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Sexual Reproduction and Meiosis

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Notes: Sexual Reproduction and Meiosis

Sexual Reproduction

1. During sexual reproduction, two sex cells, sometimes called an egg and a sperm, come together.
2. Sperm are formed in the male reproductive organs.
3. Eggs are formed in the female reproductive organs.
4. The forming of a sperm and egg is call fertilization and the cell that forms is called a zygote.

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Diploid Cells

5. Your body forms two types of cells - body cells and sex cells.
6. When cells have pairs of similar chromosomes, they are said to be diploid.

Haploid Cells

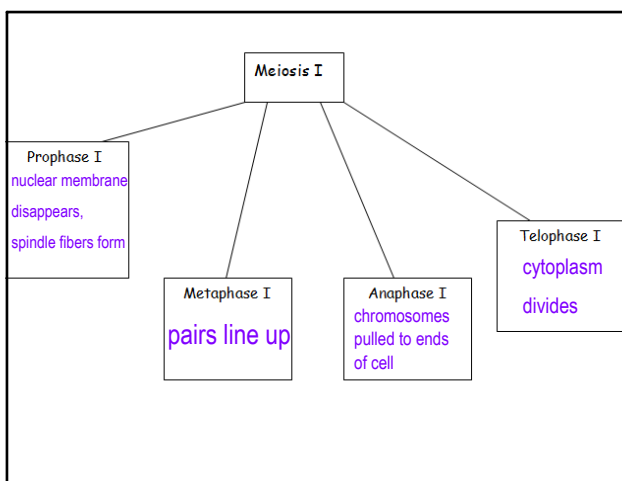
7. Sex cells do not have pairs of chromosomes, therefore they are said to be haploid.

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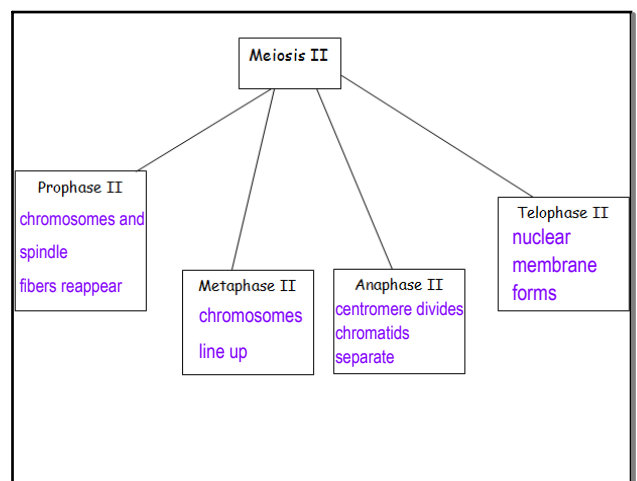
Meiosis and Sex cells

8. Meiosis - produces haploid sex cells
9. During meiosis, two divisions of the nucleus occur: meiosis I and meiosis II.
10. You get 23 chromosomes from your father and 23 from your mother.

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Prophase I

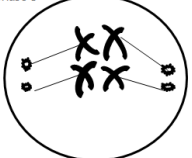


Prophase I

Before meiosis begins, the chromosomes are in a threadlike form. Each chromosome makes an identical copy of itself, forming two exact halves called chromatids. The chromosomes then thicken and shorten into a form that is visible under a microscope. The nuclear membrane disappears.

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Metaphase I

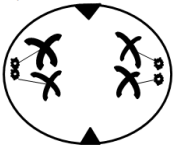


Metaphase I

Each chromosome is now made up of two chromatids the original and an exact copy. Similar chromosomes pair with one another, forming homologous chromosome pairs. The paired homologous chromosomes line up at the equator of the cell.

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Anaphase I

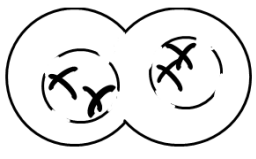


Anaphase I

The chromosomes separate from their homologous partners and move to opposite ends of the cell.

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Telophase I

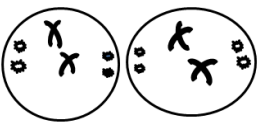


Telophase I

The nuclear membrane reforms and the cell divides. The paired chromatids are still joined.

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Prophase II

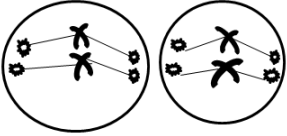


Prophase II

Each cell contains one member of each homologous chromosome pair. The chromosomes are not copied again between two cell divisions.

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Metaphase II

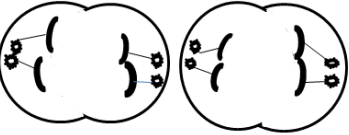


Metaphase II

The chromosomes line up in the middle of each cell.

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Anaphase II




Anaphase II

The chromatids pull apart and move to opposite ends of the cell. The nuclear membrane forms around the separated chromosomes, and the cells.

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Telophase II



Telophase II

The result: four new cells have formed from the original single cell. Each new cell has half the number of chromosomes present in the original cell.

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