

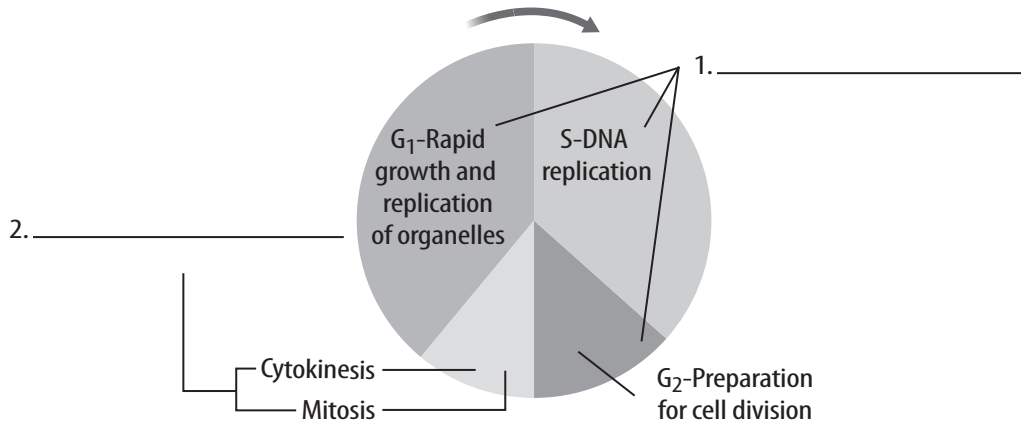
**Key Concept Builder** 

**LESSON 1**

**The Cell and Cell Division**

**Key Concept** What are the phases of the cell cycle?

**Directions:** Label this diagram by writing the correct term on each line.



**Directions:** Answer each question on the lines provided.

3. Which phase of the cell cycle is the period of growth and development?

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4. During which phase do the nucleus and cytoplasm divide?

\_\_\_\_\_

5. How many stages are in each phase of the cell cycle?

\_\_\_\_\_

6. How does a cell at the end of the first phase of the cell cycle differ from a cell at the end of the second phase?

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 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Key Concept Builder** 

**LESSON 1**

# The Cell and Cell Division

**Key Concept** What are the phases of the cell cycle?

**Directions:** Complete this table by writing a description in each space provided.

Phases of the Cell Cycle		
Phase	Stage	Description
Interphase	G <sub>1</sub>	1.
	S	2.
	G <sub>2</sub>	3.
Mitotic phase	mitosis	4.
	cytokinesis	5.

**Directions:** Answer each question or respond to each statement on the lines provided.

6. What is the DNA in the G<sub>1</sub> stage called? What does it look like?

\_\_\_\_\_

7. During which stage is DNA in the nucleus duplicated?

\_\_\_\_\_

8. After DNA is duplicated, what is it called? What does it look like?

\_\_\_\_\_

9. **Compare** the replication of mitochondria to the replication of organelles that do not have their own DNA.

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**Key Concept Builder** 

**LESSON 1**

**The Cell and Cell Division**

**Key Concept** What are the phases of the cell cycle?

**Directions:** *Mitosis is one stage in the mitotic phase of the cell cycle. Mitosis is divided into four parts. Work with a partner to read each sentence and decide which part of mitosis it describes. On each line, write the term from the word bank that correctly matches each sentence. Terms will be used more than once.*

**anaphase                      metaphase                      prophase                      telophase**

1. Duplicated chromosomes align along the middle of the cell. \_\_\_\_\_
2. The cell begins to get longer. \_\_\_\_\_
3. Duplicated chromatin coils together tightly. \_\_\_\_\_
4. Sister chromatids in each duplicated chromosome separate and are pulled in opposite directions by the spindle fibers. \_\_\_\_\_
5. The nucleolus disappears, the nuclear membrane breaks down, and spindle fibers form in the cytoplasm. \_\_\_\_\_
6. A nuclear membrane grows around each set of chromosomes.  
\_\_\_\_\_
7. Spindle fibers that helped divide the chromosome begin to disappear, and chromosomes begin to uncoil. \_\_\_\_\_
8. Spindle fibers pull and push the duplicated mitotic chromosomes to the middle of the cell. \_\_\_\_\_
9. Two new identical nuclei are formed. \_\_\_\_\_
10. Two identical sets of chromosomes are at opposite ends of the cell.  
\_\_\_\_\_

**Directions:** *Answer each question on the lines provided.*

11. What are the two cell division stages in the mitotic phase of the cell cycle?  
\_\_\_\_\_
12. What happens during cytokinesis?  
\_\_\_\_\_  
\_\_\_\_\_

**Key Concept Builder** 

**LESSON 1**

# The Cell and Cell Division

**Key Concept** Why is the result of the cell cycle important?

**Directions:** Answer each question or respond to each statement on the lines provided.

1. If a parent cell has 24 chromosomes, how many chromosomes will each daughter cell have? Explain. Then compare the chromosomes in the parent cell and the daughter cells.

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2. **Explain** what kind of organism might use cell division as a form of reproduction.

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3. Why is cell division important for a baby?

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4. **Explain** how cell division is important for replacement and repair. Give specific examples.

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