	Chrom. No.	**2n – but twice the no. of chromosomes**	**2n**
		This stage **REQUIRES ATP!!!**	
TELOPHASE	Chromosomes	Chromosomes reach respective poles, **decondense** and lengthen into **chromatin threads** again	
	Spindle Fibres	**Disintegrate**	
	Cell	Nucleus **divides** into **2 haploid** nuclei Nuclear **envelope reforms** around chromosomes at each pole	
	Chrom. No.	**2n – but twice the no. of chromosomes**	**2n**
CYTOKINESIS	Cells	**Physical splitting** of cells into **2 DAUGHTER CELLS** **DNA content** in each cell divides by **HALF**	
	Chrom. No.	**2n PER CELL**	**n PER CELL**

*Meiosis II = MITOSIS, except that:

- Prophase chromosome no. = **n**
- Telophase: in total, **2 haploid** nuclei → **4 HAPLOID NUCLEI**
- Cytokinesis: Split into **4 DAUGHTER CELLS, each with n** number of chromosomes