

SECTION

5.2

MITOSIS AND CYTOKINESIS

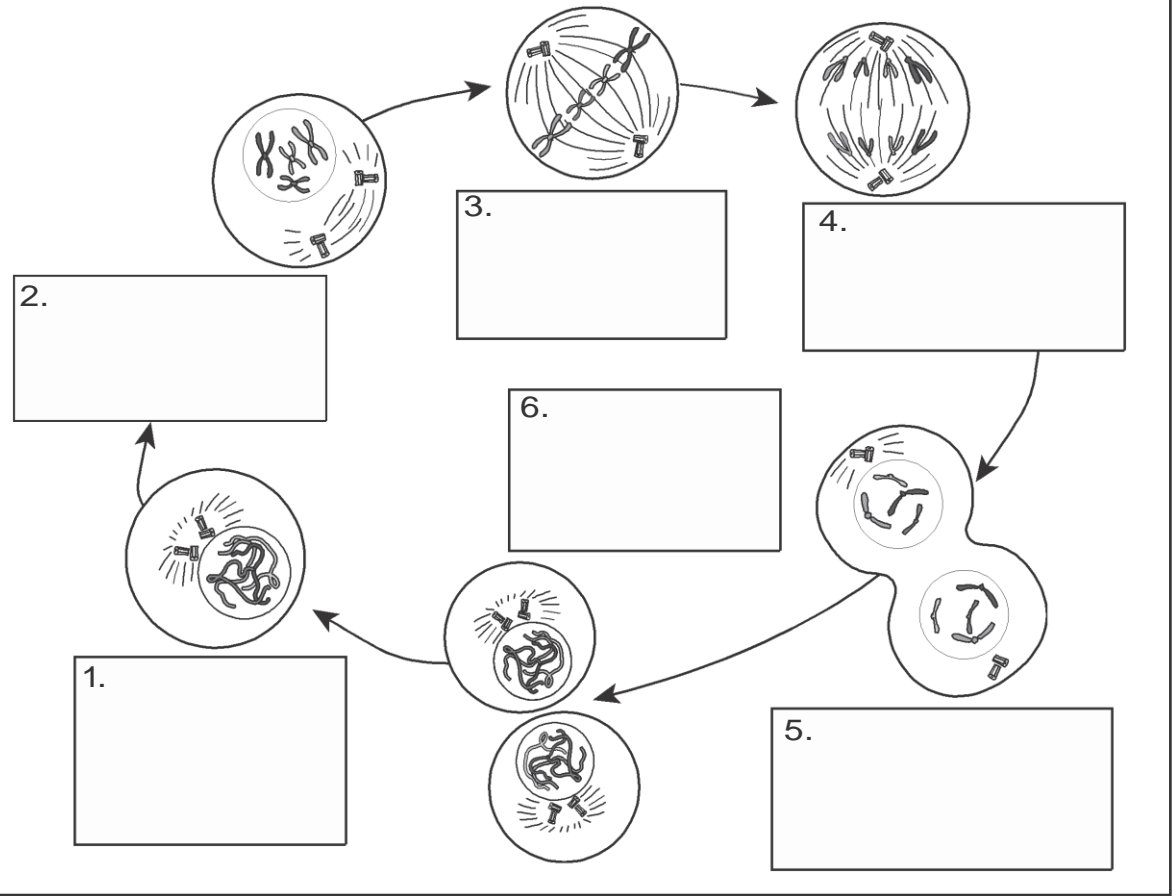
Power Notes

Chromosome structure:

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-
-
-

Cell Cycle in Detail

Identify the steps below and list the major events of each step.





Name

Period

Date

SECTION

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MITOSIS AND CYTOKINESIS

Reading Guide

KEY CONCEPT

Cells divide during mitosis and cytokinesis.

VOCABULARY

chromosome	centromere	metaphase
histone	telomere	anaphase
chromatin	prophase	telophase
chromatid		

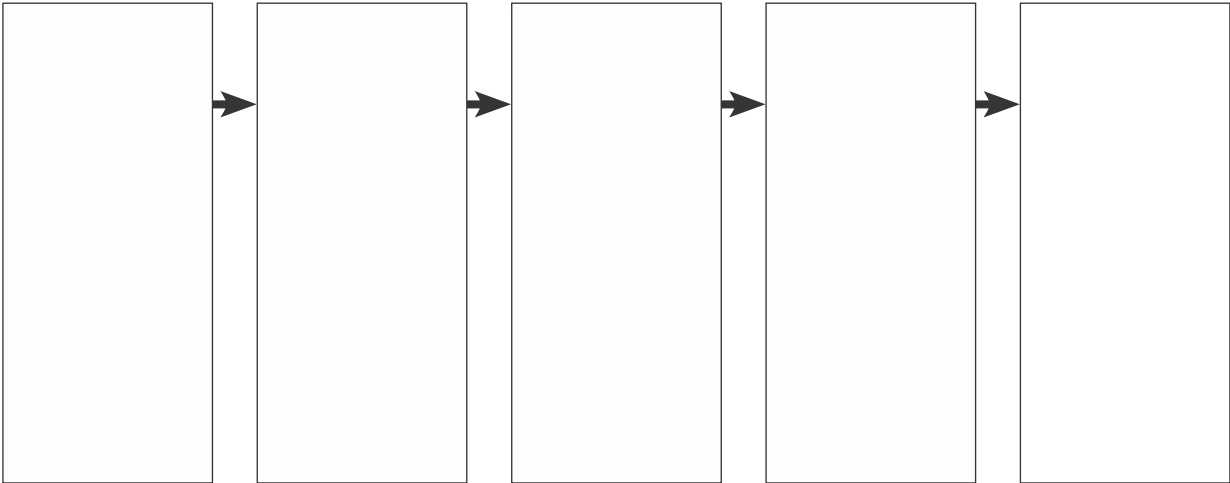
MAIN IDEA: Chromosomes condense at the start of mitosis.

1. What is a chromosome?

2. Why do chromosomes condense at the start of mitosis?

3. Why are chromosomes not condensed during all stages of the cell cycle?

Refer to Figure 5.5 to sketch how DNA goes from a long stringy form to a tightly condensed form. Label the parts of the condensed, duplicated chromosome.



MAIN IDEA: Mitosis and cytokinesis produce two genetically identical daughter cells.

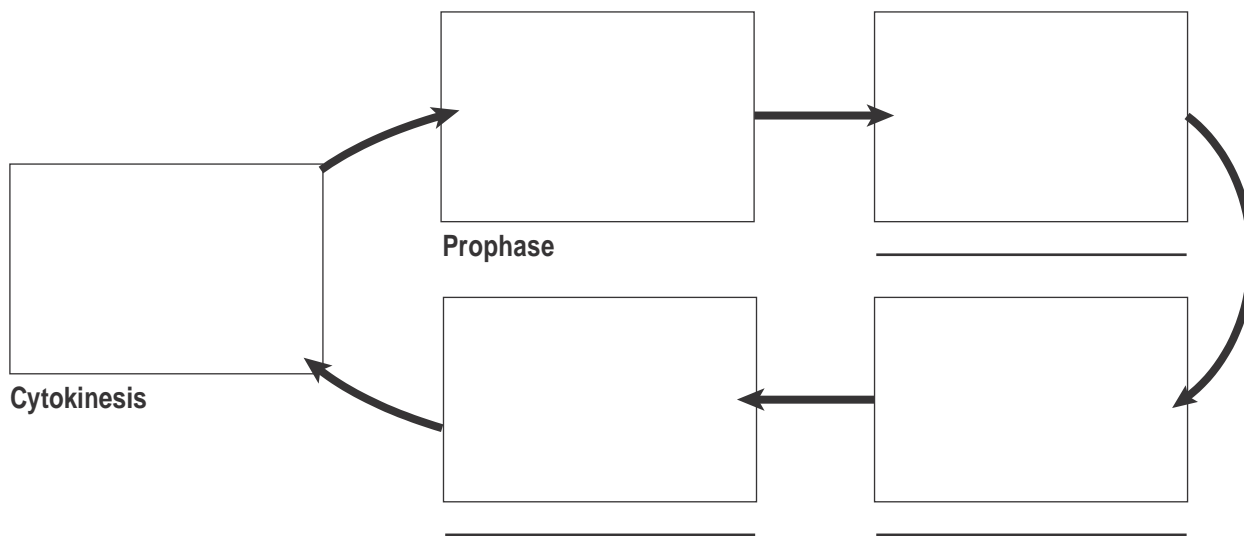
4. How does interphase prepare a cell to divide?

READING GUIDE, CONTINUED

5. Mitosis occurs in what types of cells?

6. Develop a device, such as a short sentence or phrase, to help you remember the order of the steps of mitosis: prophase, metaphase, anaphase, telophase.

Complete the diagram illustrating the four phases of mitosis and one phase of cytokinesis.



7. How does cytokinesis differ between plant and animal cells?

Vocabulary Check

8. DNA wraps around organizing proteins called _____.

9. The suffix *-tin* indicates that something is stretched and thin. _____ is the loose combination of DNA and proteins that looks sort of like spaghetti.

10. Sister chromatids are held together at the _____, which looks pinched.

11. The ends of DNA molecules form structures called _____ that help prevent the loss of genes.