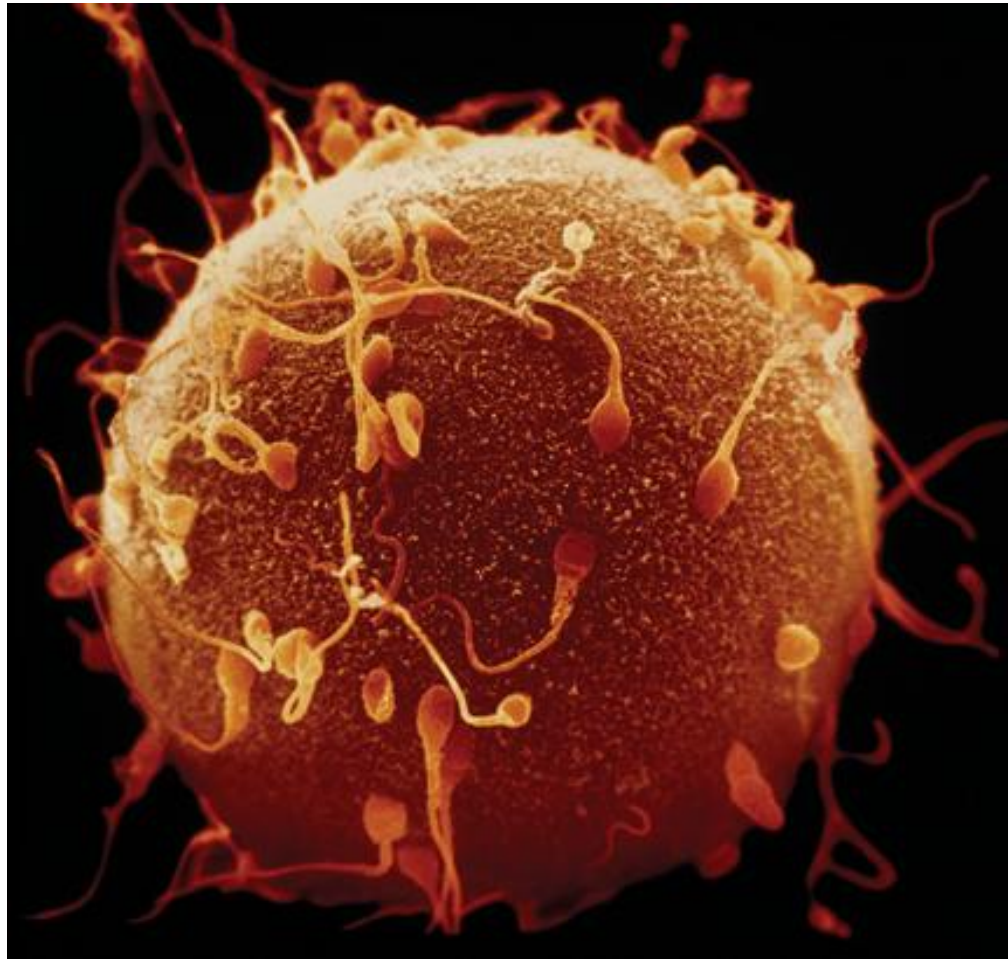


6.1 Chromosomes and Meiosis

KEY CONCEPT

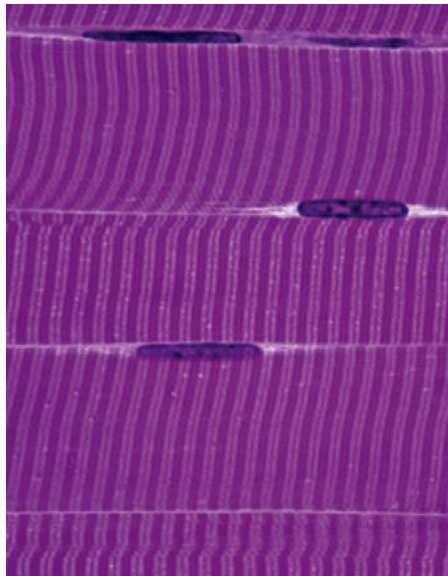
Gametes have half the number of chromosomes that body cells have.



6.1 Chromosomes and Meiosis

▶ You have body cells and gametes.

- Body cells are also called somatic cells.
- Germ cells develop into gametes.
 - Germ cells are located in the ovaries and testes.
 - Gametes are sex cells: egg and sperm.
 - Gametes have DNA that can be passed to offspring.



body cells



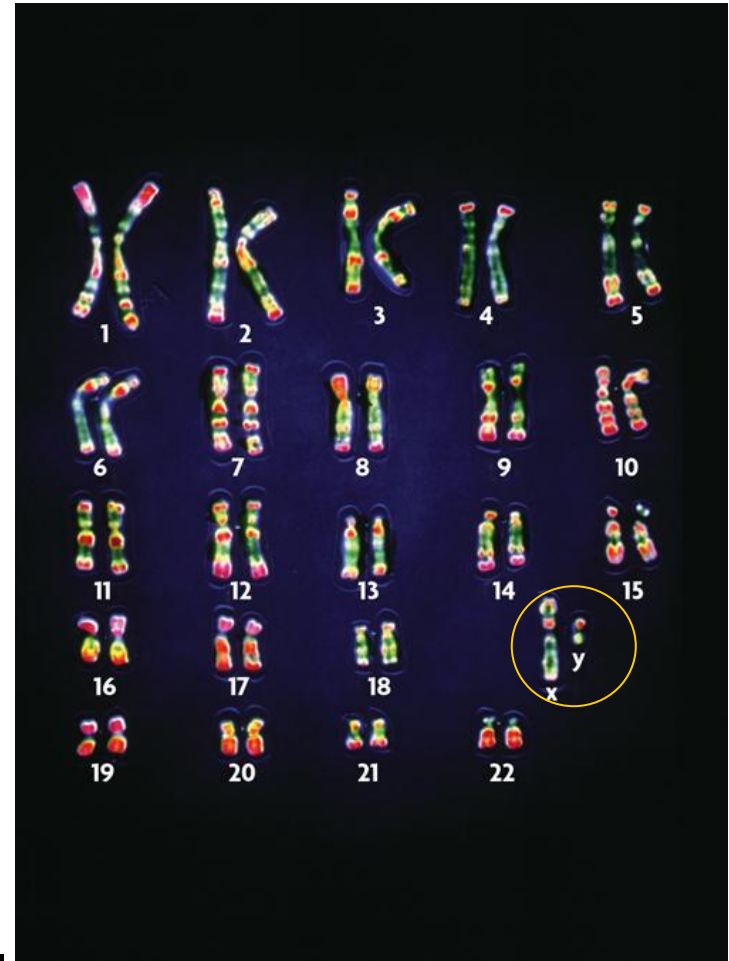
sex cells (sperm)

sex cells (egg)

6.1 Chromosomes and Meiosis

▶ Your cells have autosomes and sex chromosomes.

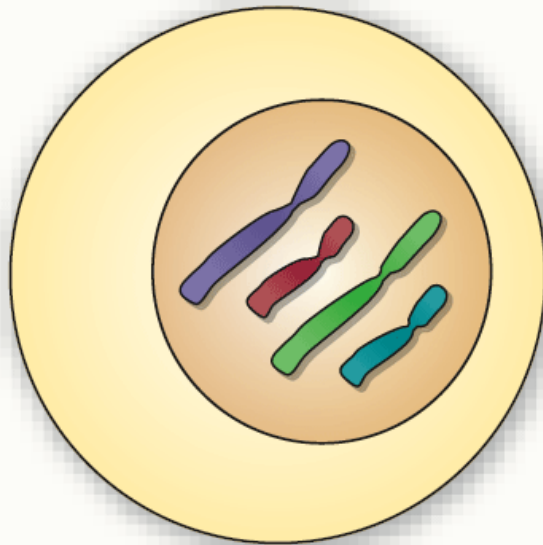
- Your body cells have 23 pairs of chromosomes.
 - Homologous pairs of chromosomes have the same structure.
 - For each homologous pair, one chromosome comes from each parent.
- Chromosome pairs 1-22 are autosomes.
- Sex chromosomes, X and Y, determine gender in mammals.



6.1 Chromosomes and Meiosis

▶ Body cells are diploid; gametes are haploid.

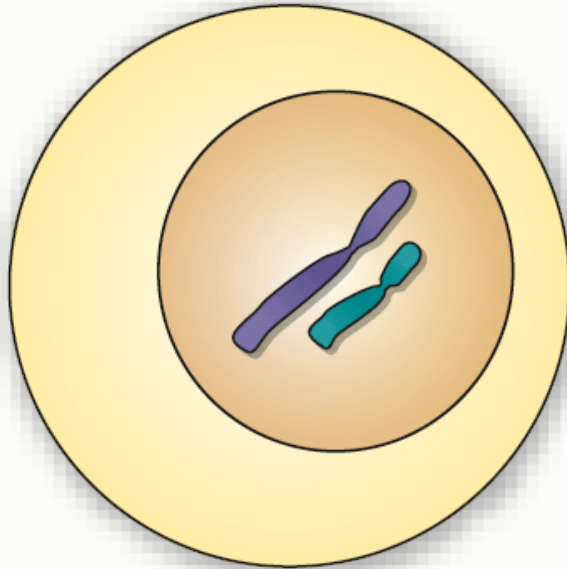
- Fertilization between egg and sperm occurs in sexual reproduction.
- Diploid ($2n$) cells have two copies of every chromosome.
 - Body cells are diploid.
 - Half the chromosomes come from each parent.



Body cells
are diploid ($2n$).

6.1 Chromosomes and Meiosis

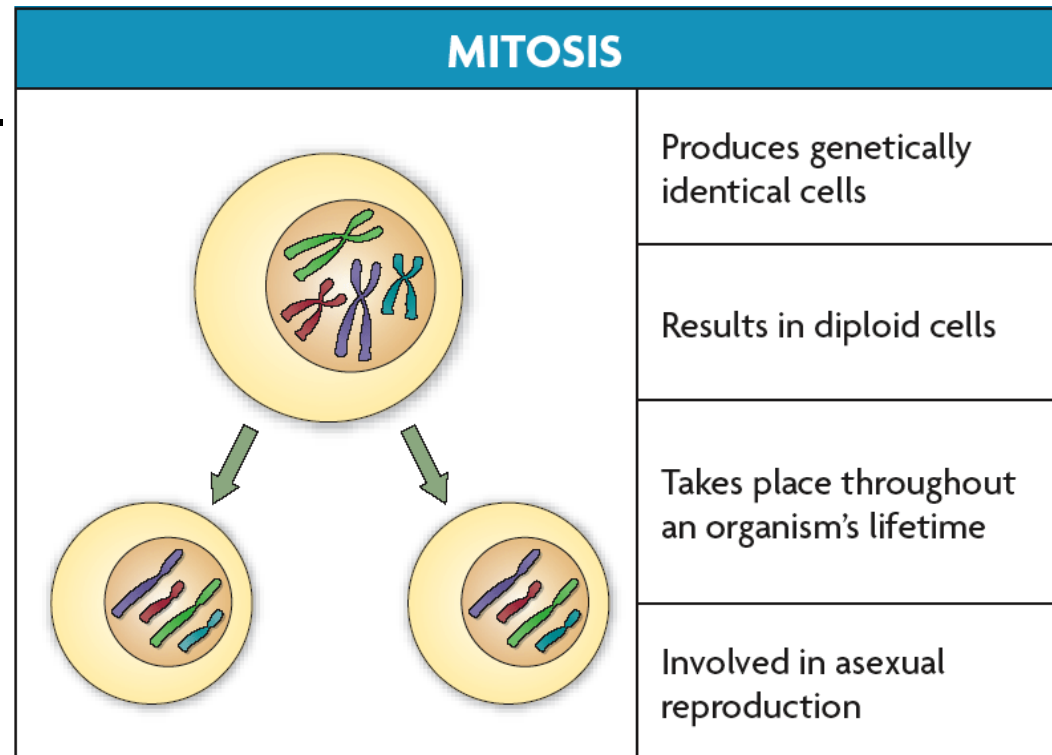
- Haploid (n) cells have one copy of every chromosome.
 - Gametes are haploid.
 - Gametes have 22 autosomes and 1 sex chromosome.



Gametes (sex cells) are haploid (n).

6.1 Chromosomes and Meiosis

- Chromosome number must be maintained in animals.
- Many plants have more than two copies of each chromosome.
- Mitosis and meiosis are types of nuclear division that make different types of cells.
- Mitosis makes more diploid cells.



6.1 Chromosomes and Meiosis

- Meiosis makes haploid cells from diploid cells.
 - Meiosis occurs in sex cells.
 - Meiosis produces gametes.

