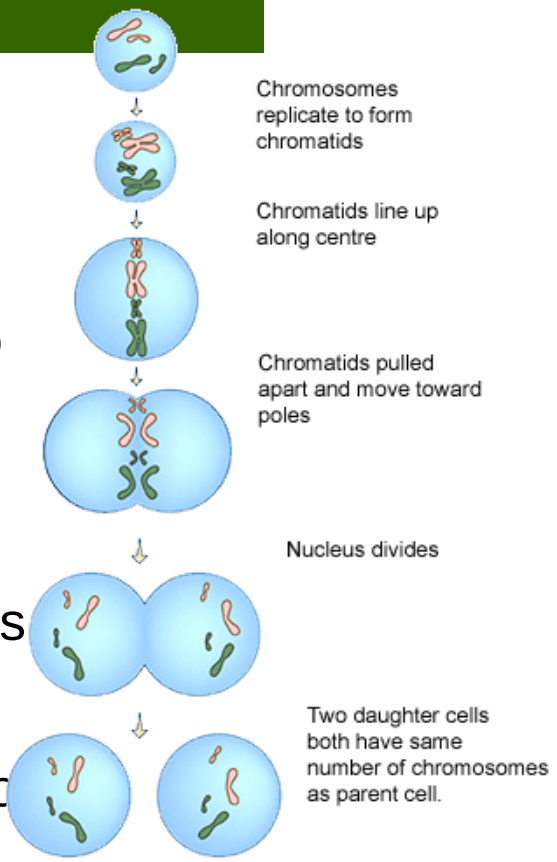
Mitosis

Biology

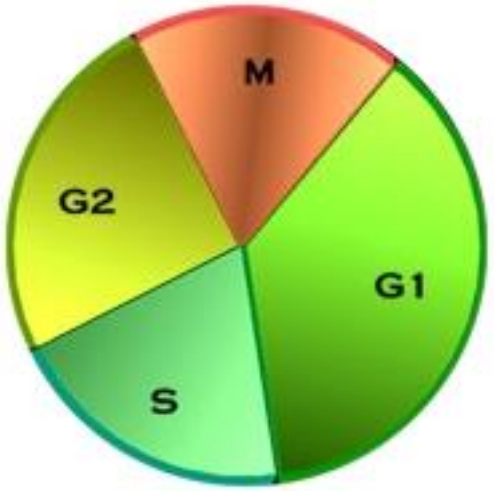
Overview

- Cell division requires each cell to have an identical copy of DNA
- DNA is organized into chromosomes
- Before mitosis, DNA is replicated (copied!) so chromosomes are doubled into “sister chromatids”
- During mitosis, sister chromatids split – each new cell gets one sister chromatid
- Mitosis happens only for “somatic” cells – cells that make up the structures in each individual organism.
- For reproduction, a different type of cell divisio is necessary



Interphase

- Happens Before mitosis
- Cell prepares to divide by
  - Geting bigger
  - Replicating DNA

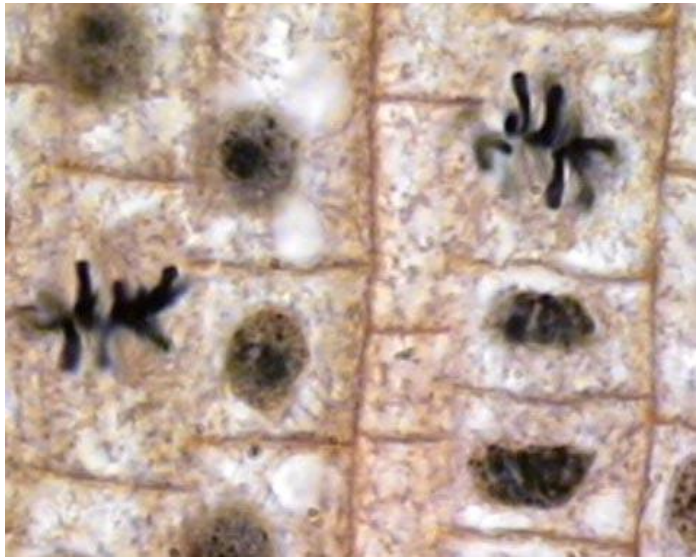


Prophase

- DNA starts to condense (become visible) into chromosomes
- Nuclear envelope starts to break up
- Centrioles send out spindle fibers and attach to each sister Chromatid

Metaphase

- Chromosomes line up in the center of the cell
- One sister chromatid on each side of the center



Anaphase

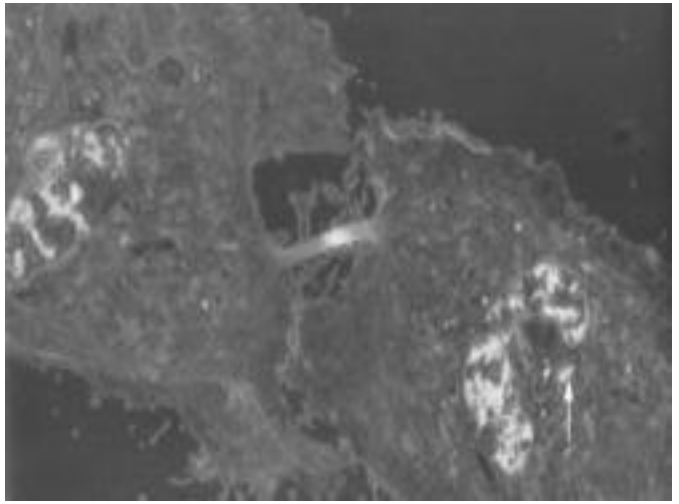
- Sister chromatids are pulled apart
- One chromatid ends up on each side of the cell

Telophase

- The cell begins to pinch in half, forming two new cells
- Chromasomes begin to decondense into diffuse genetic material
- Nuclear envelope regenerates

Cytokinesis

- Happens after mitosis is finished
- A cell wall develops down the middle of the cell.
- Cells split apart and two new cells are formed.



Mitosis Movie

- Mitosis Movie 1