



Amoeba Sisters | Video Recap

NAME: _____

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.

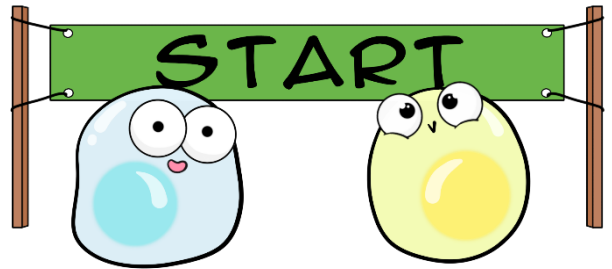
MITOSIS MEIOSIS BOTH

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.

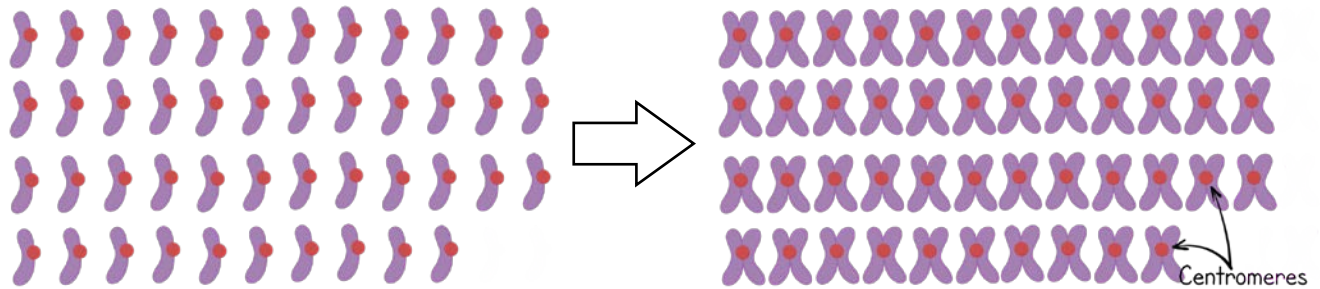
MITOSIS MEIOSIS BOTH



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**?

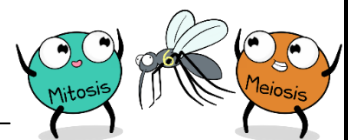


Consider a mosquito with six chromosomes for the next questions. This info will be used for illustrations on the next page.

7. What would the function of **mitosis** be in the mosquito? _____

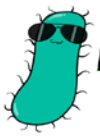
8. How many **chromosomes** would you expect to be in the daughter cells of the mosquito after **mitosis**? _____

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



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



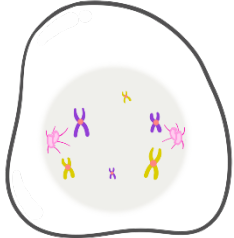
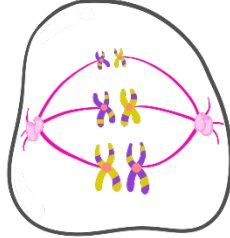
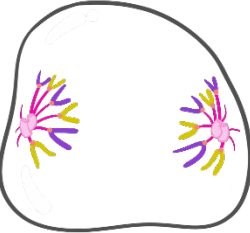



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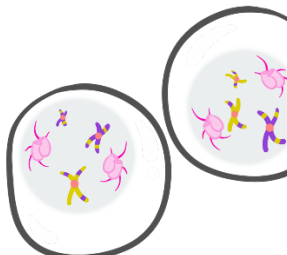
In the blank white spaces, create your own illustrations of mitosis (on left in each box) or meiosis (on right in each box) for an organism with six chromosomes. Some have been completed for you. Then, write 2 comparison sentences comparing the two stages.

<p>PROPHASE PROPHASE I</p>  <p>P M A T P₁ M₁ A₁ T₁ P₂ M₂ A₂ T₂</p> <p>11. Comparison:</p>	<p>METAPHASE METAPHASE I</p>  <p>P M A T P₁ M₁ A₁ T₁ P₂ M₂ A₂ T₂</p> <p>12. Comparison:</p>
<p>ANAPHASE ANAPHASE I</p>  <p>P M A T P₁ M₁ A₁ T₁ P₂ M₂ A₂ T₂</p> <p>13. Comparison:</p>	<p>TELOPHASE TELOPHASE I</p>  <p>P M A T P₁ M₁ A₁ T₁ P₂ M₂ A₂ T₂</p> <p>14. Comparison</p>

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

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

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

<p>Prophase II (Example)</p>  <p>P₁ M₁ A₁ T₁ P₂ M₂ A₂ T₂</p>	<p>17. Metaphase II</p>	<p>18. Anaphase II</p>	<p>19. Telophase II</p>
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20. What are **3 differences** between the daughter cells made from **mitosis** vs. the daughter cells made from **meiosis**?

