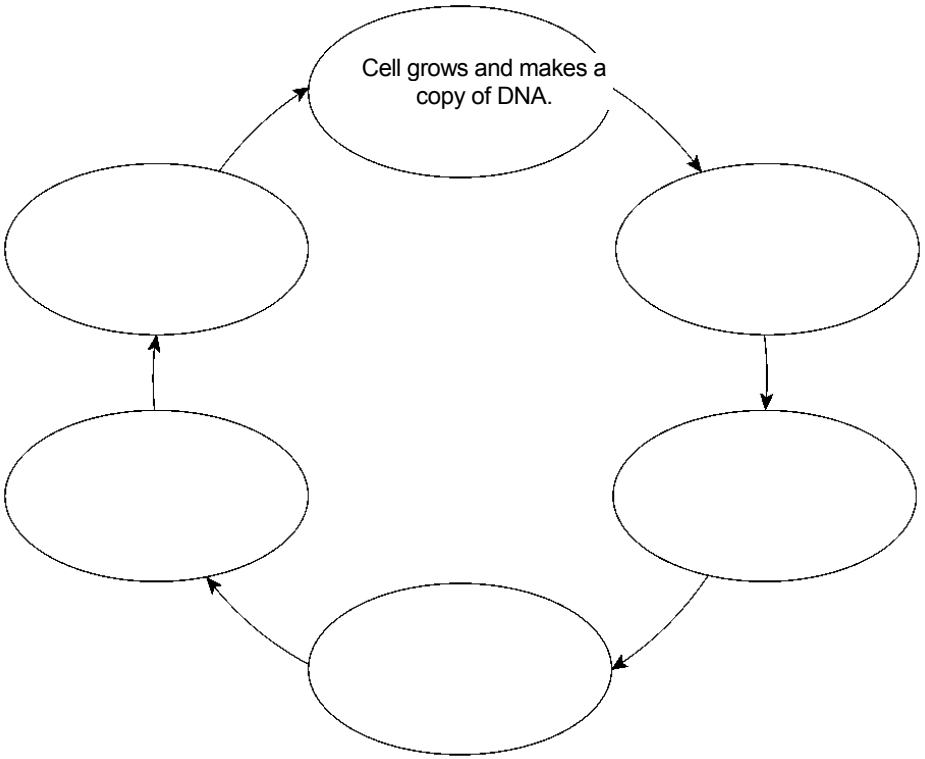
Name _____ Date _____ Class ____

Cell Processes and Energy ■ *Guided Reading and Study*

Cell Division

This section explains how cells grow and divide.

The Cell Cycle



GRS 3.5

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

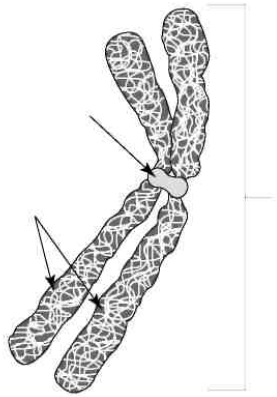
4. Circle the letter of each sentence that is true about mitosis.

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

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

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