

Study Guide – Mitosis / Meiosis Unit Test

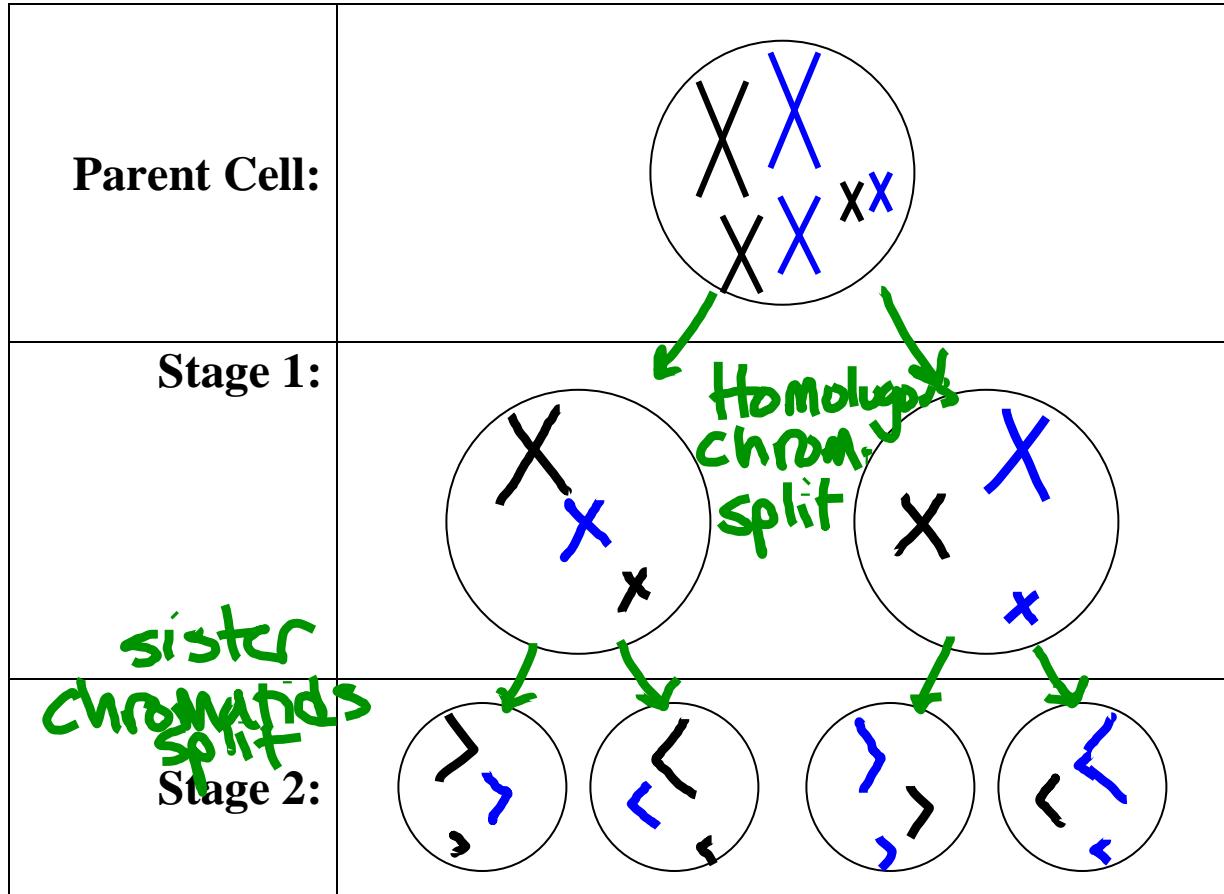
Biology

Using your own sheet of paper, respond to the following questions. This assignment is due on Monday, March 17 (1st / 7th period) or Tuesday, March 18 (4th period).

- For the following diploid cell with three chromosomes, illustrate the indicated phases of mitosis. The size of the chromosome represents the chromosome number (the largest chromosome is #1; the second largest is #2; the smallest is #3) and the color indicates the parental origin (black is from mom, blue is from pop):

Prophase:	
Metaphase:	
Anaphase:	
Telophase:	

2. For the following diploid cell with three chromosomes, illustrate the end products of stage 1 and stage 2 of meiosis. The size of the chromosome represents the chromosome number (the largest chromosome is #1; the second largest is #2; the smallest is #3) and the color indicates the parental origin (black is from mom, blue is from pop):



3. For mitosis, when does DNA replication occur? **BEFORE**
4. For meiosis, when does DNA replication occur? **BEFORE**
5. How many daughter cells are produced during a mitotic cell division? **2**
6. How many daughter cells are produced during a meiotic cell division? **4**
7. Describe the genetic relationship as either “identical” or “not identical” between:
- The parent cell and the daughter cells of a mitotic cell division **ID.**
 - The parent cell and the daughter cells of stage 1 during a meiotic cell division **NOT ID.**
 - The parent cell and the daughter cells of stage 2 during a meiotic cell division **NOT ID.**
 - The two daughter cells of stage 1 during a meiotic cell division **NOT ID.**
 - The four daughter cells of stage 2 during a meiotic cell division (compare all the cells to each other) **0 = 0 ≠ 0 = 0**

8. What is the main purpose of a mitotic cell division? In other words, when is mitosis needed by organisms?

GROW, REPLACE, OR REPAIR CELLS ★

9. What is the main purpose of a meiotic cell division? In other words, what is the ultimate function of the cells that an organism produces during meiosis?

**TO PRODUCE GAMETES - CELLS
USED SPECIFICALLY FOR
REPRODUCTION**

★ WITHIN THE SAME ORGANISM