

**Cell Processes and Energy** ▪ *Guided Reading and Study*

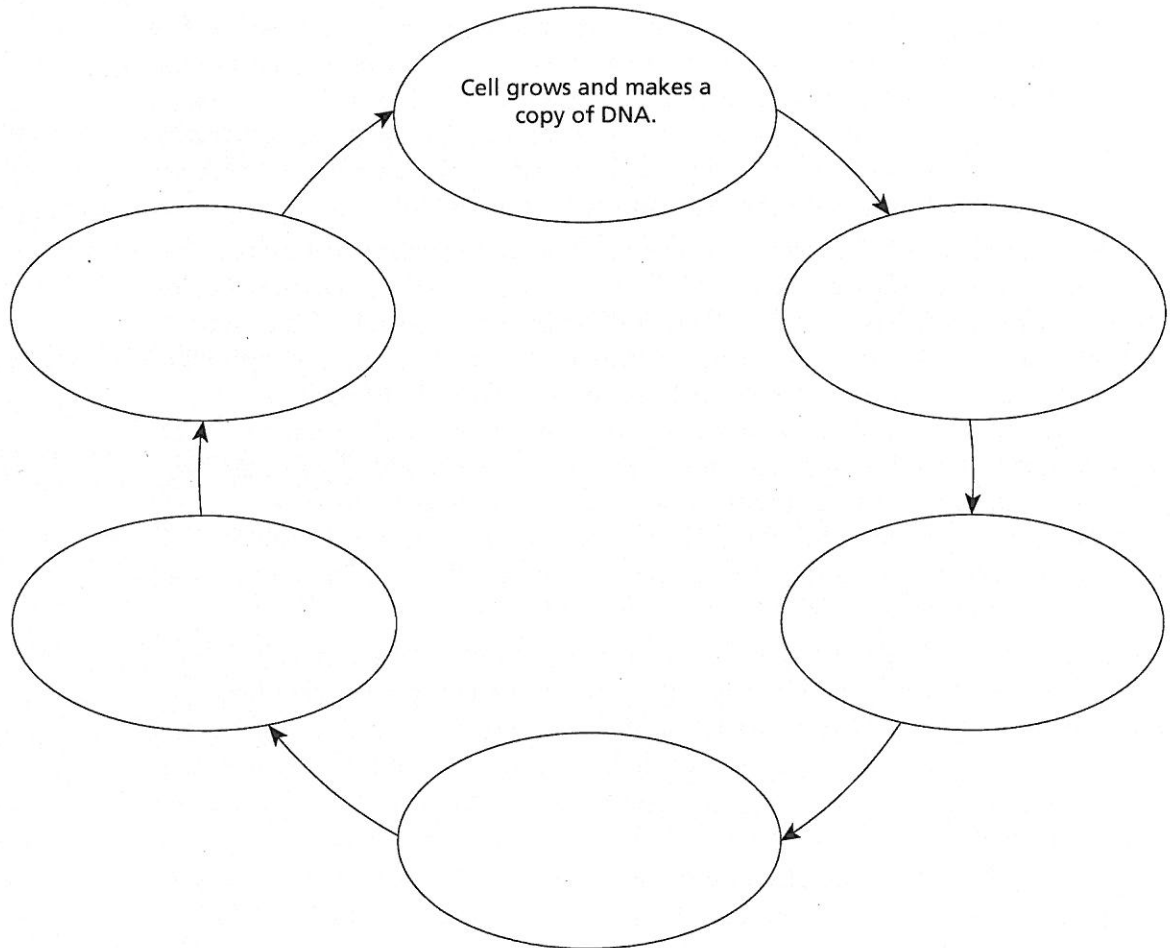
# Cell Division

*This section explains how cells grow and divide.*

## Use Target Reading Skills

*As you read, make a cycle diagram that shows the events in the cell cycle, including the phases of mitosis. Write each event in a separate circle.*

**The Cell Cycle**



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**Stage 1: Interphase**

1. The regular sequence of growth and division that cells undergo is called the \_\_\_\_\_.
2. List three things that the cell is doing during interphase.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
3. Circle the letter of the specific process during which the cell copies its DNA.
  - a. interphase
  - b. cytokinesis
  - c. replication
  - d. division

**Stage 2: Mitosis**

4. Circle the letter of each sentence that is true about mitosis.
  - a. The cell makes a copy of its DNA.
  - b. The cell membrane pinches in around the middle of the cell.
  - c. The cell's nucleus divides into two new nuclei.
  - d. One copy of DNA is distributed into each daughter cell.

Match the phases of mitosis with the events that occur in each.

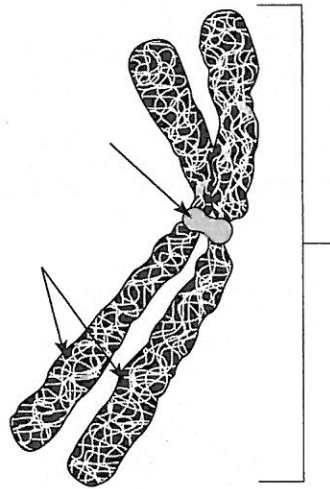
Event	Phase
_____ 5. The centromeres split and the chromatids separate.	a. prophase
_____ 6. The chromatin condenses to form chromosomes.	b. metaphase
_____ 7. A new nuclear envelope forms around each region of chromosomes.	c. anaphase
_____ 8. The chromosomes line up across the center of the cell.	d. telophase

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**Cell Division** (continued)

9. Label the parts of the structure in the diagram below.



**Stage 3: Cytokinesis**

10. During cytokinesis the \_\_\_\_\_ divides, distributing the organelles into each of the two new cells.
11. Is the following sentence true or false? During cytokinesis in plant cells, the new cell membrane forms before the new cell wall does.
- \_\_\_\_\_

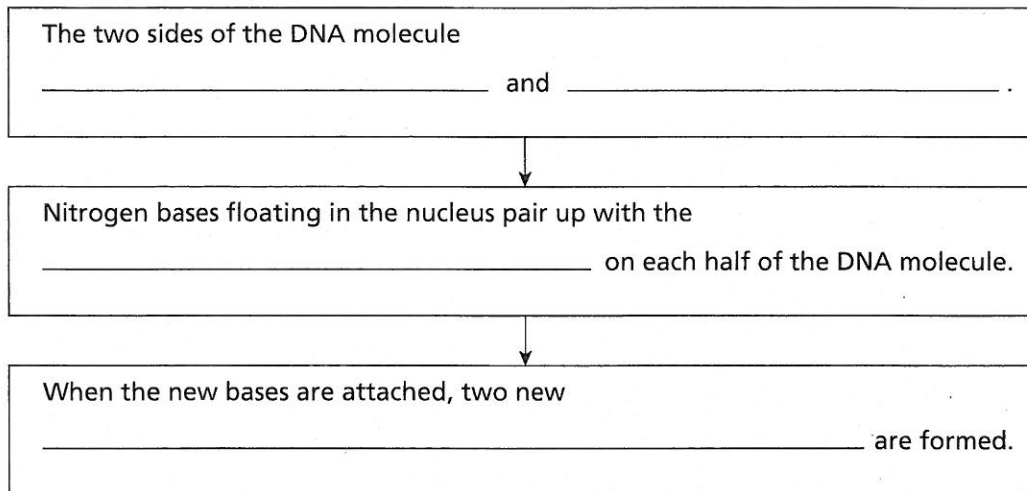
**Structure and Replication of DNA**

12. Why does a cell make a copy of its DNA before mitosis occurs?
- \_\_\_\_\_
- \_\_\_\_\_
13. Circle the letter of each molecule that makes up the sides of the DNA ladder.
- a. deoxyribose
  - b. glucose
  - c. phosphate
  - d. oxygen

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14. Name the nitrogen bases that pair up to make up the rungs of the DNA ladder.
- a. \_\_\_\_\_ pairs with \_\_\_\_\_.
  - b. \_\_\_\_\_ pairs with \_\_\_\_\_.
15. Complete the flowchart to show what happens during DNA replication.

**DNA Replication**



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