

## Chapter 9: How Cells Reproduce

### Cell Division

- When a \_\_\_\_\_ cell divides, each \_\_\_\_\_ cell must receive:
  - a complete set of \_\_\_\_\_
  - enough \_\_\_\_\_ material to survive
- Mitosis & Meiosis are \_\_\_\_\_ divisions
  - Mitosis is used for \_\_\_\_\_ and \_\_\_\_\_
  - Meiosis is used to make \_\_\_\_\_
- Cytokinesis is division of the \_\_\_\_\_

### Chromosome Structure

- A chromosome is a molecule of \_\_\_\_\_ with supporting \_\_\_\_\_
- Before cell division, each chromosome must \_\_\_\_\_
  - A \_\_\_\_\_ will hold the “sister” \_\_\_\_\_ together
  - The centromere will attach to \_\_\_\_\_ during cell division

### Chromosome Number

- Cells in the body are classified as either \_\_\_\_\_ cells (gametes) or \_\_\_\_\_ cells
  - Somatic cells have \_\_\_\_\_ chromosomes
    - Mitosis will \_\_\_\_\_ this chromosome number (ex. Humans have \_\_\_\_\_ chromosomes in somatic cells)
  - Gametes have \_\_\_\_\_ chromosomes
    - Meiosis forms gametes with \_\_\_\_\_ the normal amount of chromosomes (ex. \_\_\_\_\_)

### The Cell Cycle

- The cell cycle is the period of time from a cell's \_\_\_\_\_ until it finishes \_\_\_\_\_
- Normally, about \_\_\_\_\_ of a cell's existence is spent in \_\_\_\_\_, between divisions
  - During Interphase, the cell does its normal jobs, \_\_\_\_\_, and replicates its \_\_\_\_\_
  - Some cells \_\_\_\_\_ in Interphase and never divide again (ex. some \_\_\_\_\_ cells)

## Mitosis

- The first stage of mitosis is \_\_\_\_\_
  - The replicated chromosomes thicken up into \_\_\_\_\_ form
  - Microtubules (called the \_\_\_\_\_) begin to form; these will later \_\_\_\_\_ the chromosomes
  - Centrioles move toward the \_\_\_\_\_
- The second stage is \_\_\_\_\_
  - The nuclear membrane \_\_\_\_\_
  - Microtubules attach to the \_\_\_\_\_ of each centromere
  - Spindle microtubules \_\_\_\_\_ the chromosomes so that sister chromatids are toward each \_\_\_\_\_
  - The chromosomes are aligned at the cell's \_\_\_\_\_
- The third stage is \_\_\_\_\_
  - Sister chromatids separate at the \_\_\_\_\_
  - Microtubules attached to kinetochores will begin to \_\_\_\_\_, moving chromosomes toward the \_\_\_\_\_
  - Other microtubules \_\_\_\_\_, pushing the poles further \_\_\_\_\_
- The final stage is \_\_\_\_\_
  - Telophase begins when the \_\_\_\_\_-chromatid chromosomes arrive at the \_\_\_\_\_
  - Small \_\_\_\_\_ fuse to form new \_\_\_\_\_ envelopes
  - Mitosis is now complete, and each nucleus is a \_\_\_\_\_ of the original

## Cytokinesis

- In \_\_\_\_\_ cells, after mitosis is completed:
  - Contractile \_\_\_\_\_ pull the plasma membrane inward
  - A “\_\_\_\_\_” occurs, forming two new cells
- In \_\_\_\_\_ cells:
  - A cell \_\_\_\_\_ (made of \_\_\_\_\_) forms between the nuclei to form a new cell \_\_\_\_\_
  - Then, new cell \_\_\_\_\_ form

## Loss of Control

- Right now, \_\_\_\_\_ of cells in your body are performing \_\_\_\_\_, as they should
- Sometimes, a group of cells begins to reproduce \_\_\_\_\_, and stops performing its \_\_\_\_\_ functions
- This condition is known as \_\_\_\_\_