

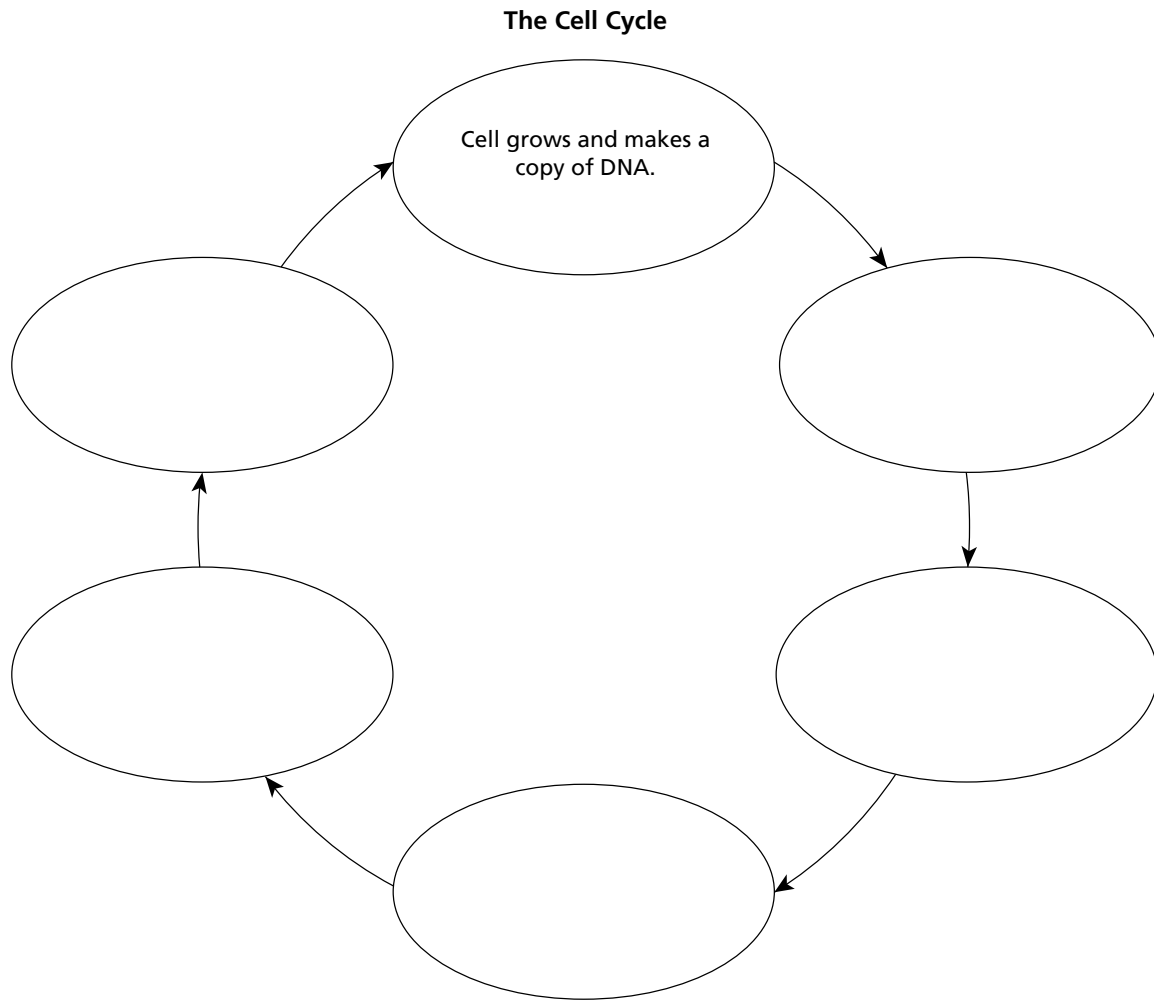
Cell Processes and Energy ▪ *Guided Reading and Study*

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.



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Cell Division *(continued)*

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

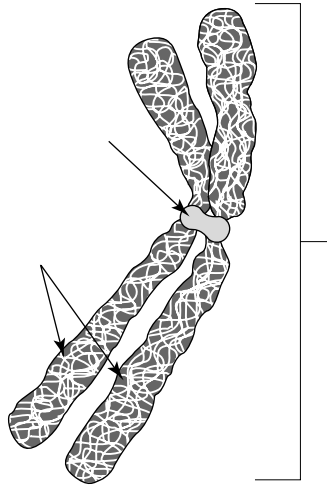
4. Circle the letter of each sentence that is true about mitosis.
 - a. The cell makes a copy of its DNA.
 - b. The cell membrane pinches in around the middle of the cell.
 - c. The cell's nucleus divides into two new nuclei.
 - d. One copy of DNA is distributed into each daughter cell.

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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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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Cell Division *(continued)*

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

