

Cell Division: Mitosis and Meiosis

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Mitosis and Meiosis

- **Mitosis**

- a vegetative division, whereby each daughter cell is genetically identical to the parent cell
- division of **somatic** (body) cells

- **Meiosis**

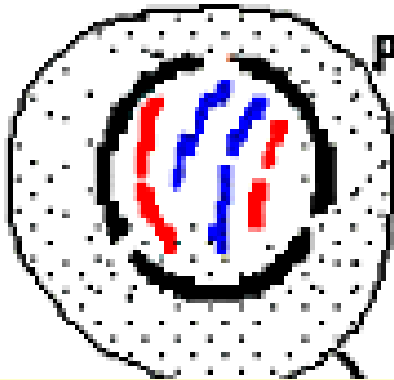
- a reproductive cell division, whereby the number of chromosomes in the daughter cells is reduced by half to produce haploid gametes.
- division of **gametes** (sex cells)

Mitosis

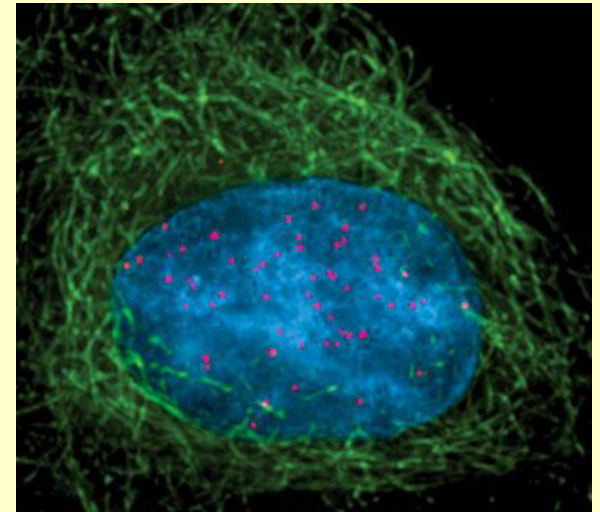
- Interphase
- Prophase
- Metaphase
- Anaphase
- Telophase

Interphase

- **Interesting** things happen!
 1. Cell preparing to divide
 2. Genetic material doubles

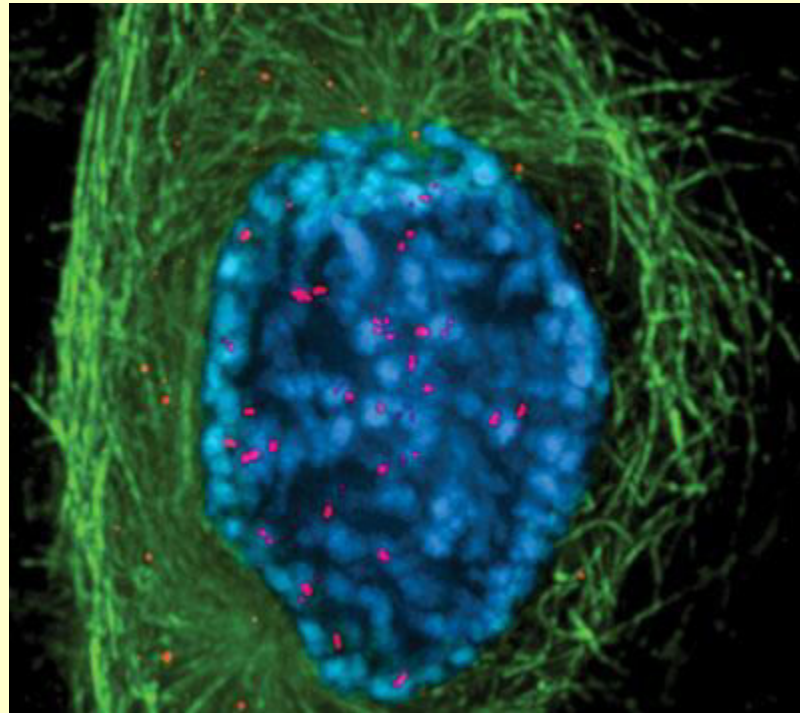


Parent cell

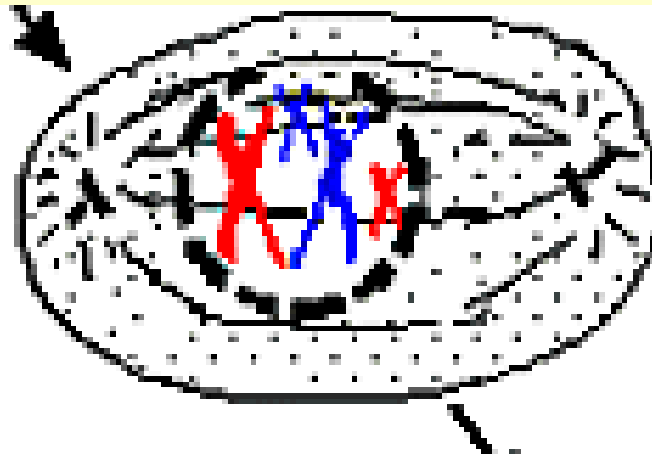


Prophase

- Chromosome **pair up!**
 1. Chromosomes thicken and shorten
 - become visible
 - 2 **chromatids** joined by a **centromere**
 2. **Centrioles** move to the opposite sides of the nucleus
 3. **Nucleolus** disappears
 4. Nuclear membrane disintegrate



Prophase

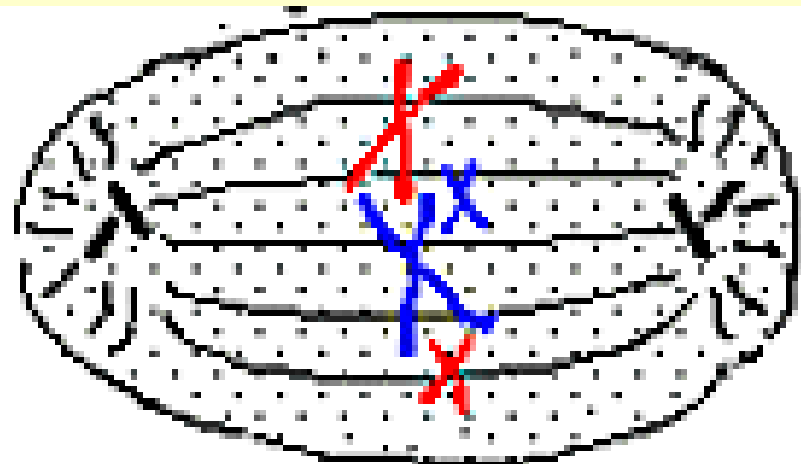


Metaphase

- Chromosomes **meet in the middle!**
 1. Chromosomes arrange at **equator** of cell
 2. Become attached to **spindle fibres** by **centromeres**
 3. **Homologous chromosomes do not associate**



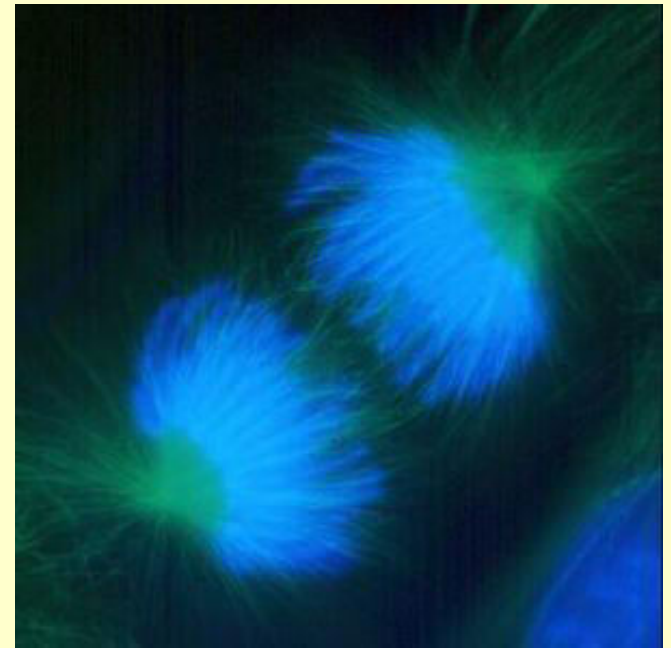
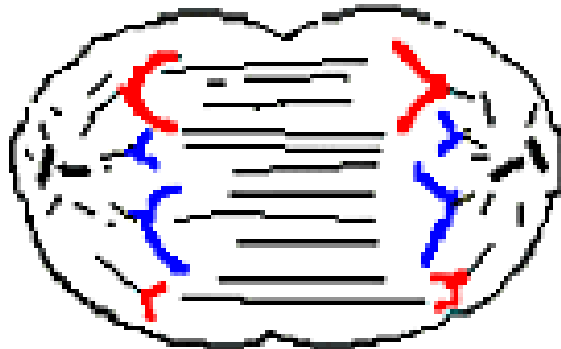
Metaphase



Anaphase

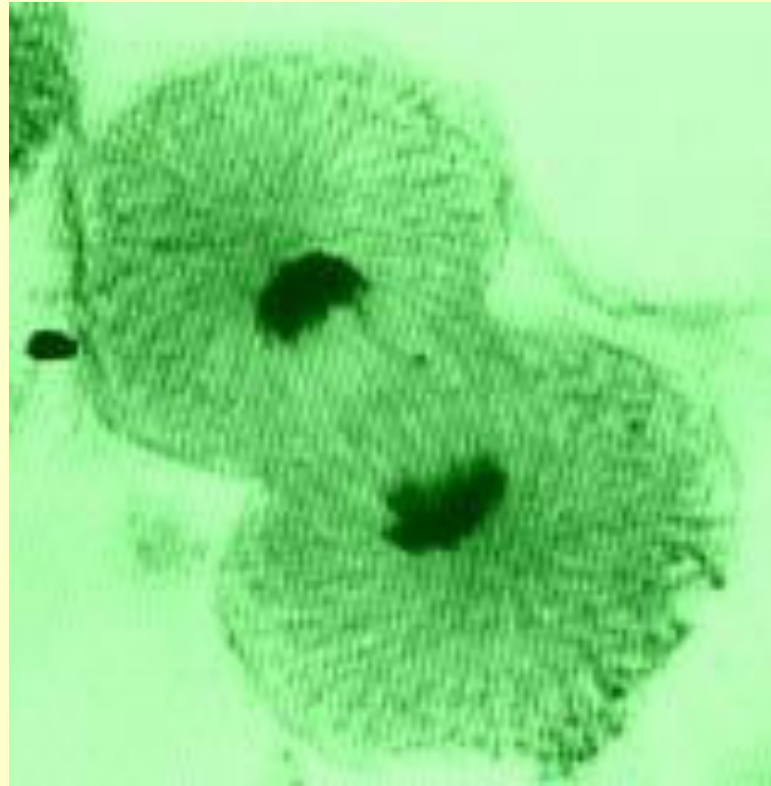
- Chromosomes get pulled **apart**
- 1. Spindle fibres contract pulling chromatids to the opposite poles of the cell

Anaphase

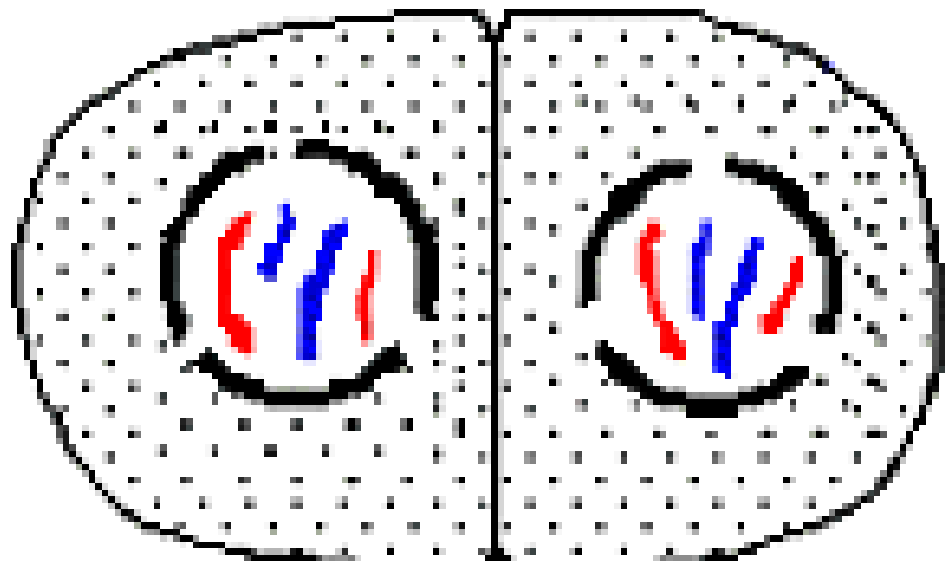


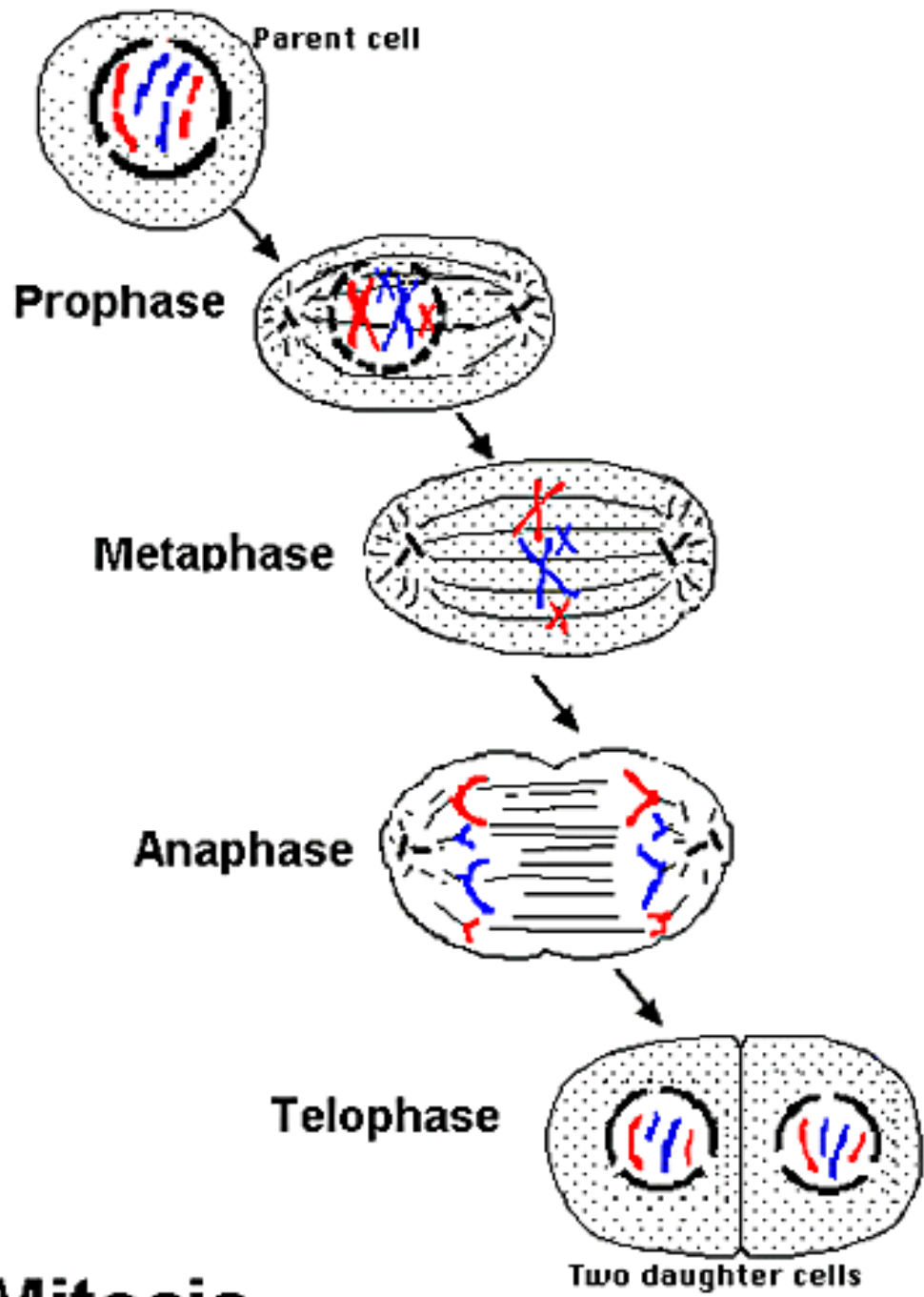
Telophase

- Now there are **two!**
 1. Chromosomes uncoil
 2. Spindle fibres disintegrate
 3. Centrioles replicate
 4. Nuclear membrane forms
 5. Cell divides

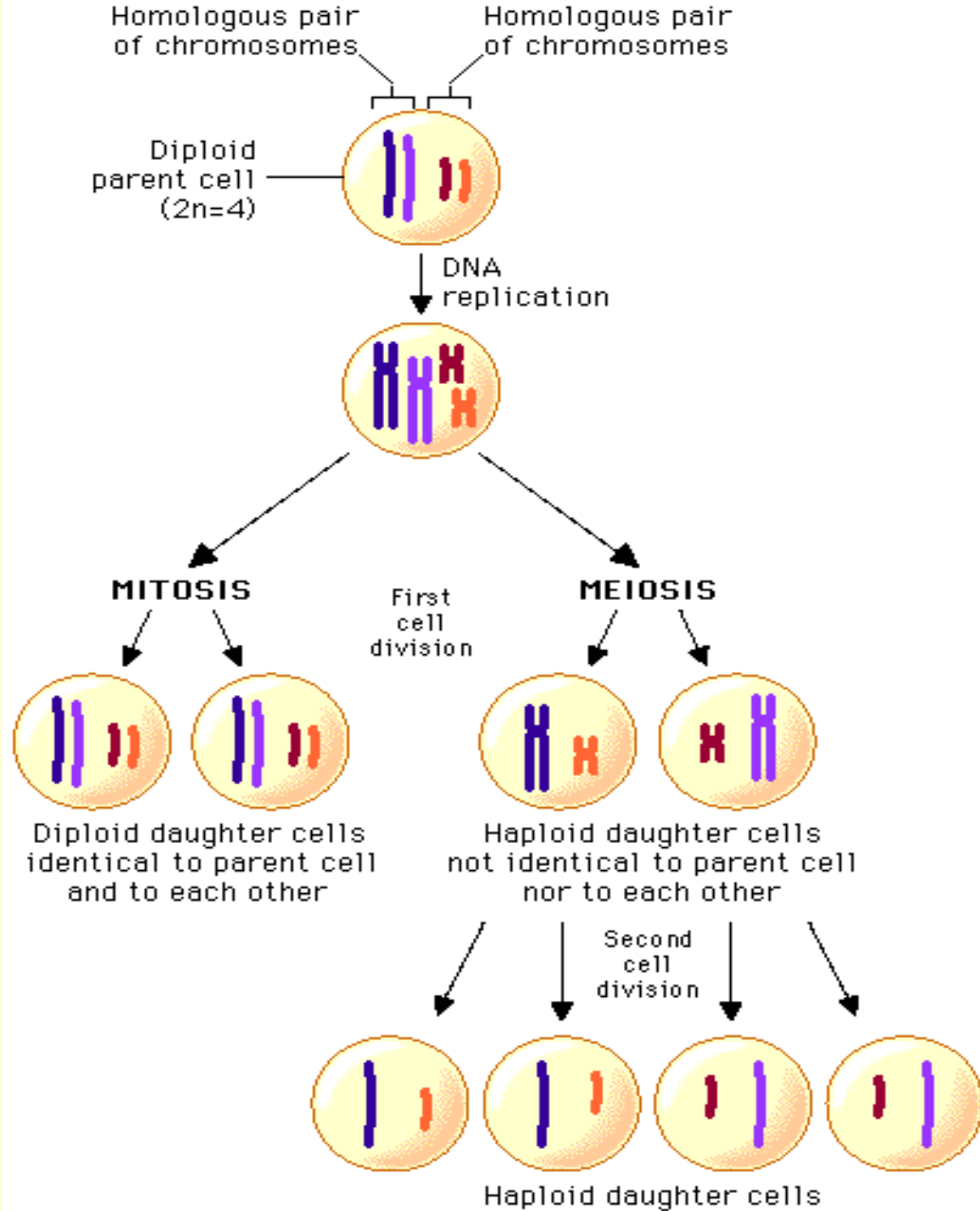


Telophase





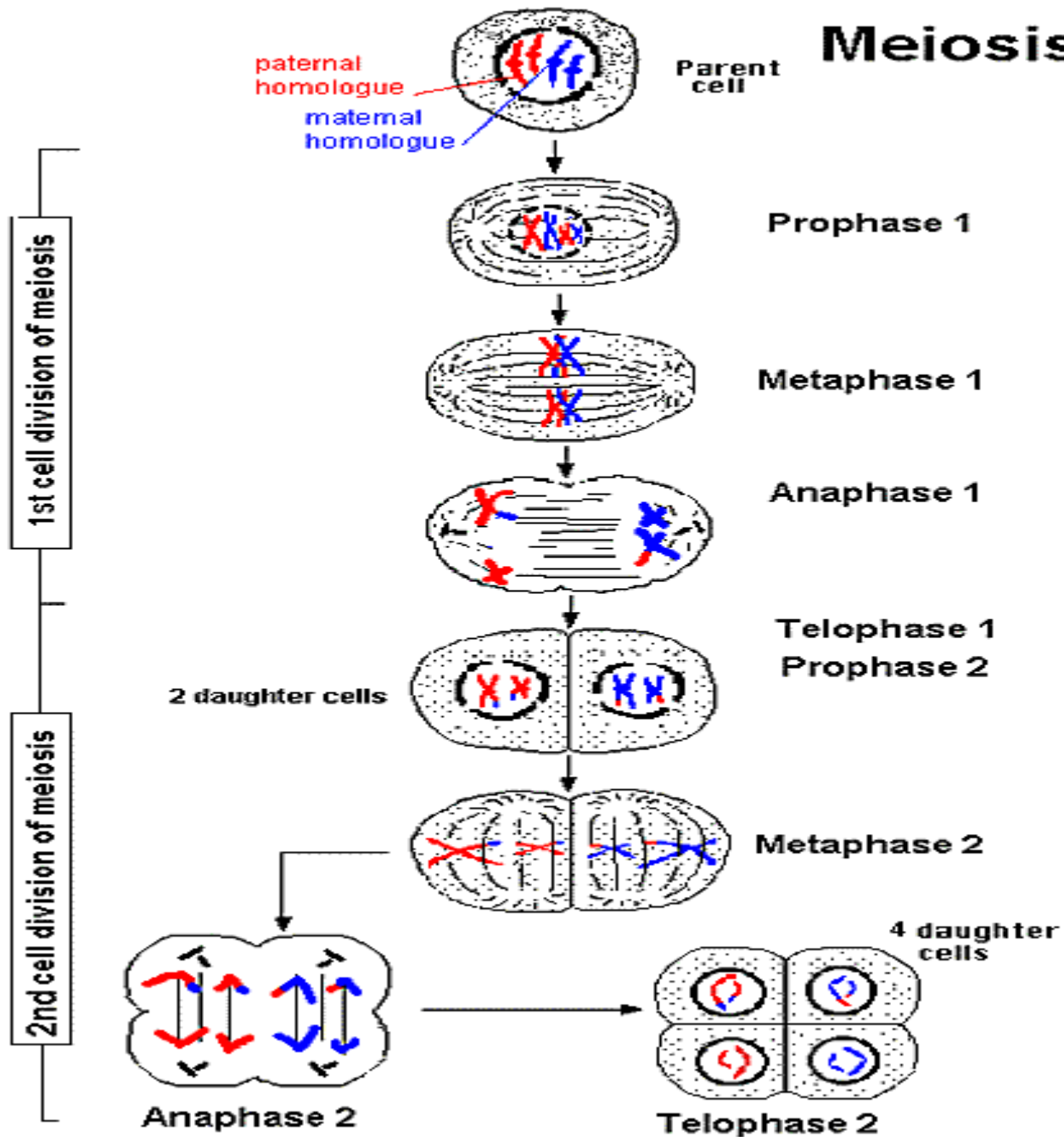
Mitosis



Meiosis

- 4 daughter cells produced
- Each daughter cell has half the chromosomes of the parent
- 2 sets of cell division involved

Meiosis



Thank
you
for
not
Sleeping

