**Cell Division Unit Plan**

Start Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_End Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Unit Test/Project Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit Objectives**:

1.Describe the main events in the cell cycle: interphase, mitosis, cytokinesis

2.List in order and describe the stages of mitosis: prophase, metaphase, anaphase, telophase.

3.Compare and contrast mitosis and meiosis.

4.Compare/contrast cell division in main types of cells: prokaryote, plant,

animal cells.

5.Determine why and when cells need to divide.

**Pre-assessments:**

A.Pre-test vocab quiz

B.Circle the number that best shows how well you understand each topic BEFORE starting any new activities. 1=I have a lot of knowledge, could easily explain and demonstrate understanding; 2=know something about it, but would need to refresh/review before giving a full explanation or demonstrating understanding; 3=know little or nothing about the topic, need to spend some/a lot of time to learn about the topic to demonstrate understanding.

**Essential Questions:**

1.What are the names of each part of the cell cycle and events that occurs in each?

2.What are the similarities and differences of cell division in different types of organisms?

3.Why do cells need to divide and how do they know when to?

4.How does meiosis maintain the chromosomal number from one generation to the next?

**Vocabulary: (30 words)**

Anaphase, cell division, centrioles, chromatids, cleavage furrow, cytokinesis, diploid, gametes, homologous, metaphase, prophase, sexual reproduction, telophase, cell cycle, cell plate, centromeres, chromosomes, crossing over, daughter cell, equator, haploid, interphase, meiosis, mitosis, spindle, tetrad, binary fission, spermatogenesis, oogenesis, polar body

**Topics:** (\*review topics—you do not need to write a separate SoUL, but MUST include the information in other SoULs)

1.1 2 3 \***Structures involved in cell division**—nucleus, centrioles, cytoskeleton, microtubules, cell membrane, chromosomes

CHOICES: Read textbook Ch7 pgs175-176, 181-183; Read Ch10 pg 244-245

2.1 2 3 **Cell Division**—cell cycle, interphase, mitosis, prophase, metaphase, anaphase, telophase, cytokinesis, daughter cell, equator, centrioles, centromeres, chromosomes,

cleavage furrow, spindle, cell division, chromatids,

CHOICES: Read textbook Ch 10 pgs 245-248, Cell division and reproduction class notes, Cell cycle foldable, Mitosis animations on class website, mitosis video lectures on class website, cell cycle color sheet, Mitosis color sheet, Mitosis plate model, Mitosis sequence worksheet, cell division sim lab, mitosis flipbook, cell reproduction concept map OR crossword puzzle, 3 venn diagram prokaryote/plant/animal cells

3.1 2 3 **Meiosis**—stages, crossing over, spermatogenesis, oogenesis, polar body, haploid, diploid, sexual reproduction, tetrad, gametes, chromosome number maintenance

CHOICES: Read textbook Ch 11-4 pgs 275-278, meiosis class notes, meiosis color sheet, meiosis flowchart, spermatogenesis/oogenesis class notes, meiosis video lecture on class website, meiosis animation on class website

4.1 2 3 **Mitosis vs meiosis**

CHOICES: Read textbook Ch 11 pg 278, mitosis/meiosis venn diagram, mitosis/meiosis layout lab

5. 1 2 3 **Why cells divide and when**—effects of cell size, control of the cell cycle, what happens when out of control, causes for them to divide

CHOICES: Read textbook Ch 10-1 pgs 241-243, Read textbook Ch 10-3 pgs

250-252, class notes

**Assessments:**

Vocab flashcards Vocab quiz

4 SoULs Venn diagrams Regular Unit Test

Mandatory—Cell Division Sim lab Complex model series

Mandatory—Mitosis/meiosis layout lab Layout lab with questions