

Cell Division

EQ: How do cells grow and reproduce?

What is cell division and why does it happen?

Cell Division: process by which a cell divides to form two new cells (daughter cells)

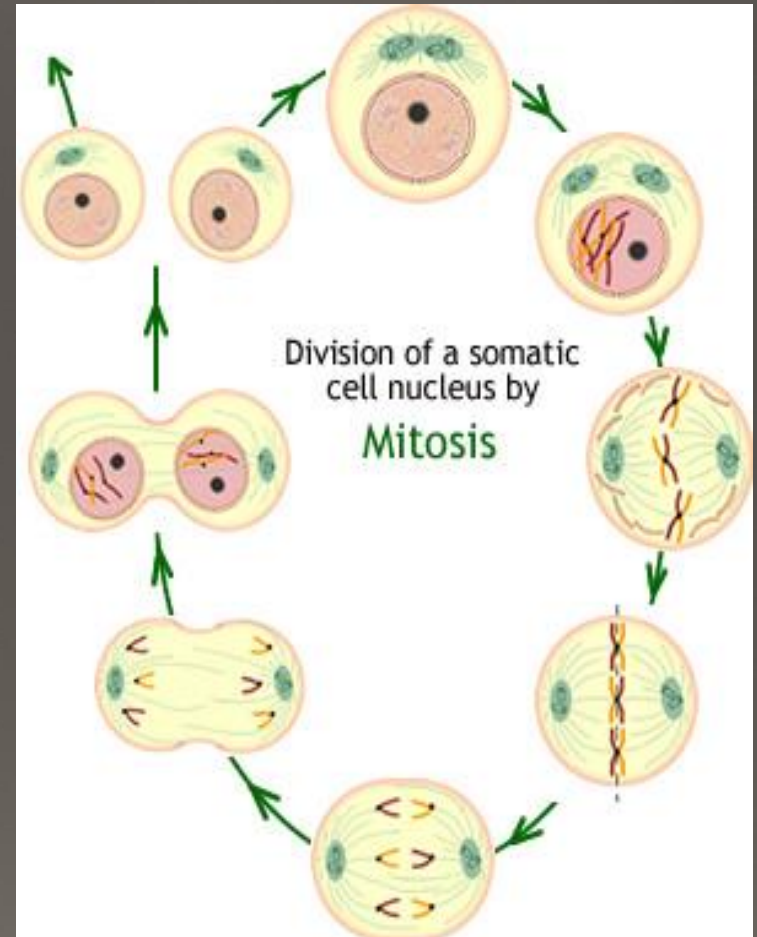
Three reasons why cells divide

1. Growth
2. Repair
3. Replacement

All eukaryote cells go through six stages known as the cell cycle.

Cell Cycle

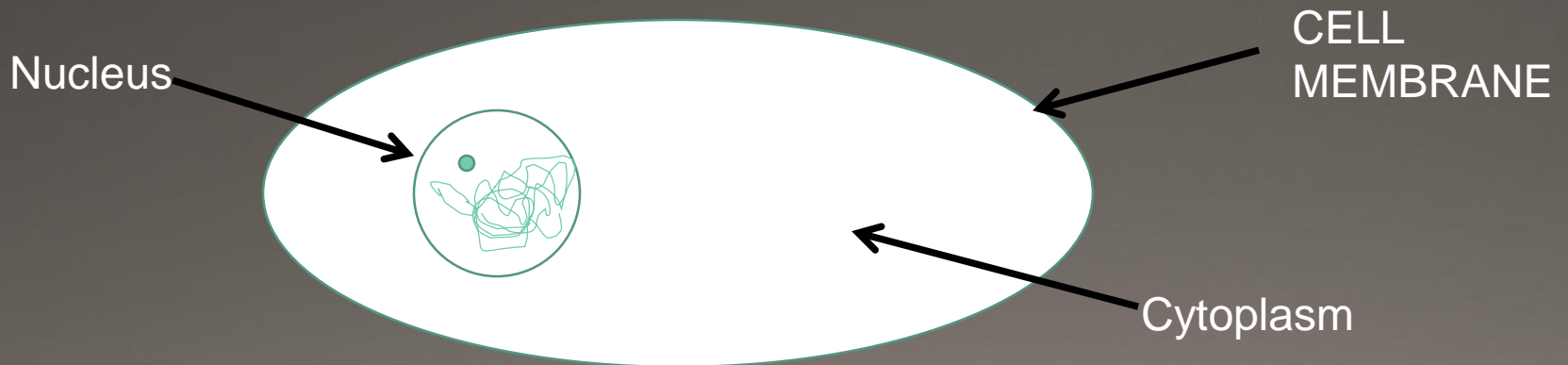
- Interphase
- Prophase
- Metaphase
- Anaphase
- Telophase
- Cytokinesis



Interphase

occurs before mitosis begins

- Chromosomes are copied (DNA Replication)
- Chromosomes appear as threadlike coils (chromatin) at the start, but each chromosome and its copy (sister chromosome) change to sister chromatids (rod like shape) at end of this phase

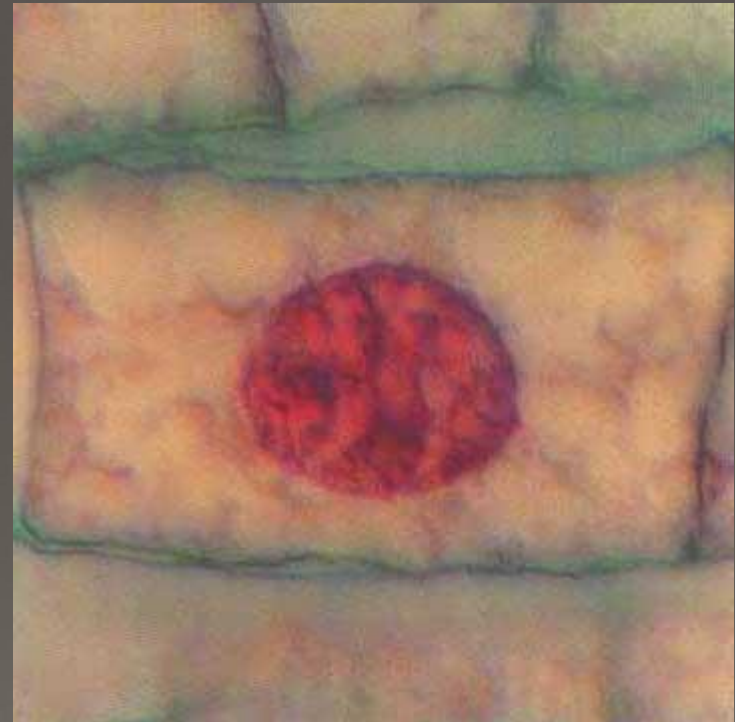


Interphase

Animal Cell



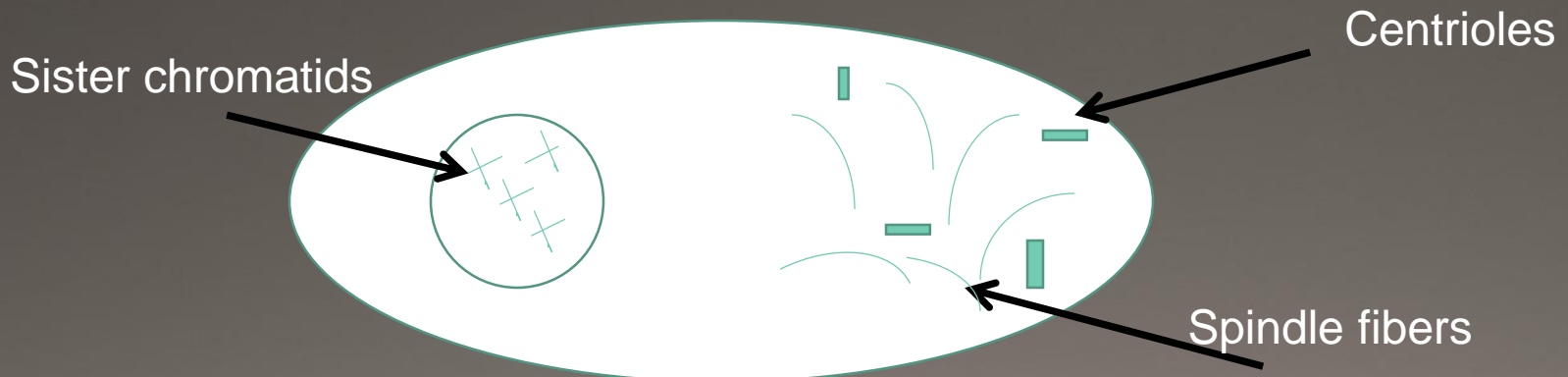
Plant Cell



Prophase

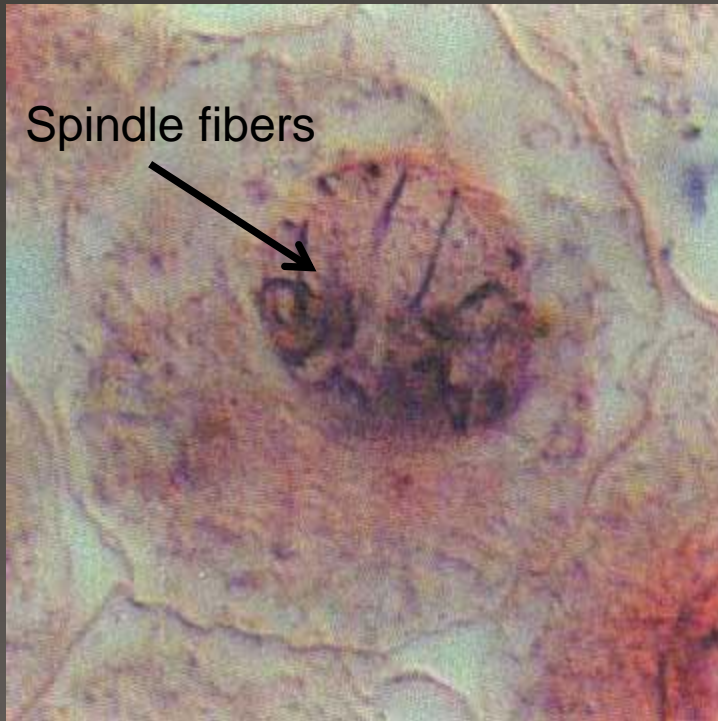
1st step in Mitosis

- Mitosis begins (cell begins to divide)
- Centrioles (or poles) appear and begin to move to opposite end of the cell.
- Spindle fibers form between the poles.
- The nucleolus dissolves by the end of prophase.

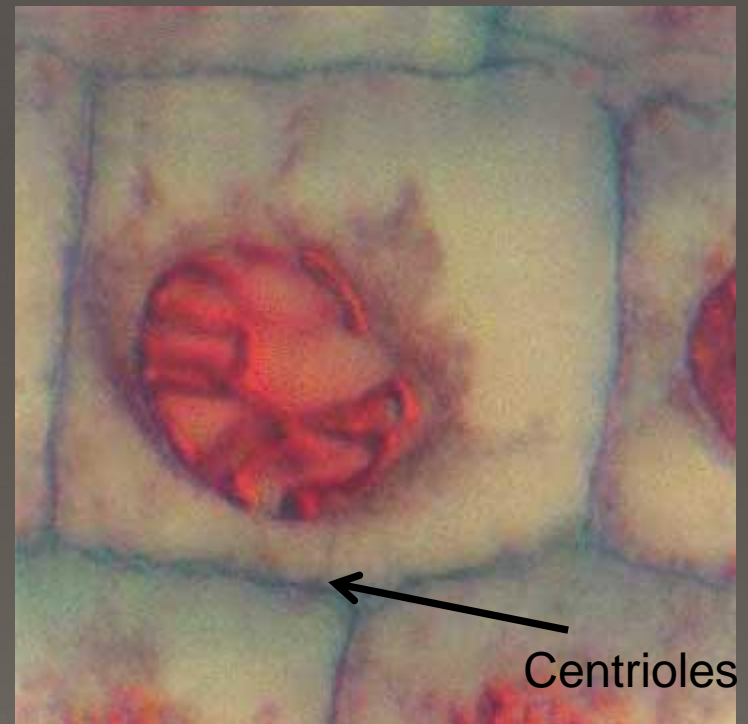


Prophase

Animal Cell



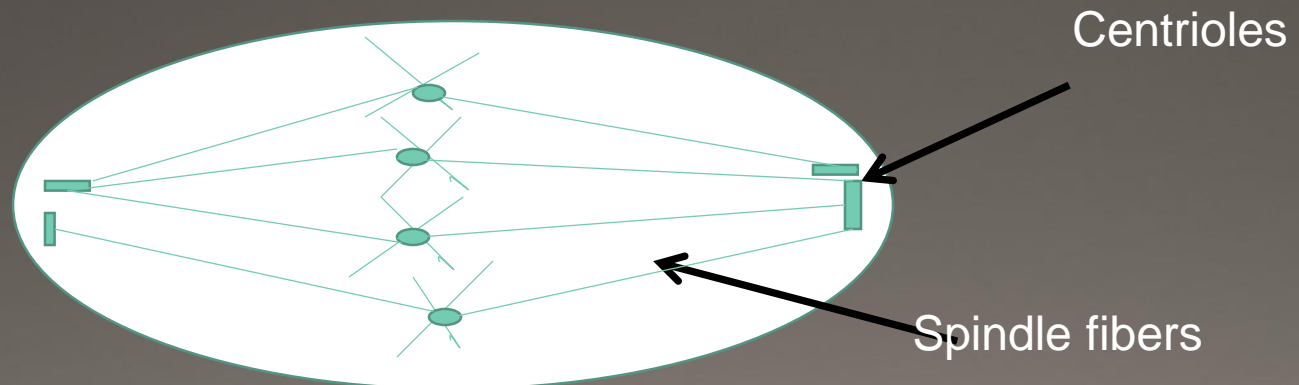
Plant Cell



Metaphase

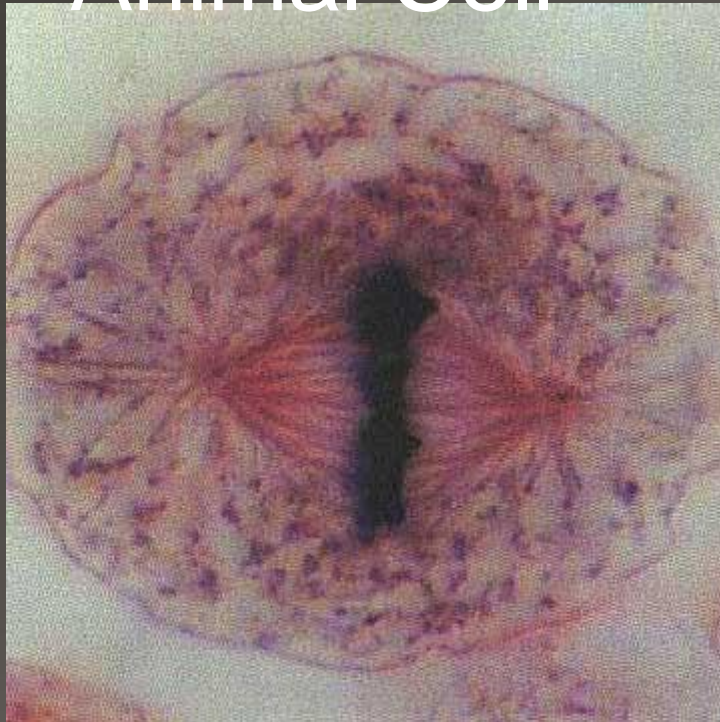
2nd step in Mitosis

- Chromatids (or pairs of chromosomes) attach to the spindle fibers.
- Chromatids line up in the center of the cell
- Centrioles are fully move to opposite poles.

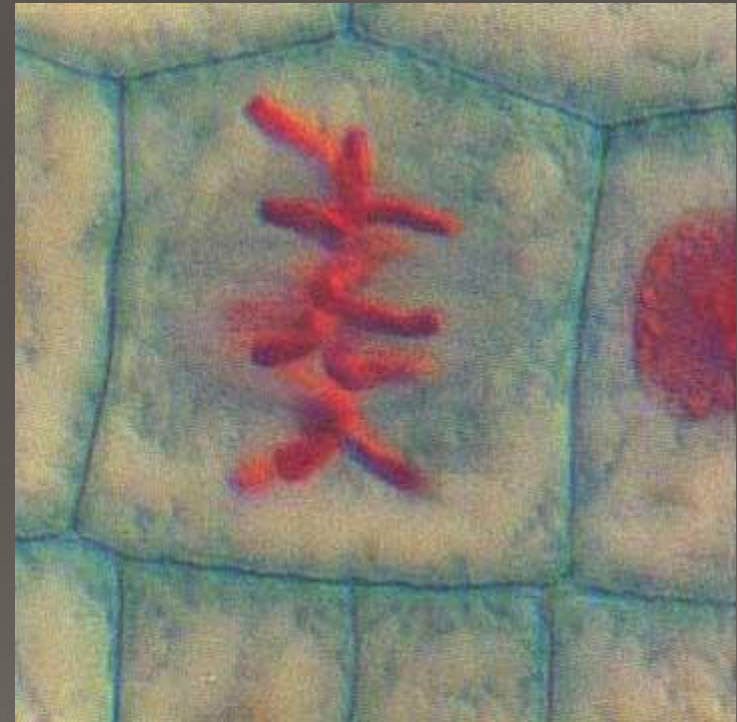


Metaphase

Animal Cell



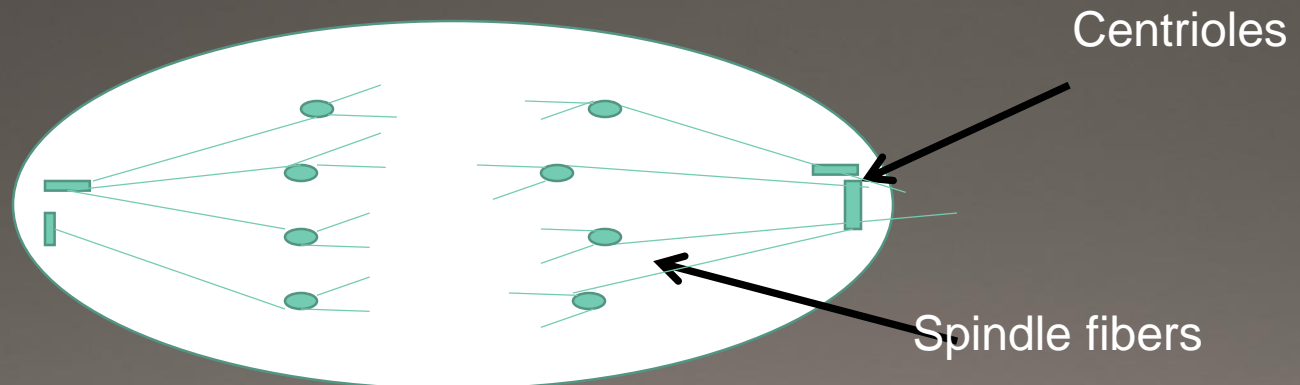
Plant Cell



Anaphase

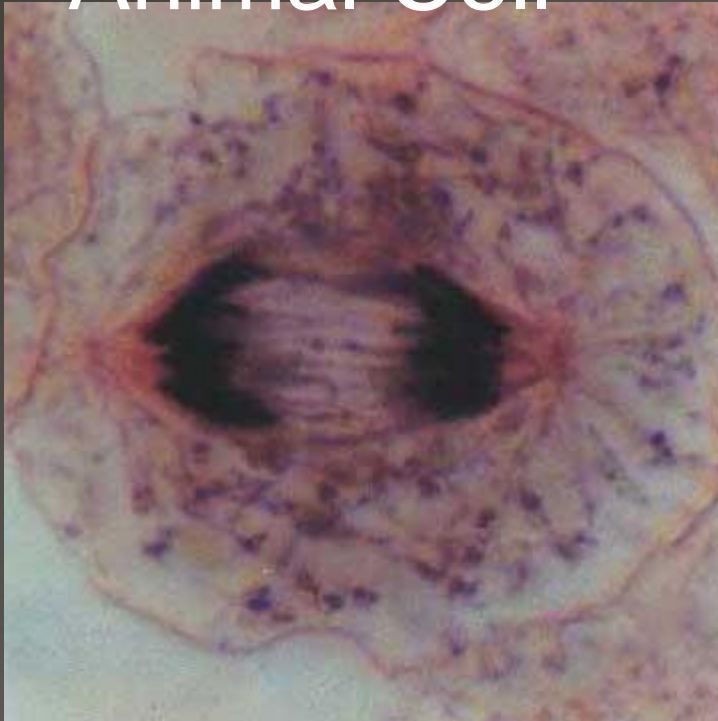
3rd step in Mitosis

- Chromatids (or pairs of chromosomes) separate and begin to move to opposite ends of the cell.

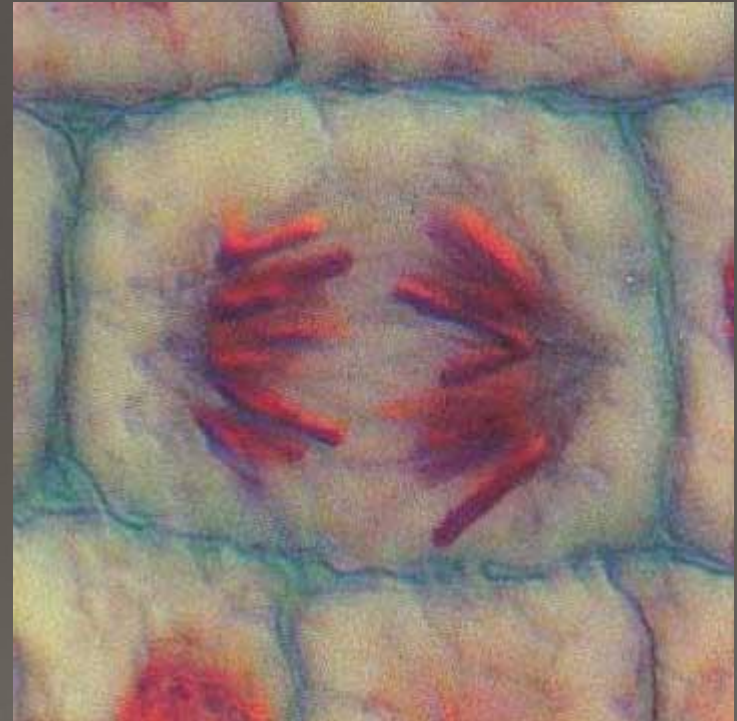


Anaphase

Animal Cell



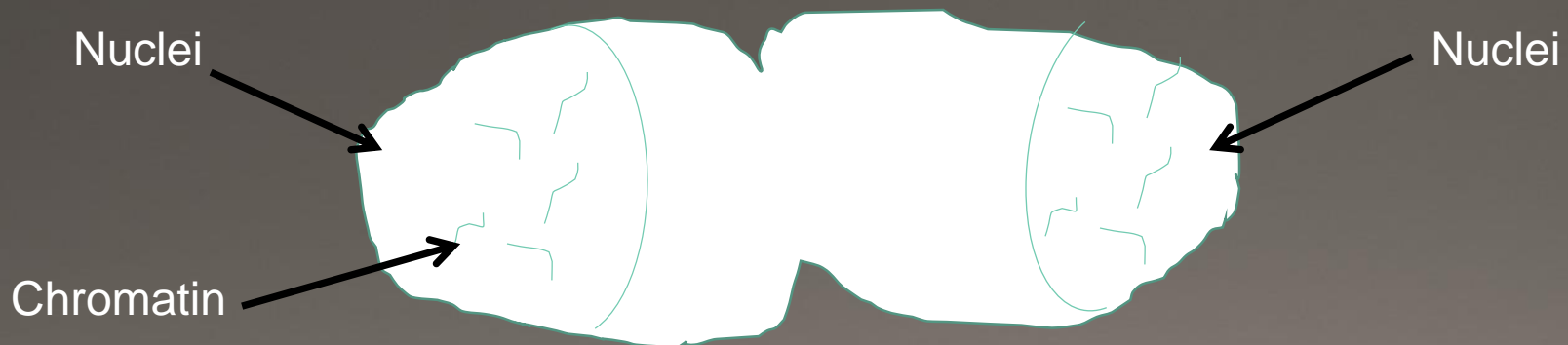
Plant Cell



Telophase

4th step in Mitosis

- Two new nuclei form.
- Chromosomes go back to chromatin (threads rather than rods).
- Mitosis ends.

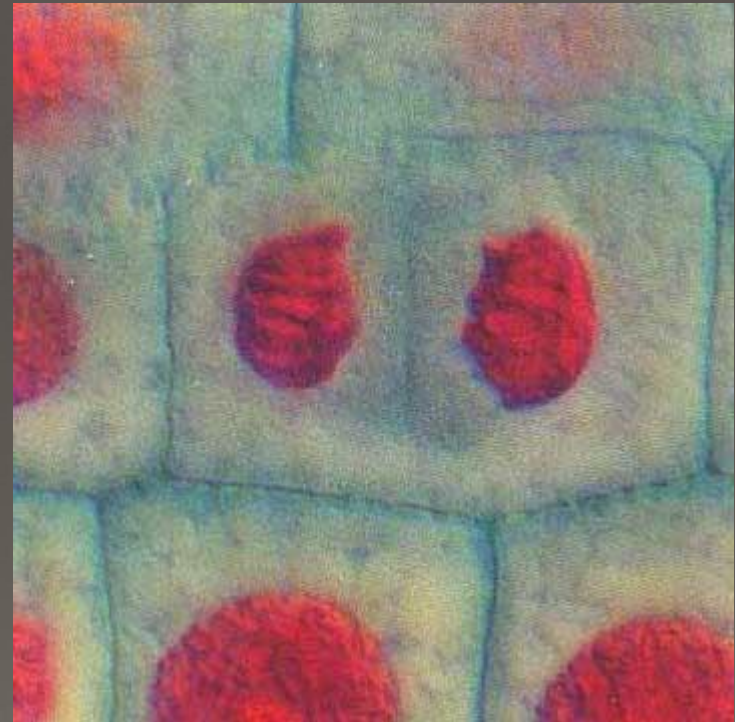


Telophase

Animal Cell



Plant Cell



Cytokinesis

occurs after mitosis

- Cell membrane moves inward to create two daughter cells – each with its own nucleus with identical chromosomes.



Animal Mitosis -- Review

Interphase



Prophase



Metaphase



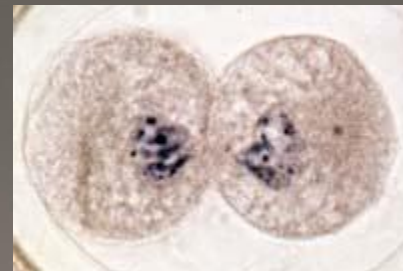
Anaphase



Telophase

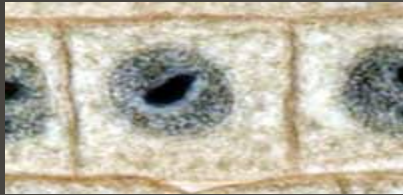


Cytokinesis



Plant Mitosis -- Review

Interphase



Prophase



Metaphase



Anaphase



Telophase



Cytokinesis



REMEMBER!

- Interphase
- Prophase
- Metaphase
- Anaphase
- Telophase
- Cytokinesis

Create your own mnemonic

Cell Cycle

