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Chapter 11: Cell Growth and Division

Chapter Review Packet (Pgs.336-365)

SC.912.L.16.8: Explain the relationship between mutation, cell cycle, and uncontrolled cell growth potentially resulting in cancer.

SC.912.L.16.14: Describe the cell cycle, including the process of mitosis. Explain the role of mitosis in the formation of new cells and its importance in maintaining chromosome number during asexual reproduction.

SC.912.L.16.16: Describe the process of meiosis, including independent assortment and crossing over. Explain how reduction division results in the formation of haploid gametes or spores.

SC.912.L.16.17: Compare and contrast mitosis and meiosis and relate to the processes of sexual and asexual reproduction and their consequences for genetic variation.

**Vocabulary:**

Cell division-

Asexual reproduction-

Sexual reproduction-

Chromosome-

Chromatin-

Cell Cycle-

Interphase-

Mitosis-

Cytokinesis-

Chromatid-

Centromere-

Centriole-

Growth factor-

Cyclin-

Apoptosis-

Cancer-

Tumor-

Embryo-

Differentiation-

Totipotent-

Blastocyst-

Stem cell-

**Questions:**

 Describe what is meant by each of the following terms: *cell volume, cell surface area, ratio of surface area to volume*.

What is the relationship between interphase and cell division? Briefly describe the Cell Cycle and its phases and recreate the diagram, Figure 11-8, on page 345.

List the following stages of mitosis in the correct sequence, and describe what happens during each stage: anaphase, metaphase, prophase, and telophase.

A Cells growth and division can be regulated by a couple of factors. Complete the chart below regarding the regulation of cell division:

|  |  |
| --- | --- |
| Internal Regulator | External Regulator |
| Description: | Description: |
| Example: | Example: |

How do cancer cells differ from noncancerous cells? How are they similar?

What is cell differentiation? What is the connection between cell differentiation and stem cells? Explain.

Recreate Figure 12-17, on page 395 of the process of Meiosis:

What is “crossing-over?” In what process, and where does it occur? Why is this significant?