Science 9

Biology V

Name:
Date:
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1. **Meiosis**
2. **Stages of Meiosis**

Review:
In sexual reproduction, two cells called _____ combine together to form a _____ which will develop into an offspring. The male contributes one gamete called the sperm cell and the female contributes one gamete called the egg cell or ovum.
Gametes are considered _____ cells because they contain _____ the normal number of _____ an organism has. Regular _____ cells are _____ as they have the full number of chromosomes.

Meiosis

Cells that produce gametes undergo a type of cell division called _____.

What is meiosis?
_____ is a process that occurs when a _____ cell _____ _____ to produce _____ _____ cells. This happens during sexual reproduction. _____ are _____ _____ from parents and from one another (gametes from parents are not genetically the same).

- During meiosis, the sister chromatids (the two halves of a duplicated chromosome) needs to separate as well as the _____ _____ (the similar but non-identical chromosome pairs an organism receives from its two parents)

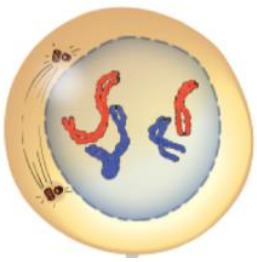
Before a cell begins meiosis, the cell must undergo _____.

- The cell _____ and _____ all of its chromosomes
- It is preparing itself for division

Once interphase is complete, meiosis can begin. Meiosis is split into two parts: _____ and _____

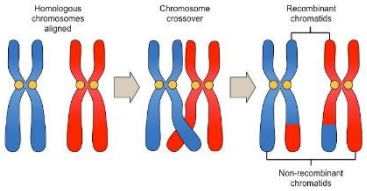
Stages of Meiosis

Meiosis I: _____



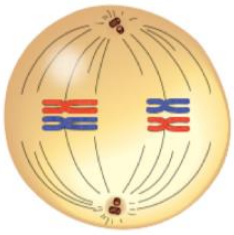
- _____ membrane begins to _____
- DNA condenses into duplicated chromosomes
- _____ _____ are _____
    - Homologous chromosomes are two pieces of DNA which carry the same genes, one from each parental source.
- _____ _____ begin to form

- A process called _____ _____ may occur between the homologous chromosomes.
    - Crossing over occurs when two homologous chromosomes pair up with each other and exchange different parts of their genetic material. This can lead to _____ in offspring.



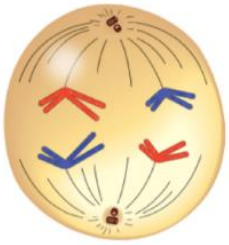
Meiosis I: _____

- Spindle fibers guide chromosome movement by _____ to the chromosome's _____.
- _____ _____ pairs line up along the _____ of the cell



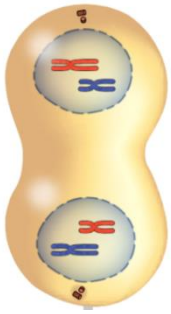
Meiosis I: _____

- _____ _____ pairs _____ and go to each end of the cell



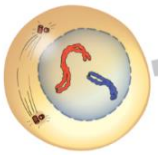
Meiosis I: _____

- _____ _____ form
- Each nucleus contains a complete copy of the cell's DNA



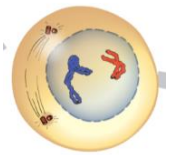
_____

- The cell will split in two and form _____ _____ daughter cells



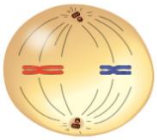
Meiosis II: _____

- _____ membrane begins to _____
- DNA exists as chromosomes
- _____ _____ begin to _____

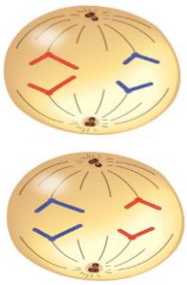


Meiosis II: _____

- Chromosomes line up along the _____ of the cell

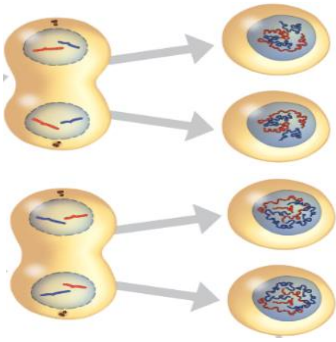


Meiosis II: _____



- Copies of DNA are _____ and go to each end of the cell
  - This time, it is the _____ _____ are _____ and pulled towards opposite poles of the cell

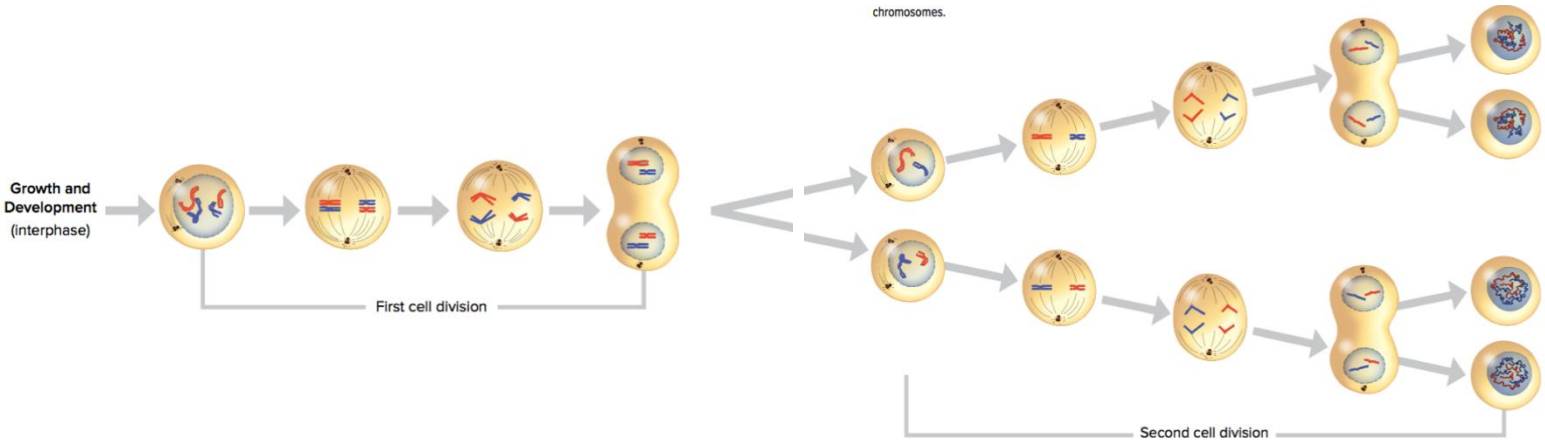
Meiosis II: _____



- _____ _____ form
- Nuclear membranes form around each set of chromosomes and the _____ _____.

_____

- Cell divides, forming _____ new _____ cells
  - For humans, the products of meiosis would be _____



Meiosis: Division Summary

Meiosis produces four haploid cells from one diploid cell. These haploid cells are the gametes that take part in sexual reproduction.