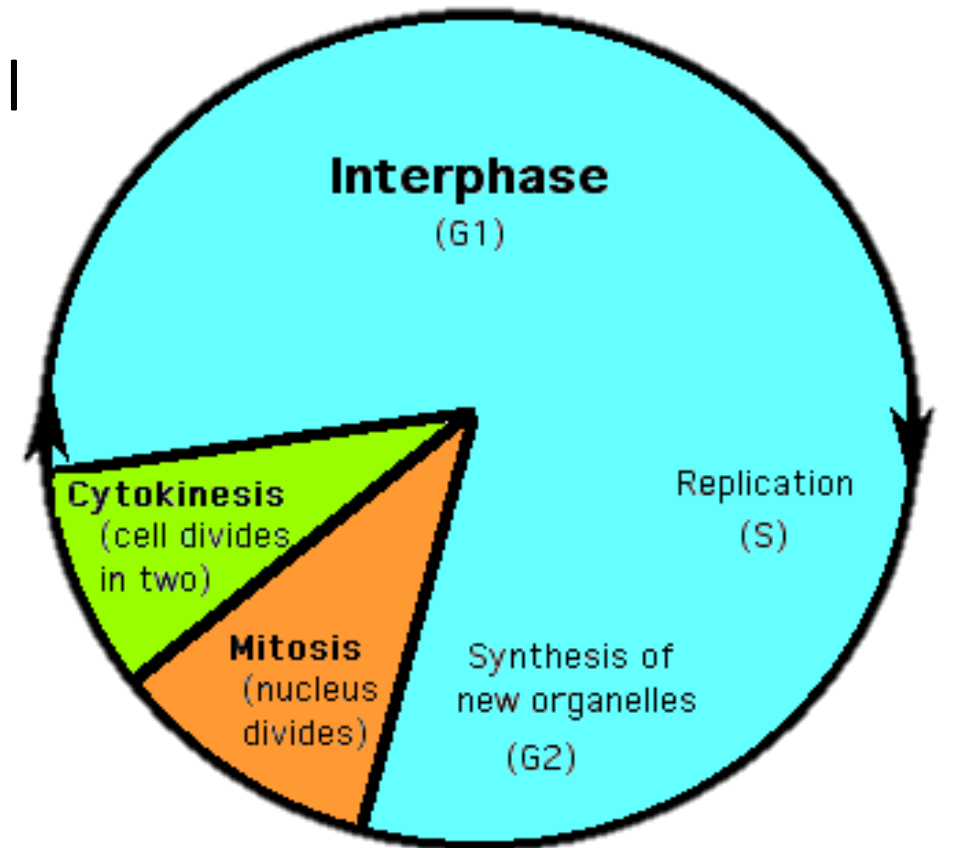


Cell Cycle

Aka- the life cycle of a cell

Cell Cycle

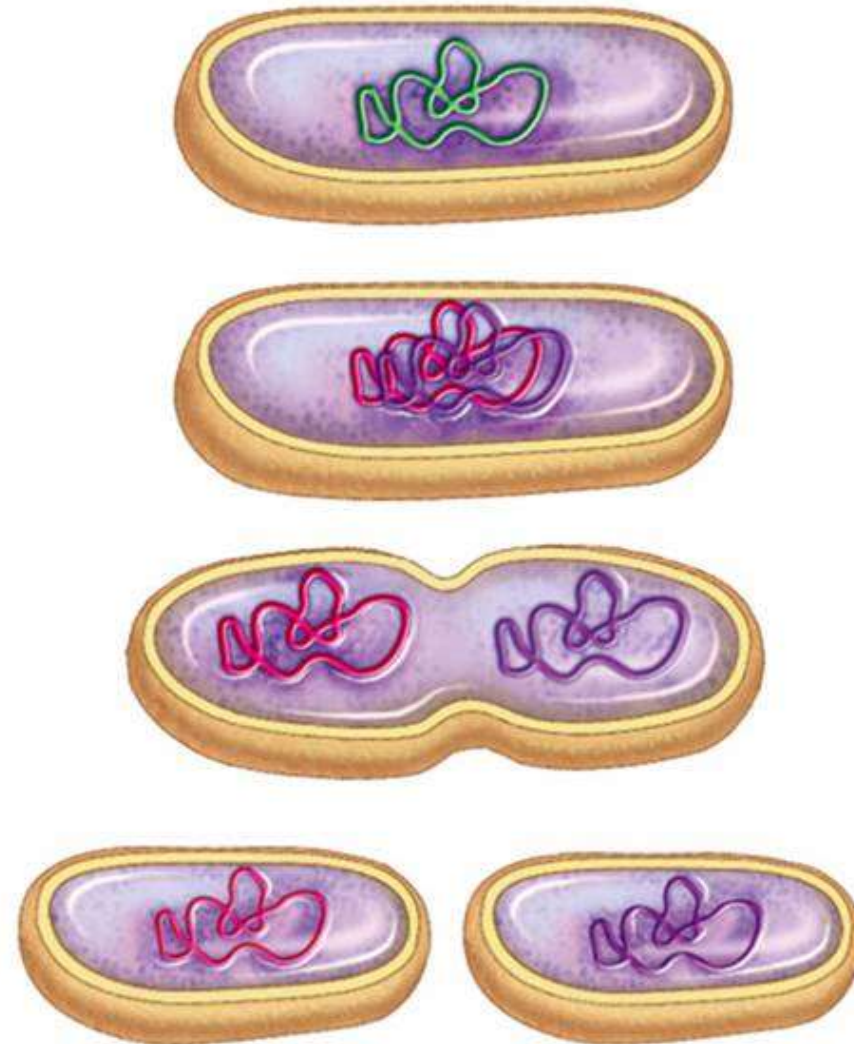
- Begins when a cell is formed
- Ends when cell divides and forms a new cell
- (before it can divide it has to copy DNA)
- How is DNA organized for copying?



Binary Fission

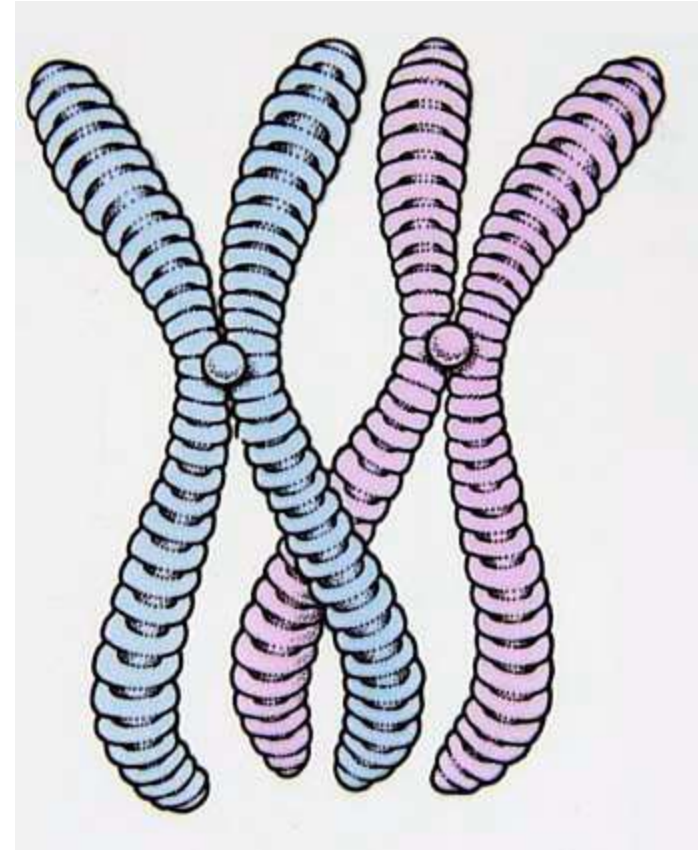
- Prokaryotic cells
- “splitting into two parts”
- Each cell gets one complete copy of DNA

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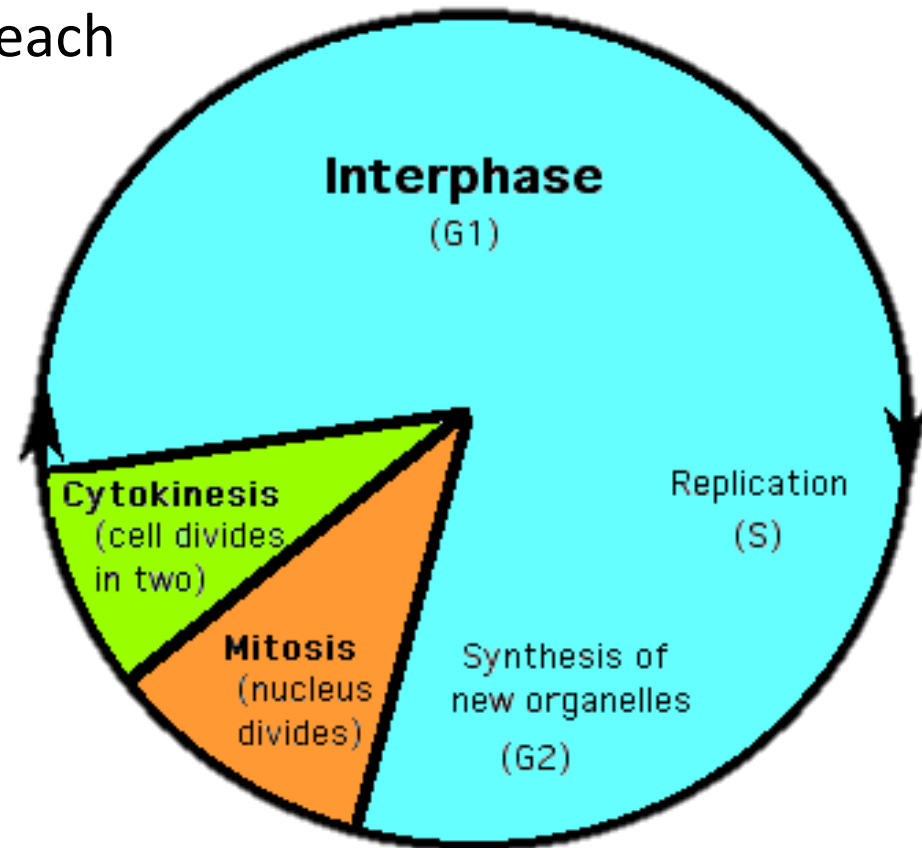
Eukaryotic Cells

- Have more DNA... why?
- Homologous chromosomes- what are they?
- Each organism has a ***different*** number of chromosomes.



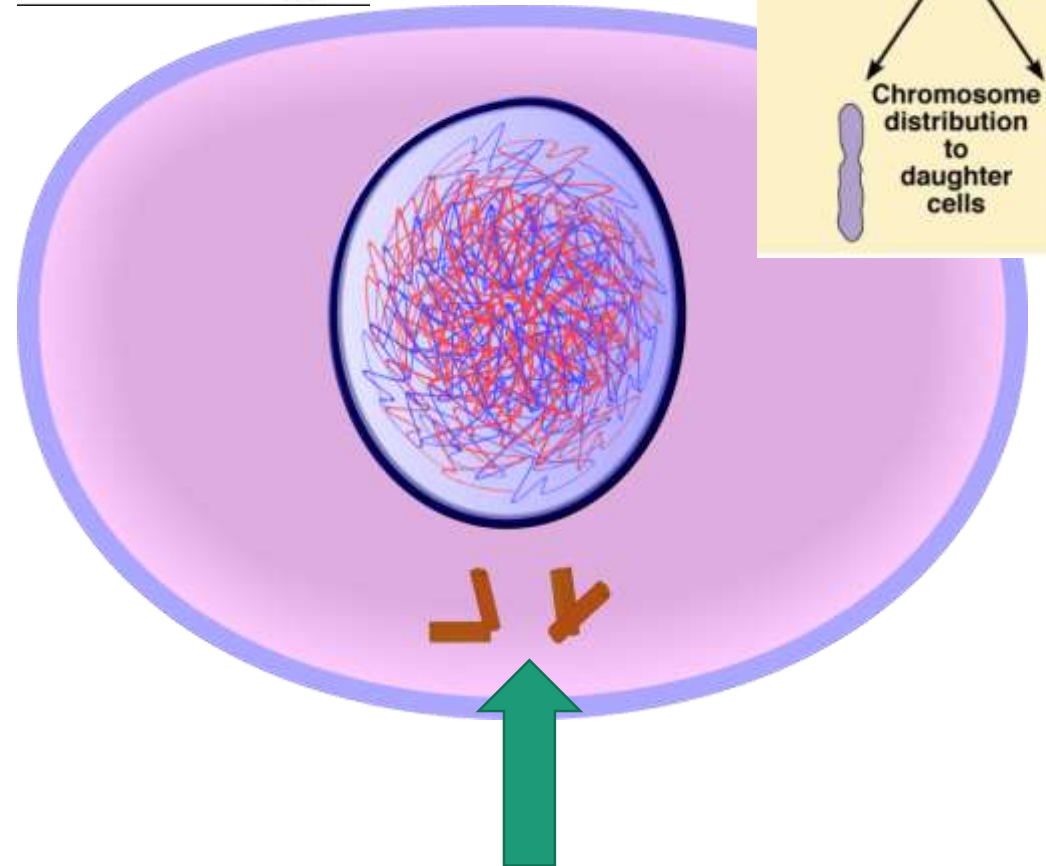
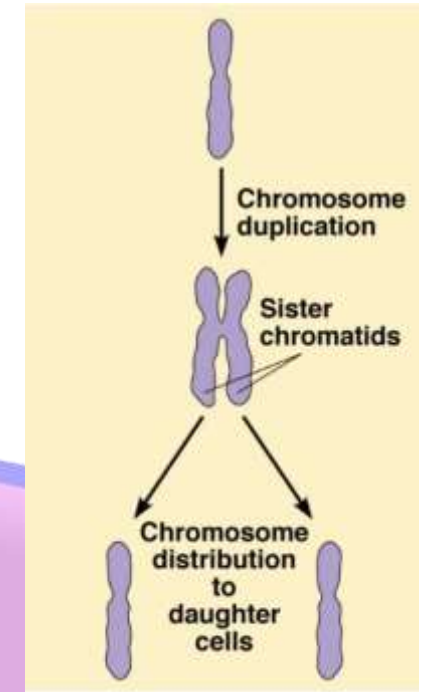
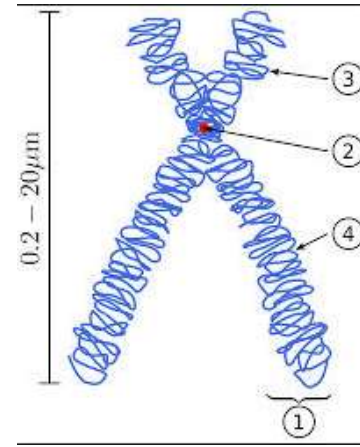
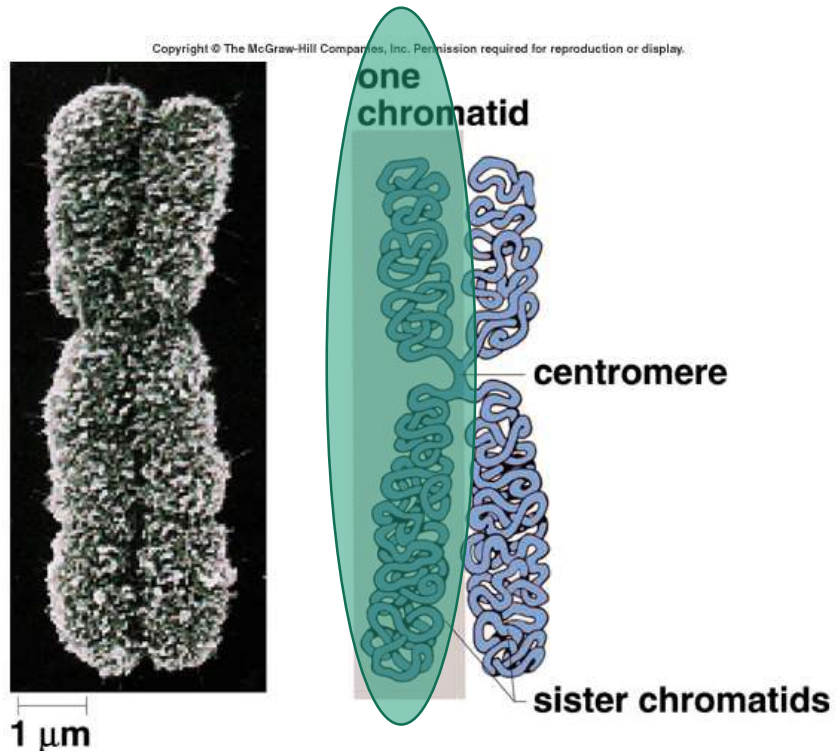
Cell Cycle

- Has three stages
 1. Cell grows and copies organelles/chromosomes
 2. Chromatids separate (through **mitosis**)- helps each cell get a copy of each chromosome
 3. Cell divides= two cells identical to original cell



A Closer Look at Stage 2

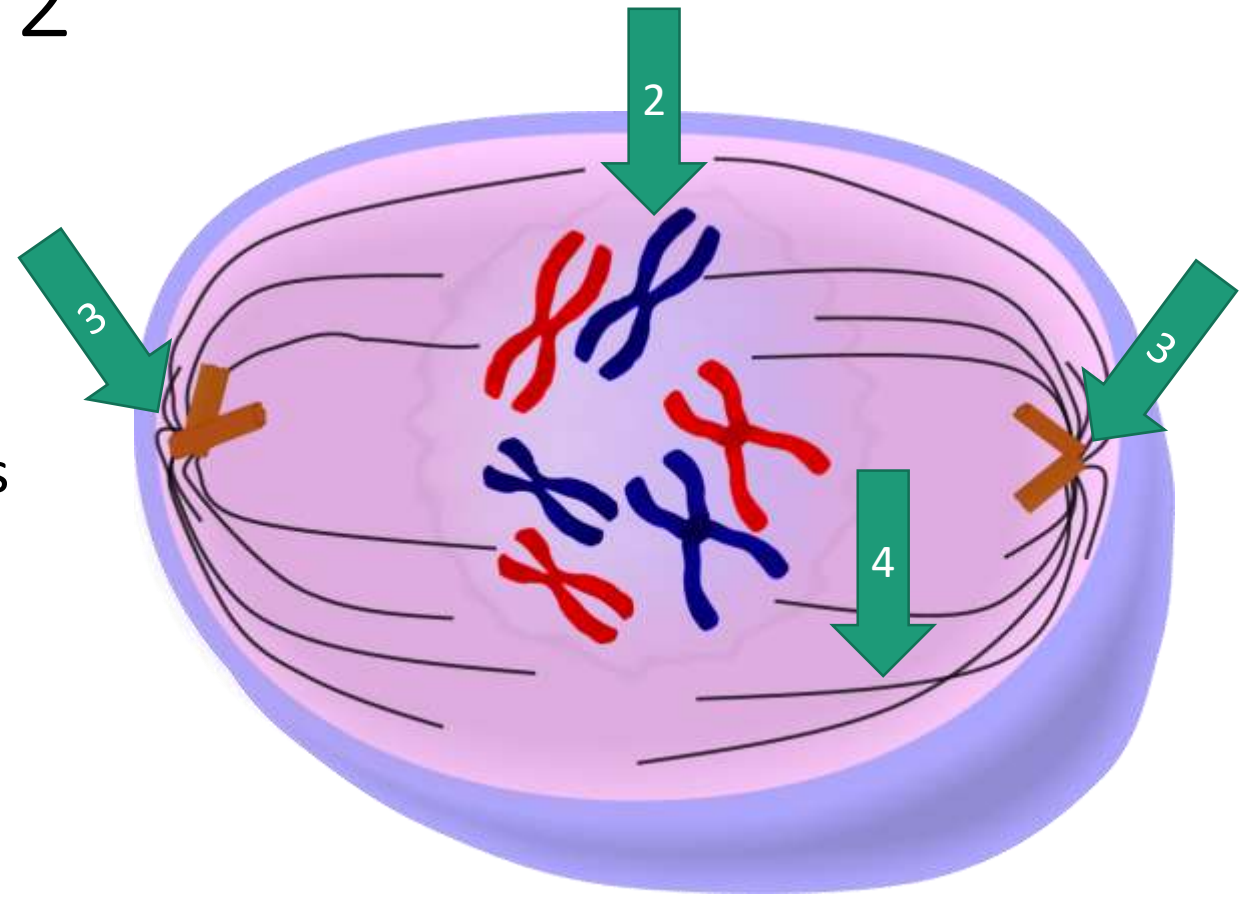
- **Interphase (premitosis)**
 - **Materials copied**
 - Centrioles copy
 - 1 chromosome = 2 chromatids



A Closer Look at Stage 2

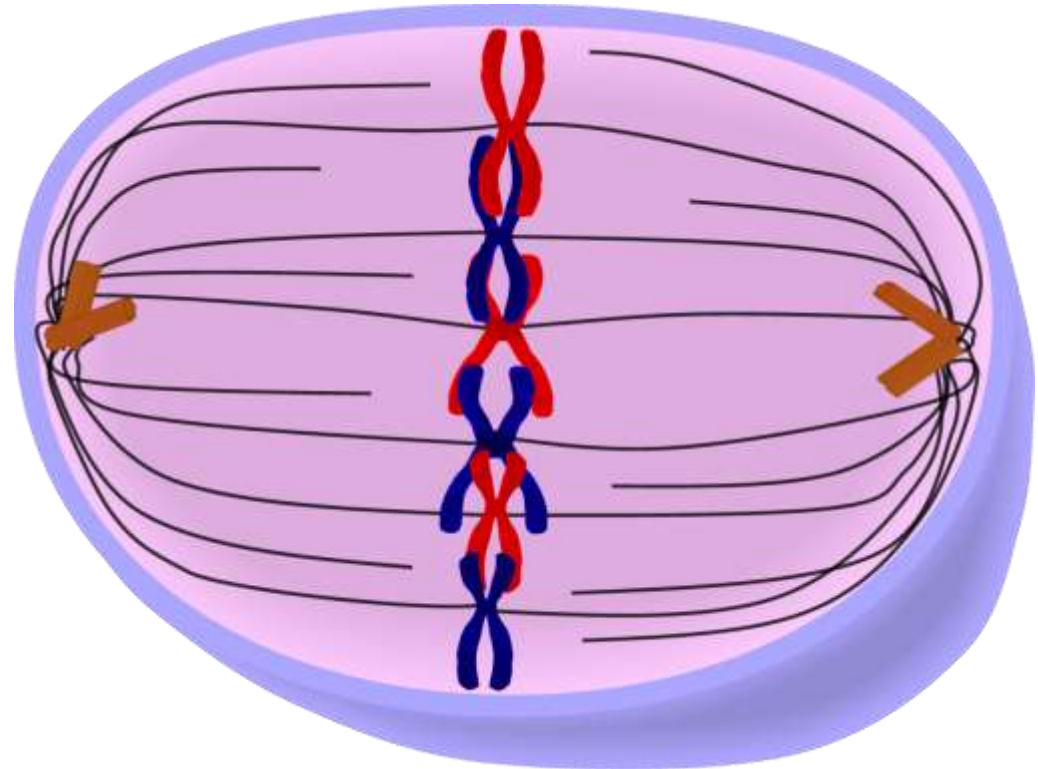
- **Prophase** (mitosis phase 1)

1. Nuclear membrane breaks down
2. Chromosomes condense
3. Centrioles move to opposite ends
4. Fibers attach to centromeres



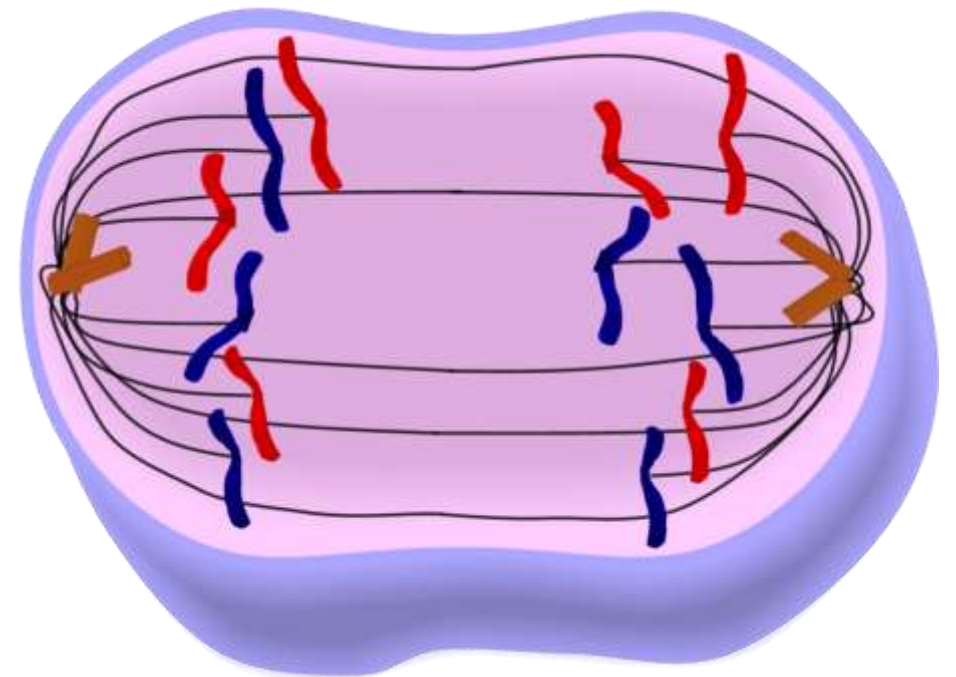
A Closer Look at Stage 2

- **Metaphase** (mitosis phase 2)
 - Chromosomes line up in the middle of the cell
 - Shortest phase



A Closer Look at Stage 2

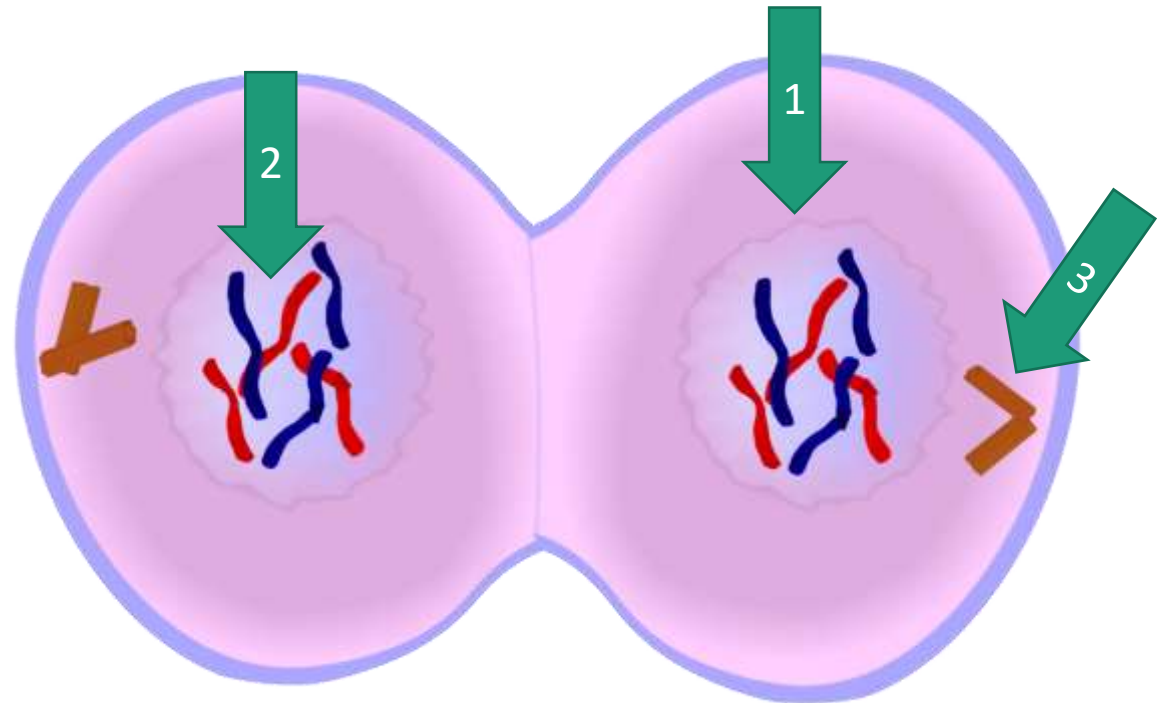
- **Anaphase** (mitosis phase 3)
 - Chromatids separate
 - Are pulled to opposite sides by fibers on centrioles



A Closer Look at Stage 2

- **Telophase** (mitosis phase 4)

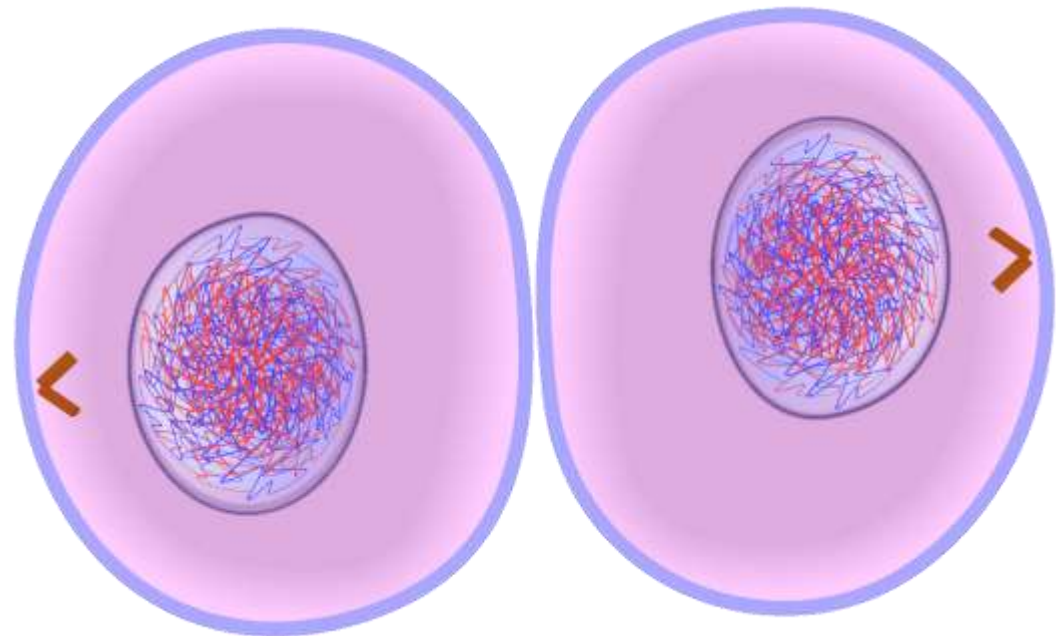
1. Nuclear membrane forms around chromosomes
2. Chromosomes unwind
3. Fibers disappear
4. Mitosis over



Stage 3 (finally!)

- **Cytokinesis**

- Tail end of mitosis
- Cytoplasm splits (pinches in)
- New cells are at the beginning of next cell cycle



[Cell Cycle Dance](#)

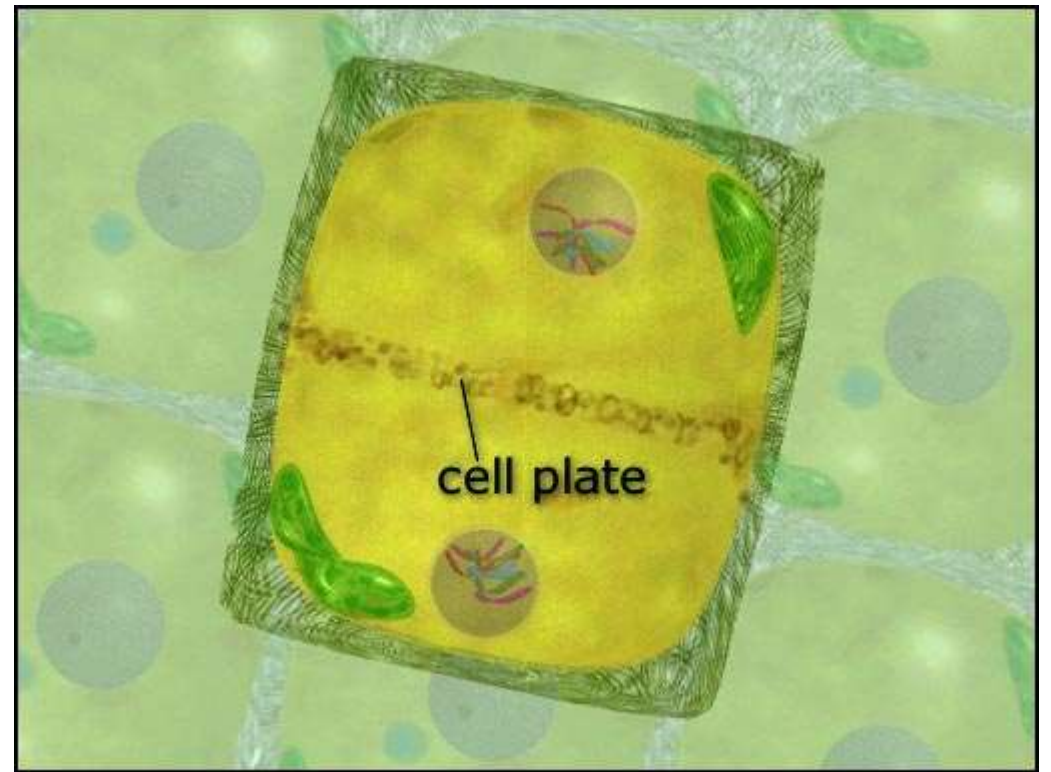
[Mitosis Rap](#)

Still don't get it? Watch this video:

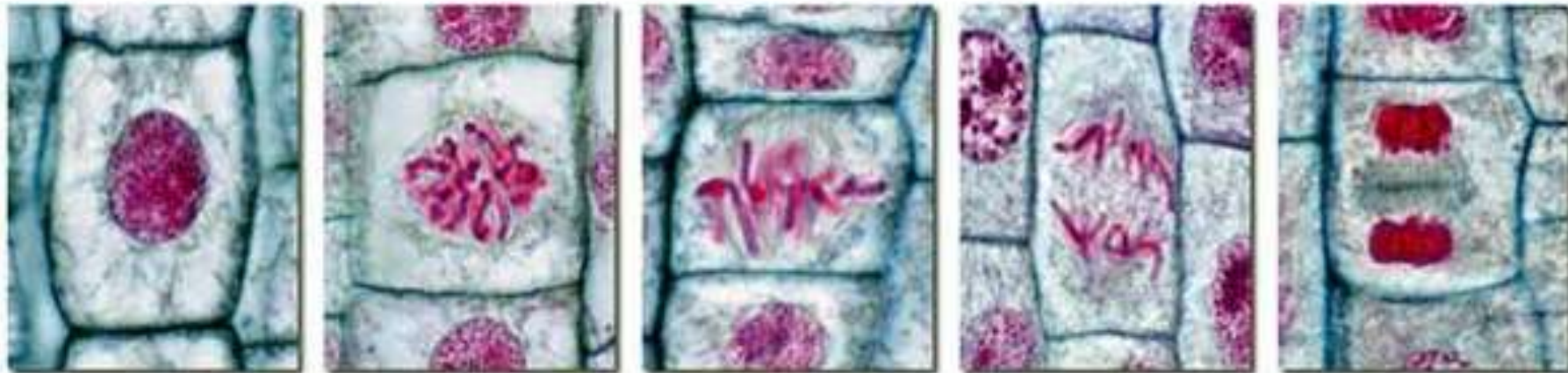
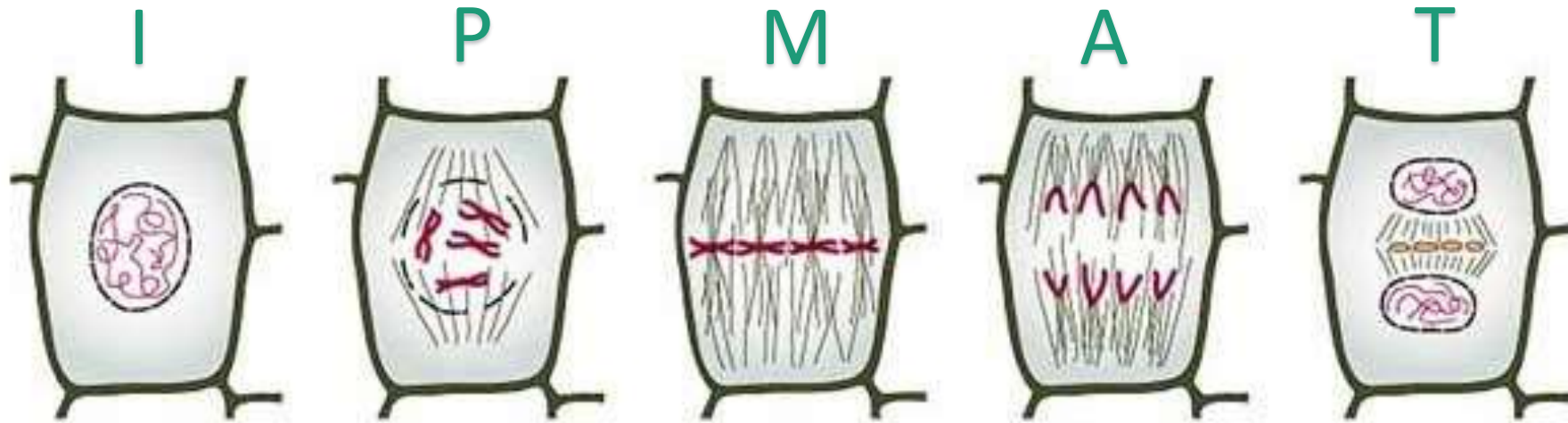
<https://www.youtube.com/watch?v=JcZQkmooyPk>

What about cells with cell walls?

- Plants, algae, fungi have cell walls
- Cell plate forms between new cells
- After cell split, cell wall forms between membranes



Plant Cell Mitosis



One more time...

