

# Cell Cycle - Chapter 9

Connections:

- Why are cells small?
- What are the two phases of the cell cycle?
- What are the three stages of interphase, and what is happening in each stage?
- What are the two divisions that occur in the cell cycle, and how do they differ?

Review

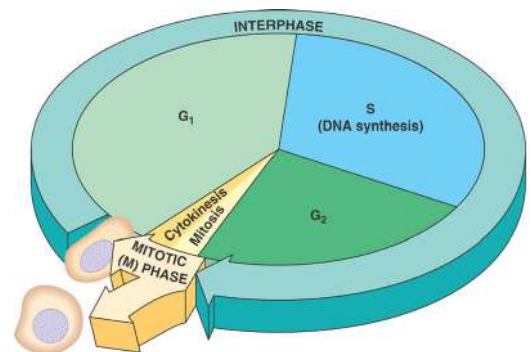
- Why are cells small?
  - Small cells have a \_\_\_\_\_ surface area to volume ratio.
- The \_\_\_\_\_ the surface area the more \_\_\_\_\_ can \_\_\_\_\_ at one time.
- The smaller the \_\_\_\_\_ the less space materials have to go through to reach the center of the cell.
- New Information
  - Large cells places more demands on the \_\_\_\_\_.
  - A few large cells have to make more \_\_\_\_\_ from their DNA than many \_\_\_\_\_ cells.
    - If two people had to make 100 sandwiches each would have to make 50. If 10 people made 100 sandwiches each only has to make 10.

The Cell Cycle

- The cell cycle is a description of the \_\_\_\_\_ of a cell.
- During the cell cycle, the cell:
  - Performs \_\_\_\_\_ functions
    - Example: Small intestine cells take in nutrients from the digestive system
  - \_\_\_\_\_
  - \_\_\_\_\_
- At the \_\_\_\_\_ of each cell cycle
  - \_\_\_\_\_ daughter cells are produced
  - Each daughter cell begins a \_\_\_\_\_ cell cycle

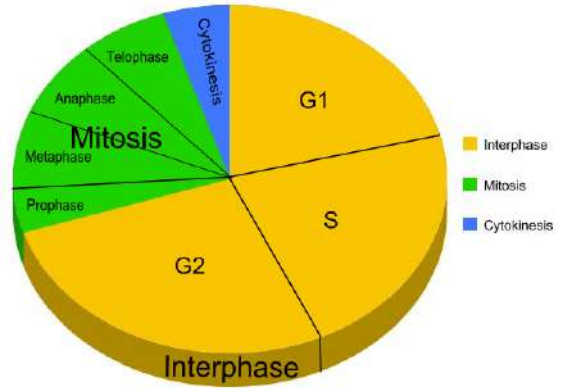
Phases and Stages of the Cell Cycle

- The cell cycle is split into \_\_\_\_\_ phases:
  - \_\_\_\_\_
    - A period of \_\_\_\_\_
    - During this phase the cell performs its \_\_\_\_\_ functions.
  - \_\_\_\_\_
    - A period of cell \_\_\_\_\_ (\_\_\_\_\_)



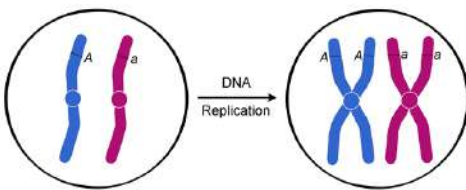
## Interphase

- Interphase is divided into \_\_\_\_\_ stages:
  - \_\_\_\_\_ (First Gap Phase)
  - \_\_\_\_\_
  - \_\_\_\_\_ (Second Gap Phase)



## G<sub>1</sub> Phase

- During G<sub>1</sub>, the cell
  - \_\_\_\_\_ in size (hints the letter “G”)
  - Makes new \_\_\_\_\_ and \_\_\_\_\_
- The cell spends \_\_\_\_\_ of its time in this stage.



## S Phase

- The S stands for “\_\_\_\_\_”
- During this phase \_\_\_\_\_ is \_\_\_\_\_ (copied)

## G<sub>2</sub> Phase

- During the G<sub>2</sub> phase, the cell is preparing for \_\_\_\_\_ (\_\_\_\_\_)
  - \_\_\_\_\_ and molecules the cell needs to \_\_\_\_\_ are produced.

## M Phase

- M Phase is where \_\_\_\_\_ occurs.
  - This is where the cell actually \_\_\_\_\_ into \_\_\_\_\_ separate cells.
- Two divisions occur during M Phase
  - \_\_\_\_\_ division - where the \_\_\_\_\_ divides
  - \_\_\_\_\_ - where the \_\_\_\_\_ divides

## Cell Cycle Diagram

