Amoeba Sisters | Video Recap

NAME: Wendy Travis

Amoeba Sisters Video *Select* Recap: *Mitosis vs. Meiosis Comparison*

The cells that undergo mitosis and meiosis have some similarities and some differences. For the following statements, decide whether you should circle mitosis, meiosis, or both

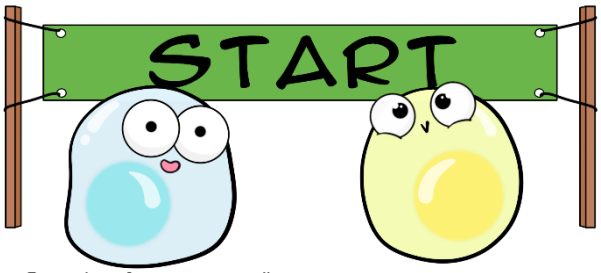
1. In humans, the starting cell **in this process** has 46 chromosomes.
MITOSIS MEIOSIS BOTH

2. A stomach cell would be an example of a starting cell **in this process**.
MITOSIS MEIOSIS BOTH

3. The starting cell **in this process** will have twice the number of chromosomes as the final daughter cells.
MITOSIS MEIOSIS BOTH

4. The starting cell **in this process** will be diploid.
MITOSIS MEIOSIS BOTH

5. The starting cell **in this process** will be identical to the daughter cell.
MITOSIS MEIOSIS BOTH

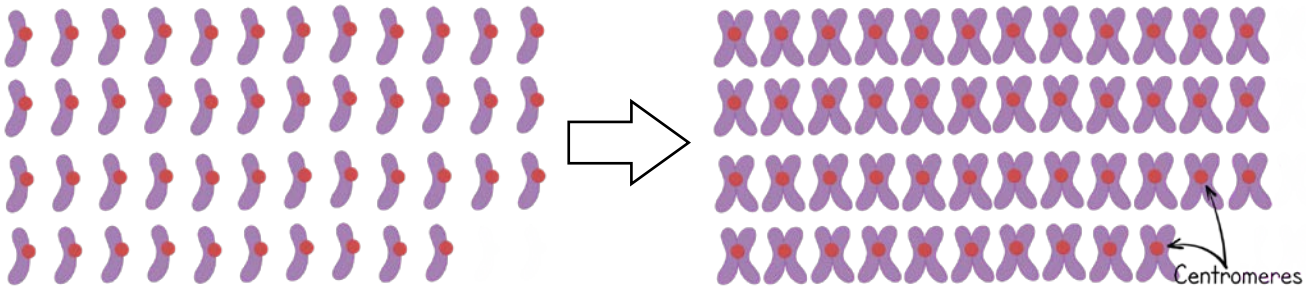


Example of starting cell in **mitosis**: skin cell

Example of starting cell in **meiosis**: primary spermatocyte (males) or primary oocyte (females)

6. The starting cell must duplicate its chromosomes in **interphase** before mitosis or meiosis can begin. Does this change the number of **chromosomes**? **Chromatids**? Both? How many of each would you expect in a human cell after **interphase**?

it does not change the number of chromosomes but it doubles the number of chromatids so during interphase we would have 46 chromosomes but 92 chromatids



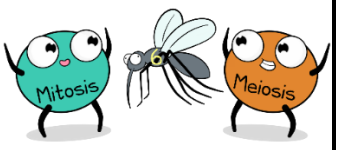
Consider a mosquito with six chromosomes for the next questions. This info will be used for illustrations on the next page.

7. What would the function of **mitosis** be in the mosquito? to help grow or make the cells to meet the functions of the mosquito

8. How many **chromosomes** would you expect to be in the daughter cells of the mosquito after **mitosis**? 6

9. What would the function of **meiosis** be in the mosquito?

to reproduce



10. How many **chromosomes** would you expect to be in the daughter cells of the mosquito after **meiosis**? _____

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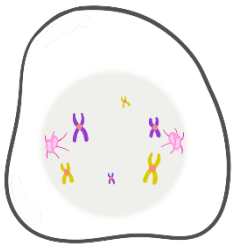
*In the blank white spaces, create your own illustrations of mitosis (on left in each box) or meiosis (on right in each box) for an organism with six chromosomes. Some have been completed for you. Then, write **2 comparison sentences** comparing the two stages.*

PROPHASE PROPHASE I



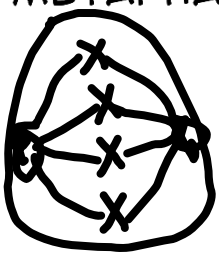
P M A T

P_1 M_1 A_1 T_1 P_2 M_2 A_2 T_2

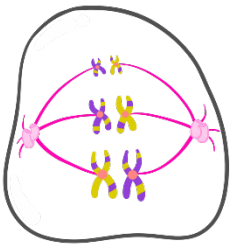
11. Comparison:

meiosis goes in pairs in contrast to mitosis

METAPHASE METAPHASE I



P M A T

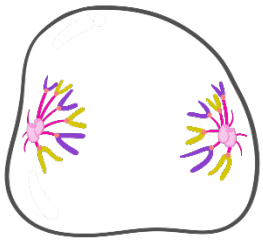


P_1 M_1 A_1 T_1 P_2 M_2 A_2 T_2

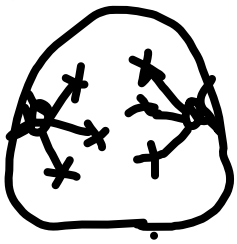
12. Comparison:

meiosis does line up just like mitosis but is also does cross over

ANAPHASE ANAPHASE I



P M A T

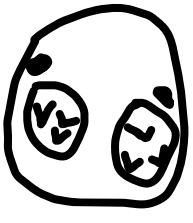


P_1 M_1 A_1 T_1 P_2 M_2 A_2 T_2

13. Comparison:

they both pull away one meiosis with chromosomes and mitosis with chromatids

TELOPHASE TELOPHASE I



P M A T

P_1 M_1 A_1 T_1 P_2 M_2 A_2 T_2

14. Comparison

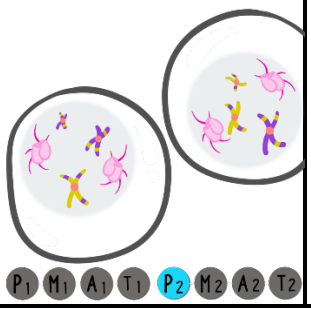
both form nuclei walls

15. What is the **splitting of the cell's cytoplasm** that occurs after telophase called? cytokineses

16. Did **crossing over** occur in both mitosis, meiosis, or both? meiosis When? metaphase

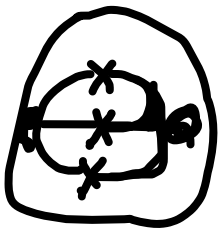
*Now to continue on to **meiosis II!** Create your own illustrations to show your understanding of **meiosis II.***

Prophase II *(Example)*

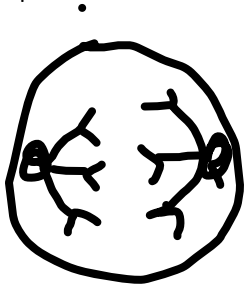


P_1 M_1 A_1 T_1 P_2 M_2 A_2 T_2

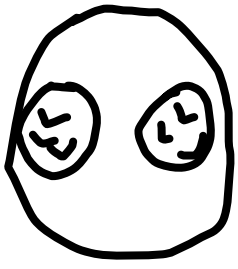
17. Metaphase II



18. Anaphase II



19. Telophase II



20. What are **3 differences** between the daughter cells made from **mitosis** vs. the daughter cells made from **meiosis**?