

## ① Cell Division and Mitosis

What You'll Learn:

Explain why mitosis is important.

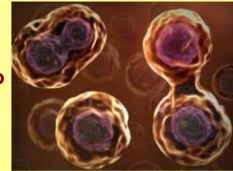
Examine the steps of mitosis.

Compare mitosis in plant and animal cells.

List two examples of asexual reproduction.

## Why is Cell Division Important?

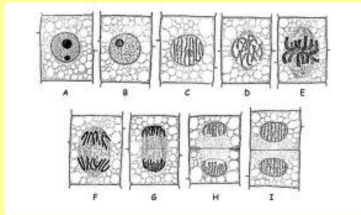
\*Most organisms start as one cell. That cell divides to create growth.



\*After growth stops it is still important for repair and replacement of cells.

## The Cell Cycle

\*Is the length of time from birth to death of a cell.



## Length of the Cycle

\*The length of the cycle is different for every cell.

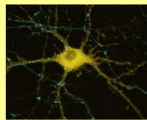


## Interphase

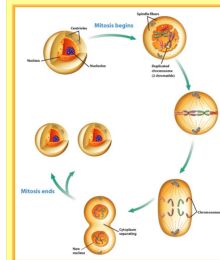
\*Most of the cell's life is spent in Interphase.



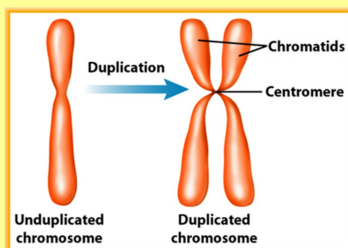
\*Muscle and nerve cells are always in Interphase.



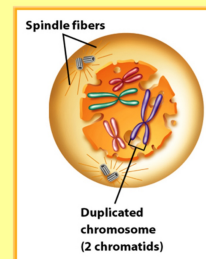
## Mitosis



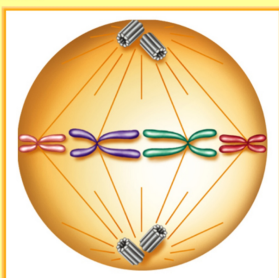
1. Interphase- growth and development , and chromosomes duplicate.



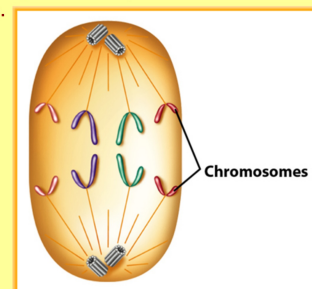
2. Prophase- chromatid pairs are visible and nucleus disappears.



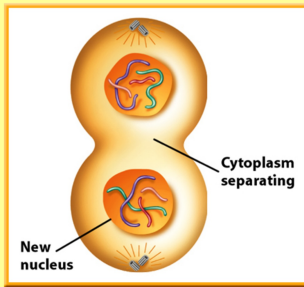
3. Metaphase- pairs line up in the center and attach to spindle fibers.



4. Anaphase- spindle fibers pull individual chromosomes to each side.

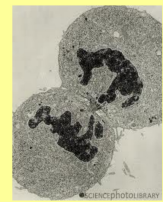
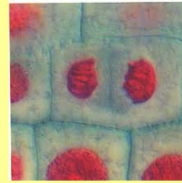


5. Telophase- spindle fibers disappear, chromosomes uncoil, and new cell and nucleus forms.



### Division of the Cytoplasm

\*Animal cells the cell membrane pinches together and new cells form.



\*Plant cells a cell plate forms and divides the two new cells.

### Results of Mitosis

\*It produces genetically identical cells.

\*Allows growth and replaces damaged cells.

\*Some organisms use mitosis to create new organisms.



### Asexual Reproduction

\*Only requires one organism to produce a new organism.

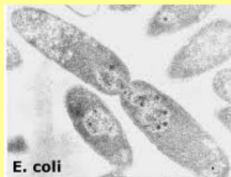
\*Offspring will be genetically identical to parent.



### Cellular Asexual Reproduction

\*Eukaryotic reproduce using mitosis.

\*Prokaryotic reproduce using fission.



### Budding and Regeneration

\*Bud forms on an adult when it becomes large enough to survive on its own it breaks away.



\*Regeneration is the regrowing of lost or damaged body parts.