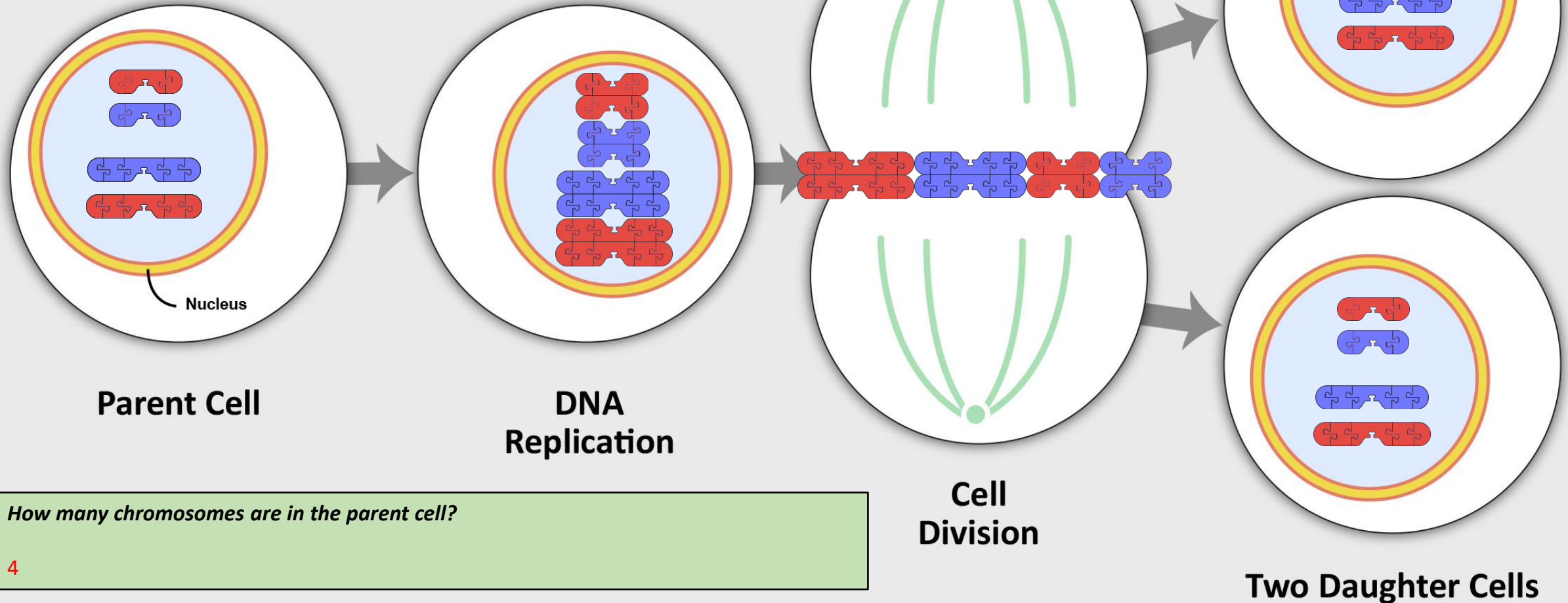


# Mitosis

Mitosis is a type of cell division that results in two daughter cells, each having the same number and kind of chromosomes as the parent cell.

1. Grab the chromosomes from the **parent cell** to fill in the other steps in mitosis, including **DNA replication**, **cell division** and the resulting two **daughter cells**.
2. Answer the question below and move to the next slide.

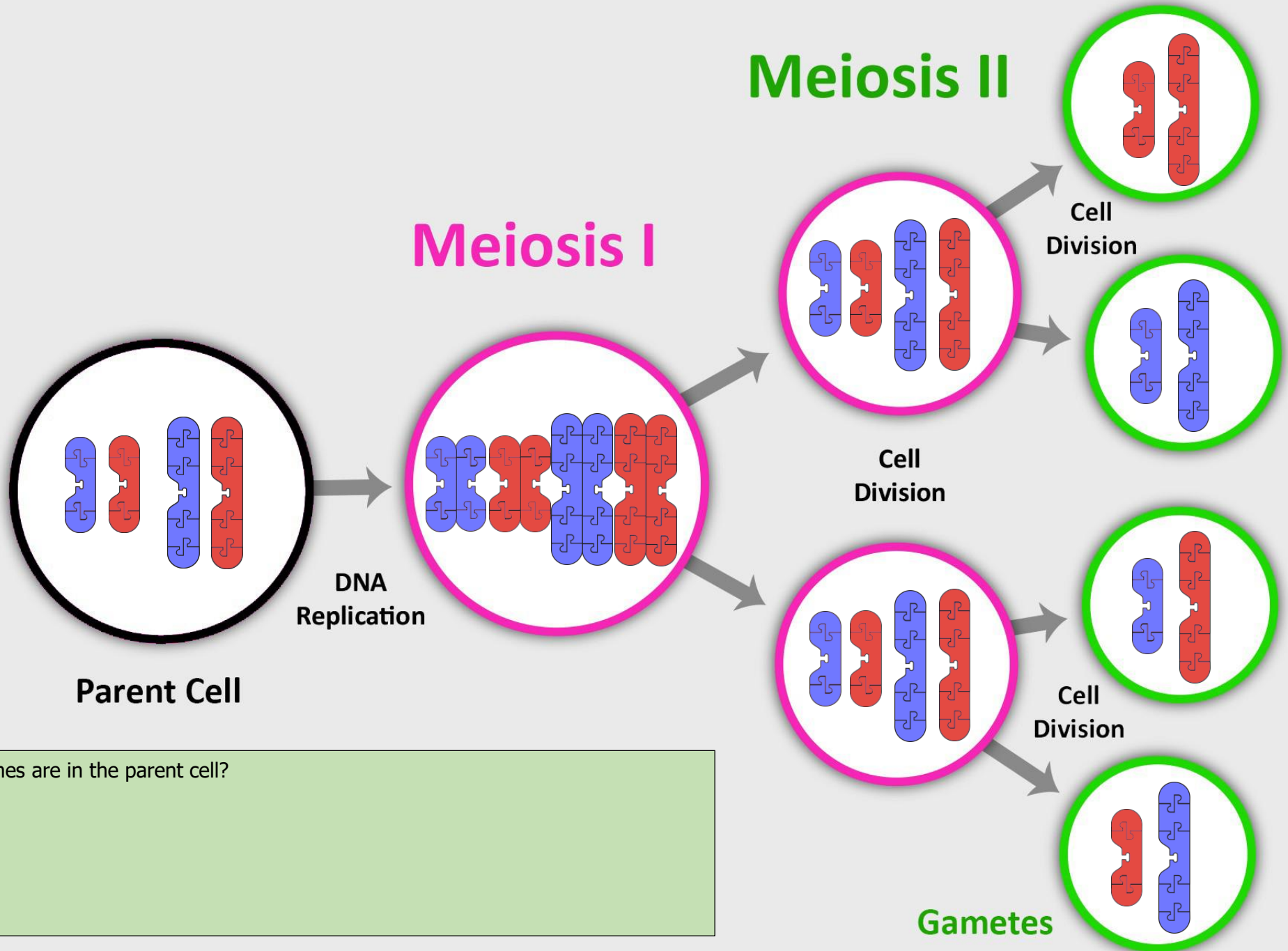


How many chromosomes are in the parent cell?

## Meiosis

**Meiosis** is a type of cell division that results in four **gamete (sex) cells**, each having half the number and kind of chromosomes as the parent cell.

1. Grab and place each of the chromosomes from the **parent cell** onto the other steps in meiosis, including **DNA replication** and **cell division** in **Meiosis I**, and a second round of **cell division** in **Meiosis II**.
2. Answer the question below and move to the next slide.



How many pairs of homologous chromosomes are in the parent cell?

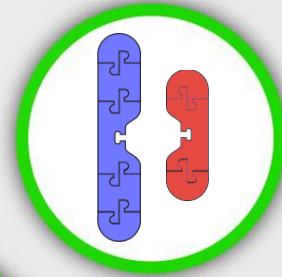
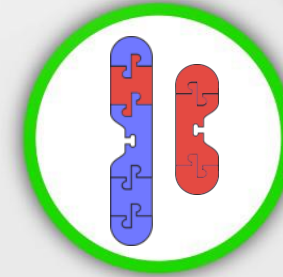
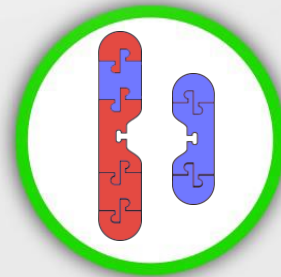
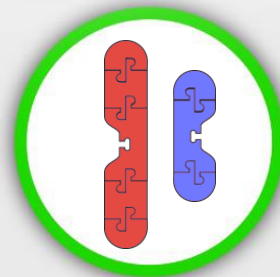
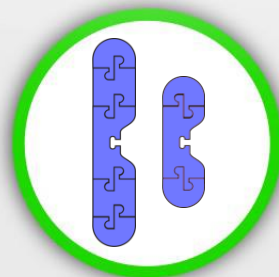
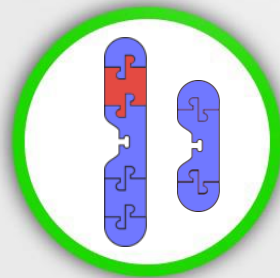
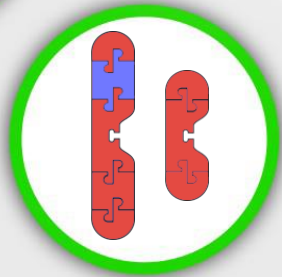
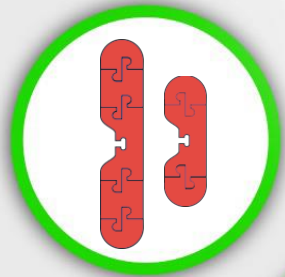
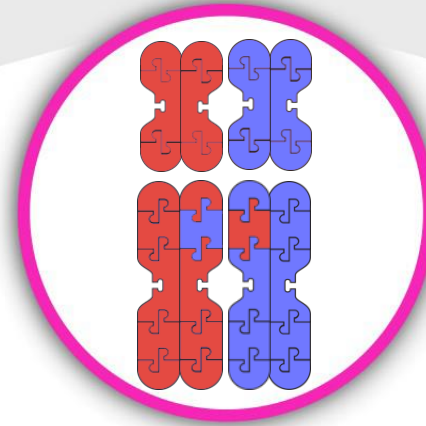
2 pairs of homologous chromosomes

# Independent Assortment in Meiosis

Meiosis results in **gametes**, cells that only carry one copy of each chromosome. Pairs of homologous chromosomes get sorted into gametes **independently** of one another.

1. Grab and place pieces from the magenta circle to show all possible combinations that could result from meiosis in a species with four chromosomes (two pairs of homologous chromosomes).
2. Move to the next slide and answer the activity questions.

Dividing Cell  
in Metaphase I



Possible Combinations of Chromosomes in Gametes

## Activity Questions

A koala somatic cell has a diploid ( $2n$ ) number of 16. How many chromosomes would be in each gamete (sex cell)?

8

If a cell had a diploid ( $2n$ ) number of 6, how many possible combinations of gametes could result from meiosis?

64