Cell Reproduction: Mitosis/Meiosis

In order to maintain homeostasis, cells must reproduce to replace dead or sick cells, and to add more cells if the organism is growing.

Directions: (1) Draw and complete the diagram of the Cell Cycle on the front of the cardstock provided. Use your textbook to find the information to complete the diagram. Copy the information below the diagram – including the questions/answers under your completed Cell Cycle diagram. (2) Copy the concept map comparing mitosis and meiosis exactly as it is show below on the back of the cardstock. Remember to put a complete header on the front of your cardstock!

THE CELL CYCLE

Living organisms are constantly making new cells. They make new cells in order to grow and also to replace old dead cells. The process by which new cells are made is called cell division. Cell division is occurring all the time. Around two trillion cell divisions occur in the average human body every day!

Questions

- Why are you bigger now than you were born?
  Answer: Cells divide and take up more space

- Why do cells divide instead of growing?
  Answer: Large cells have reduced SA:VOL ratio = less efficient than smaller cells

- What needs to happen for you to grow?
  Answer:
  1) More cells need to be produced
  2) Each cell needs a copy of the organism’s DNA
  3) Each cell needs copies of organelles to perform all functions
COMPARING CELL REPRODUCTION: MITOSIS VERSUS MEIOSIS

**Mitosis**
- Begins with a **Diploid** cell
- Occurs in **Body Cell** (Somatic Cell)
- Consists of **One Cell Division**
- Forming **2 diploid cells**
- Having the **SAME** number of **Chromosomes** as the **Original Cell**

**Meiosis**
- Begins with a **Diploid** cell
- Occurs in **Gamete Producing Cells**
- Consists of **Two Cell Divisions**
- Forming **4 haploid cells**
- Having **HALF** the number of **Chromosomes** as the **Original cell**
Directions: Draw and complete the diagram of the Cell Cycle on the front of the cardstock provided.