

Unit 5 Notes: Cellular Reproduction (Ch. 9 & 10.1)

_____ - are the basic unit of life.

Average human cell is approximately _____
in diameter.

1000 μm = 1 mm

Most cells are less than 100 μm in diameter, which is smaller than
the period at the end of this sentence.

_____ - process that creates more cells

Growth -

Development - _____

The most efficient cells are _____.

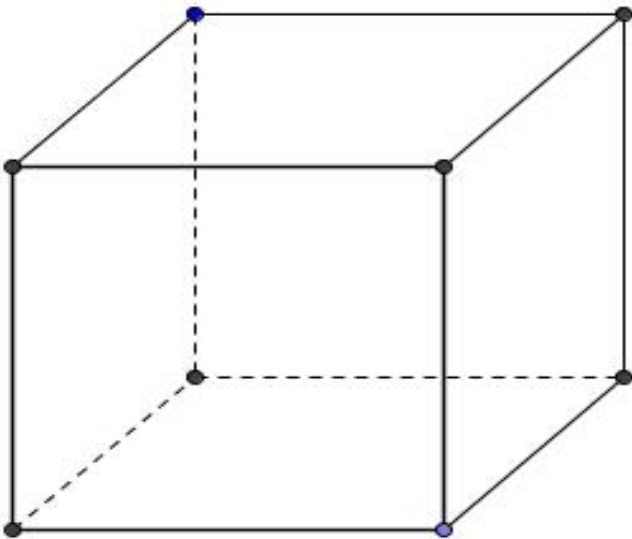
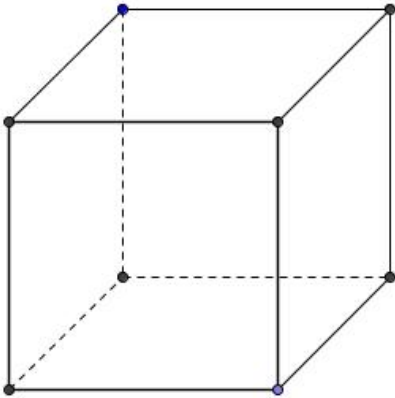
What limits cell size and why are cells small?

- (1) Transport of substances: To move _____ into the
cell and _____ out of the cell faster.
- (2) _____: To communicate more efficiently.
- (3) Small cells require less _____.

Cell Surface Area to Volume Ratio

A cell functions best when it has a _____ surface area (SA) and a _____ volume (V).

Surface Area to Volume Ratio in Cubic Cells



As a cell increases in size, the _____ increases at a much faster rate than the _____.

What does a cell do when it becomes too large?

1. The cell _____.
2. The cell _____.
3. The cell _____.

Two Types of Cell Reproduction (Cell Division):

1. _____ - reproduction of body cells

- Parent cell: _____

- Daughter cells: _____

Examples: red blood cell, white blood cell, nerve cell, skeletal muscle cell, cardiac muscle cell, fat cell, epithelial skin cell.

2. _____ - formation of sex cells (_____)

- Parent cell: _____

- Daughter cells: _____

Examples: Gametes (sex cells) = sperm cell and egg cell

Cell Cycle = process of cellular reproduction in 3 main parts

3 Main Parts:

(1) _____ = 1st stage of the cell cycle in which the cell grows, matures, and replicates its DNA and cell structures.

- growing stage in which a cell spends most of its life

- G₁ (Growth 1) – cell grows in size; organelles double in #
- S (Synthesis) – DNA replication occurs in nucleus of cell
- G₂ (Growth 2) – cell continues to grow in size in preparation for cell division

(2) _____ or _____ = 2nd stage of the cell cycle in which the cell's nuclear material divides and moves to opposite ends of the cell.

Mitosis (1 division):

Meiosis (2 divisions):

(3) _____ = 3rd stage of the cell cycle in which the cell's _____ divides creating new cells.