**Unit 4: Cell Division**  Chapter 5: Cell Growth and Division

What Do I Need To Know? Chapter 6.1 & 6.2 Meiosis

|  |
| --- |
| **SB1. Obtain, evaluate, and communicate information to analyze the nature of the relationships between structures and functions in living cells.**  *b. Develop and use models to explain the role of cellular reproduction (including binary fission, mitosis, and meiosis) in maintaining genetic continuity.*  **SB2.****Obtain, evaluate, and communicate information to analyze how genetic information is expressed in cells.**  *b. Construct an argument based on evidence to support the claim that inheritable genetic variations may result from:*   * *new genetic combinations through meiosis (crossing over, nondisjunction)*   **SB3. Obtain, evaluate, and communicate information to analyze how biological traits are passed on to successive generations.**  *c. Construct an argument to support a claim about the relative advantages and disadvantages of sexual and asexual reproduction.* |
| 1. Compare and contrast Asexual reproduction (mitosis & binary fission) with sexual reproduction (meiosis) using a Venn diagram. 2. What is the process in which bacteria/prokaryotes reproduce? Describe the shape of their DNA. 3. What is cancer? What causes it? What does it do to normal cells? 4. Sketch a graph showing a normal cell’s growth versus a cancerous cell. 5. Explain why the cell cannot grow very large and must divide. 6. What occurs in Interphase? 7. List the 3 phases of interphase and describe what occurs in each. 8. Draw sister chromatids/homologous chromosomes. Label the centromere, chromatids, & sister chromatids. 9. What are spindle fibers and what do they do in cell division? 10. What organelle involved in mitosis is only found in animal cells? 11. In mitosis, how are the daughter and the parent cells related regarding their chromosome numbers? 12. What is mitosis? How many daughter cells are produced? What type of cells? 13. What are the 4 steps of Mitosis? 14. What is cytokinesis? 15. What is the difference between a plant and animal cell in regards to cytokinesis? 16. What is the protein that regulates the cell cycle? 17. What is the difference between haploid and diploid? 18. What is a tetrad? Draw and describe it. When does it form? 19. What is apoptosis? Explain an example. 20. What is meiosis? How many daughter cells are produced? What type of cells? 21. What kind of traits do homologous chromosomes/sister chromatids code for, SAME or DIFFERENT? 22. How many chromosomes are in an adult organisms autosome/somatic/body cells? Is this Haploid or Diploid? 23. How many chromosomes are in a gamete? Is this Haploid or Diploid? 24. How many autosome/somatic/body chromosomes does a gamete have? 25. How many sex chromosomes does a gamete have? 26. Draw a picture that shows 2 homologous chromosomes crossing over. 27. In meiosis, how are the daughter and the parent cells related regarding their chromosome numbers? 28. Draw a cell in Anaphase 1 and Anaphase 2 of meiosis. How are they different? 29. What is crossing over? What is its purpose? When does it occur? 30. Oogenesis will produce what type and how many gametes? 31. Spermatogenesis will produce what type and how many gametes? 32. Draw a picture of Metaphase 1 and Metaphase 2 in meiosis. How are they different? 33. Draw the difference in meiosis between males and females. (Females=XX, Males=XY) 34. What is fertilization? Draw a picture of it on the cellular level (sperm & egg). 35. What is a stem cell? How is it useful in medicine? |

My Unit 4 Cell Division test is on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What should I use to study for my test?**

* *PowerPoint notes*
* *This study guide*
* *The links on the blog*
* *Handouts given in class*