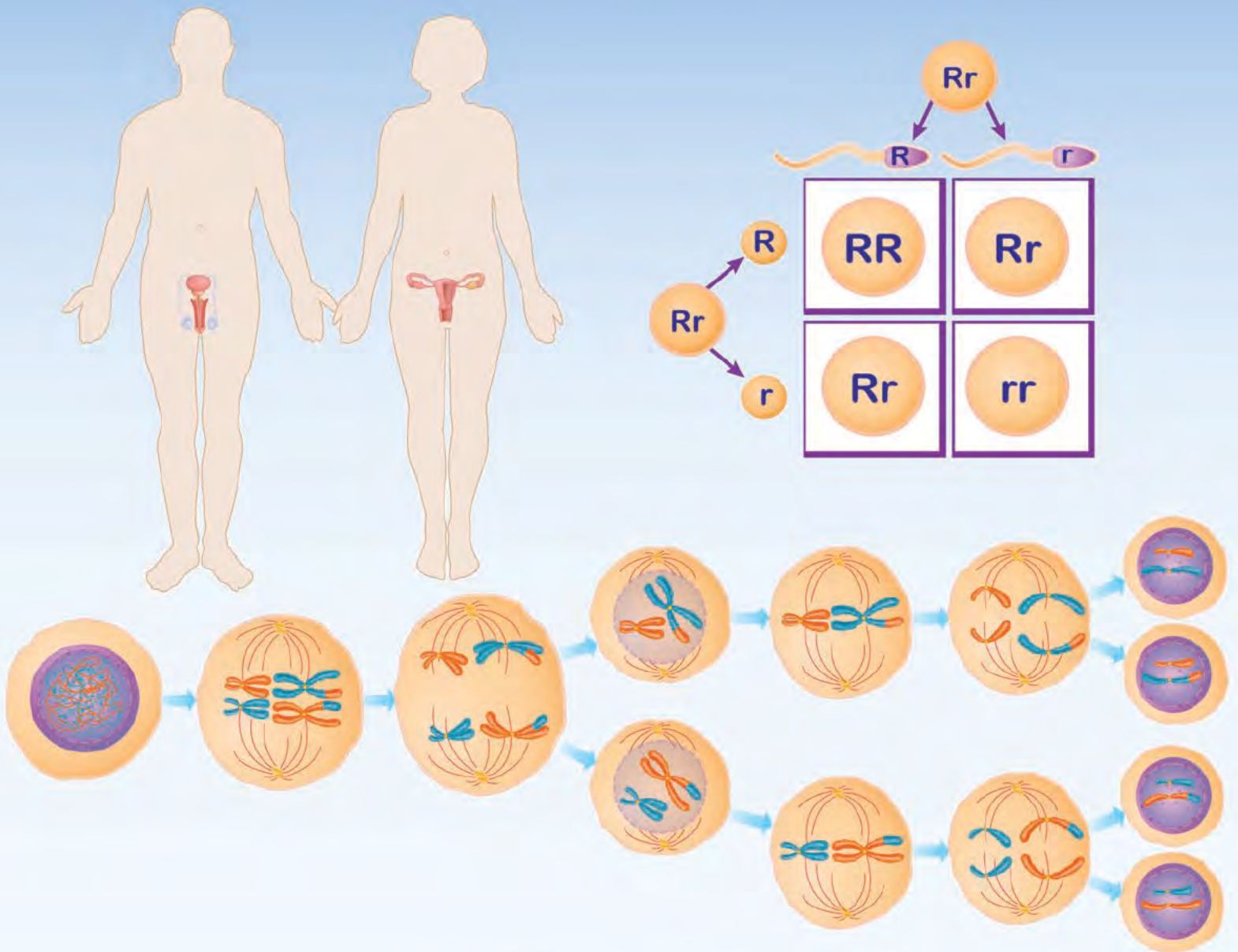


Meiosis: Creating Sex Cells *Learning Guide*



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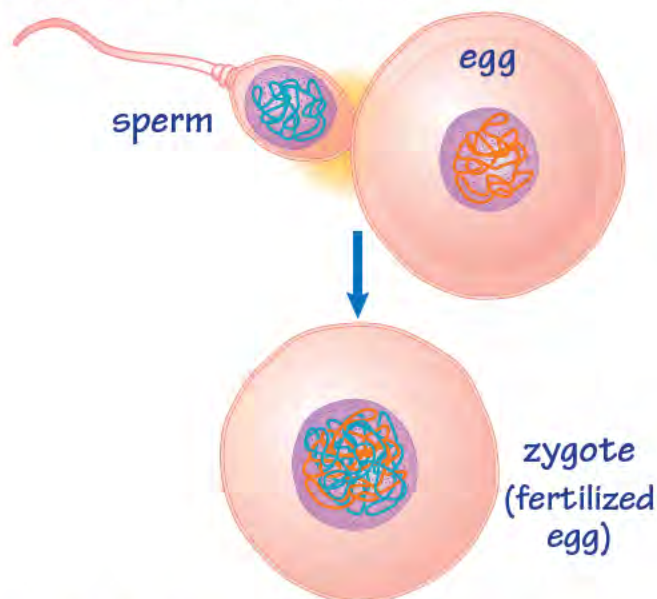
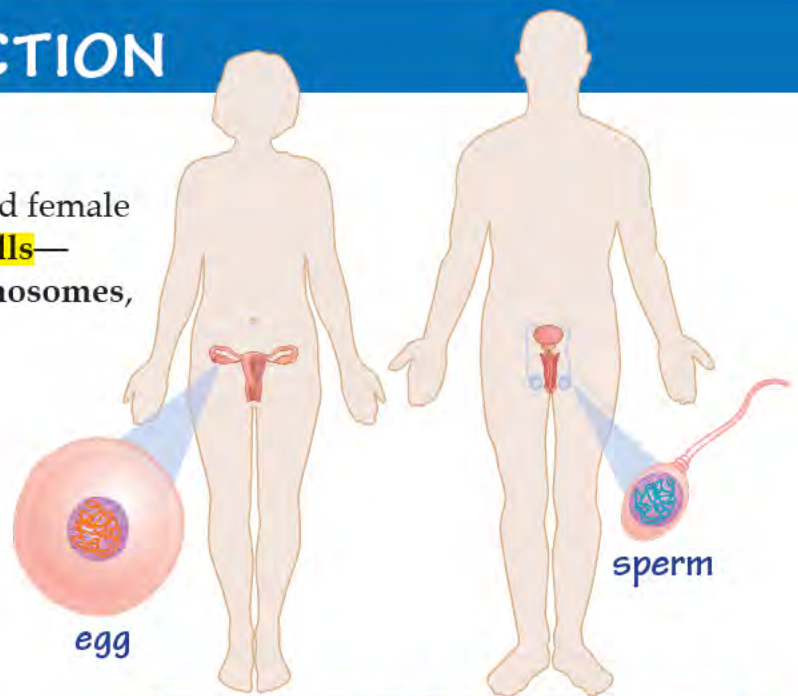
SEXUAL REPRODUCTION

Sex Cells- Sperm and Eggs

Meiosis is a process that occurs in male and female reproductive organs. **Meiosis** forms **sex cells**—**sperm** and **eggs**. These cells have **23 chromosomes**, half the number of chromosomes as the parent cell.

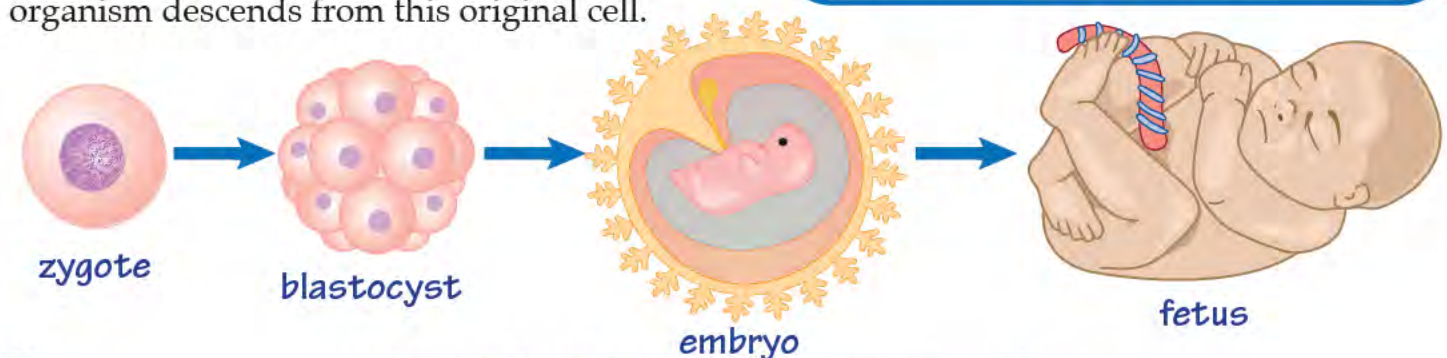
Fertilization

During **sexual reproduction**, a sperm fertilizes an egg, and the genetic information from the parents is combined. The **fertilized egg** is called a **zygote**, and has 46 chromosomes.

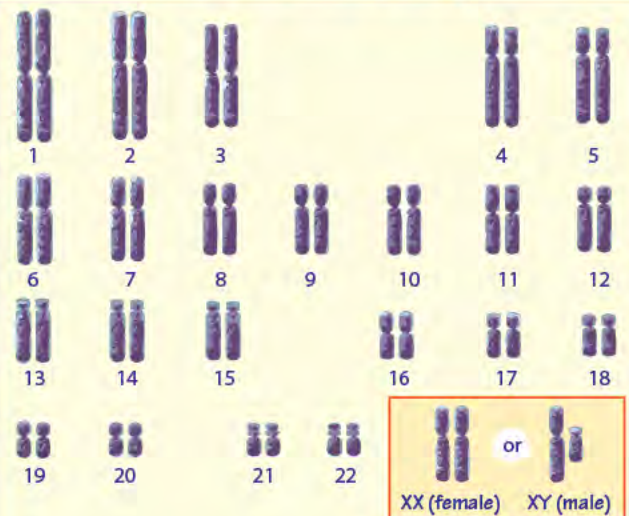


The Zygote

The **zygote** contains all the information needed to form a new organism. Every cell of the organism descends from this original cell.



Human Karyotype



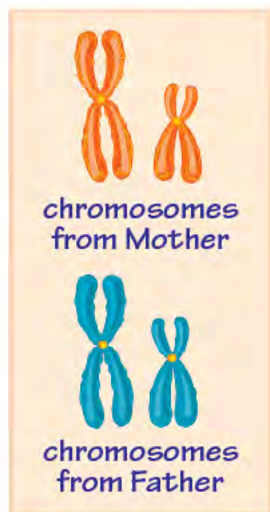
Humans have **46 chromosomes** that are present in **23 pairs**. One **chromosome** in each pair is inherited from the mother, and the other from the father.

MEIOSIS OVERVIEW

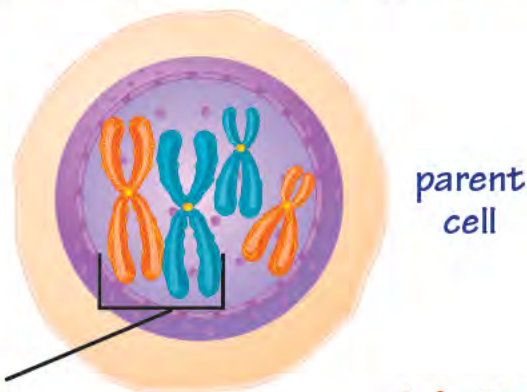
The process of **meiosis** is divided into two stages—**meiosis I** and **meiosis II**.

Meiosis I Overview

In **meiosis I**, **homologous pairs of chromosomes** are separated and two cells are formed.

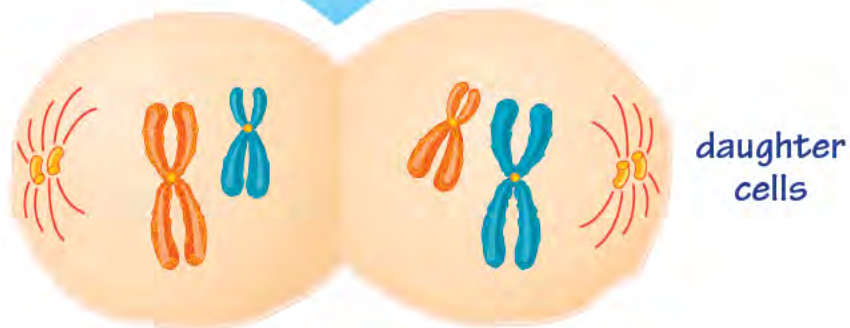


homologous pair of chromosomes



parent cell

Meiosis I

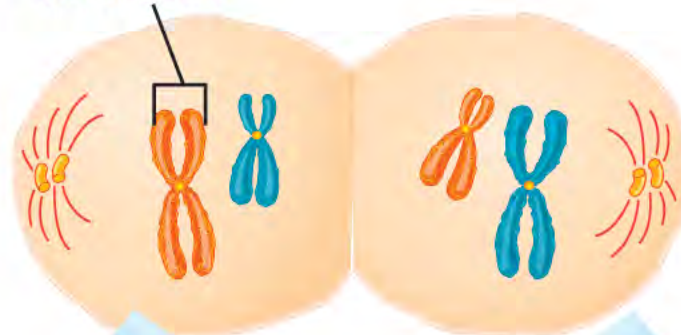


daughter cells

Meiosis II Overview

In **meiosis II**, **chromatids** are pulled apart, and another cell division occurs, resulting in four cells.

chromatids



daughter cells (from Meiosis I)

Meiosis II

sex cells

