

Chapter 10-1, 10-2 Reading Guide

10-1 Cell Growth

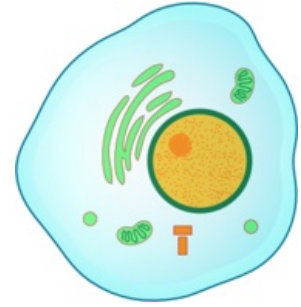
- Larger cells will divide because they have trouble doing what?

- Where is DNA found (eukaryotes)?

- As a cell gets larger, what kind of crisis might occur (related to DNA)?

- How does food, water and oxygen enter the cell?

- Understanding the relationship between a cell's volume and _____ is the key to understanding why cells divide as they grow.
- As a cell grows, the volume increases [more / less] rapidly than the surface area.
- Cell division is the process by which a cell divides into two _____.
- What must happen before cell division can occur? _____



10-2 Cell Division

- What are the two phases of cell division? _____
- The cells produced by mitosis are [identical to / different from] the parent cell.
- How many chromosomes does a human cell have? _____ What about a fruit fly? _____
- Each chromosome consists of two identical parts called _____
- Each pair of chromosomes is attached at the _____
- The "in-between" period of cell growth is called _____
- The series of events that cells go through as they grow and divide is called the _____
- Interphase is divided into what three smaller phases? _____ (abbreviate)
- During which phase is DNA replicated? _____

MITOSIS

- What are the four phases of mitosis? _____
- What is the longest phase of mitosis? _____
- Tiny structures located in the nucleus that separate and go to opposite sides are called _____
- What structure helps to separate chromosomes during mitosis? _____
- What happens during metaphase? _____
- During what phase do the sister chromatids separate? _____
- In telophase, the chromosomes begin to disperse into a tangle of _____ and the _____ reforms.

CYTOKINESIS

- Cytokinesis usually occurs at the same time as _____
- In order for cytokinesis to occur in plants, a cell _____ forms between the two new cells.

INTERPRETING GRAPHICS (see Figure 10-5)

- In which phase do you first see the spindle? _____
- What phase occurs directly after metaphase? _____
- In which phase do the chromosomes move apart? _____
- In which phases are the chromosomes NOT visible (two phases) _____

TESTING YOURSELF

- The rate at which materials enter and leave through the cell membrane depends on the cell's?
 - volume
 - mass
 - weight
 - surface area
- Sister chromatids are attached to each other at an area called the:
 - centromere
 - centriole
 - spindle
 - chromosome
- The process of cell division results in:
 - sister chromatids
 - two daughter cells
 - mitosis
 - cell growth
- If a cell has 12 chromosomes, how many chromosomes will be in each of its daughter cells after mitosis?
 - 4
 - 6
 - 12
 - 24
- DNA copies itself during which phase?
 - prophase
 - metaphase
 - cytokinesis
 - interphase

