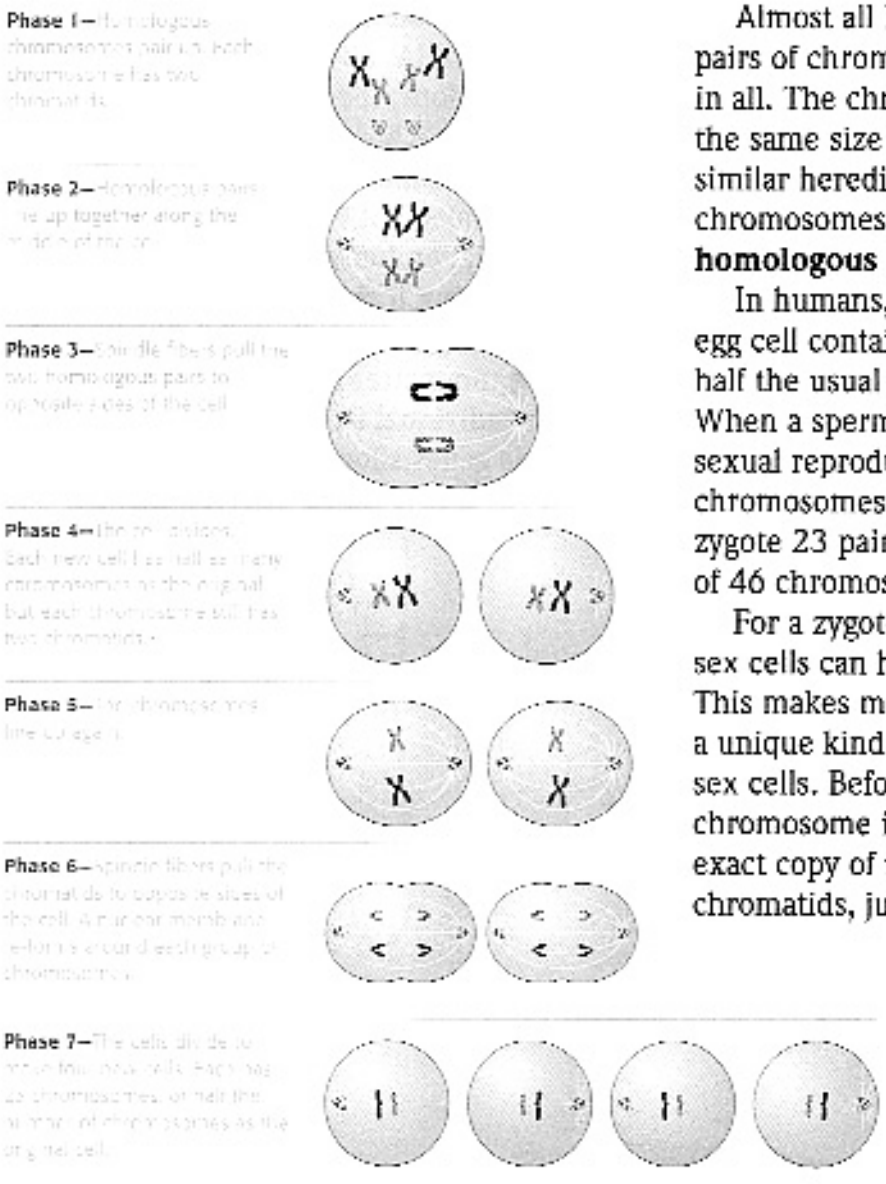
..LESSON..

7

Meiosis

What is meiosis and why is it necessary?



In meiosis, the chromosomes are copied once, but the nucleus divides twice.

Almost all human body cells contain 23 pairs of chromosomes, or 46 chromosomes in all. The chromosomes in each pair have the same size and shape. They also contain similar hereditary information. The two chromosomes in each pair are called **homologous chromosomes.**

In humans, each sperm cell and each egg cell contains 23 chromosomes, or one-half the usual number of chromosomes. When a sperm and an egg unite during sexual reproduction, the zygote receives the chromosomes from both. This gives the zygote 23 pairs of chromosomes, or a total of 46 chromosomes.

For a zygote to have 46 chromosomes, sex cells can have only half that number. This makes meiosis necessary. **Meiosis** is a unique kind of cell division that produces sex cells. Before meiosis begins, each chromosome in the nucleus makes an exact copy of itself, forming two identical chromatids, just like in mitosis.

Show What You Know

If an organism had 12 chromosomes in its body cells, how many chromosomes would be found in one of its sex cells?

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