

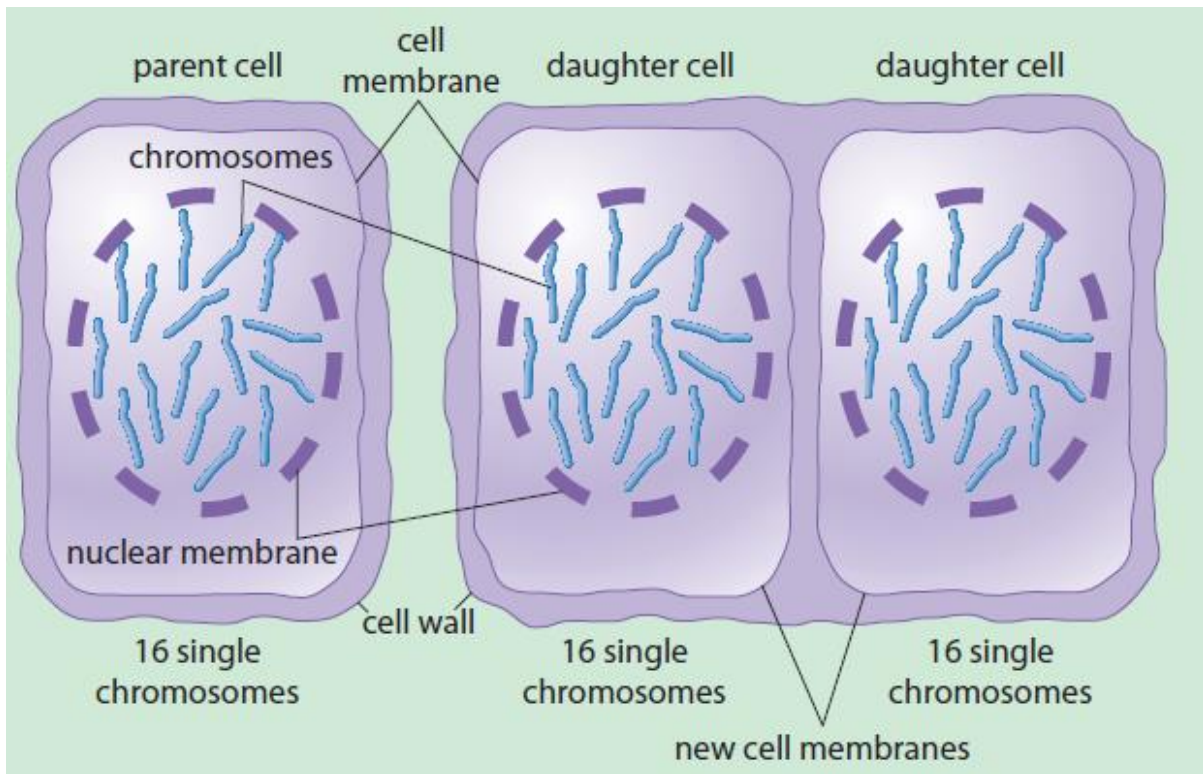
Cell Division

In order for most organisms to grow, repair damaged cells, and maintain their life functions, new cells are needed. Each new cell, or daughter cell, must contain the same genetic information as the original cell, or parent cell. How are these new, genetically identical cells produced?

PROCEDURE

1. The diagrams show onion root-tip cells before and after the cells have divided to form new cells. The tip of an onion root-tip is an active growing region. The cells in this region are actively dividing to produce new cells.

2. Study the diagrams. Compare the number and characteristics of the chromosomes in the parent cell to the number of chromosomes in the two daughter cells.



ANALYSIS

1. What do you notice about the number of chromosomes in the parent cell compared to the number of chromosomes in the two daughter cells?

2. What do you notice about the characteristics of each chromosome in the three cells?

3. How do you think it is possible to start with 16 chromosomes in the parent cell and end up with 16 chromosomes in each of the two daughter cells?

4. A somatic cell in humans contains 46 chromosomes. If this cell divides, how many chromosomes do you think will appear in the two new daughter cells?
