

### CHAPTER 6 Reteaching *continued*

#### PHASE 3:

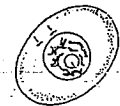


Describe what happens to the chromosomes during this phase.

#### The Life of a Cell

Each of the paragraphs below describes a phase in the life of a living cell as shown by the accompanying illustration. Answer the questions or fill in the blanks as indicated to form a complete story of the phases in the life of a cell.

#### Interphase



Most of the life of a cell is spent between cell divisions. This period is known as **interphase**. During this period, the cell grows to about double the size it was as a result of the previous cell division. Toward the end of this phase, the cell prepares for cell division. What must happen to the DNA strands in the nucleus before the cell can divide? Why?

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

#### Mitosis

The process of mitosis consists of a series of events that take place in a cell before the cell actually divides into two separate parts. Biologists distinguish four main phases within this process: **prophase**, **metaphase**, **anaphase**, and **telophase**.

#### PHASE 1:



During this phase, the chromosomes become thick rodlike structures.

The \_\_\_\_\_ breaks up.  
A network of protein cables called \_\_\_\_\_ begins to form.  
Eventually this network stretches from one end of the cell to the other.

#### PHASE 2:



During this phase, the chromosomes get arranged in a certain way.  
Describe this arrangement.

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

What happens to the spindle fibers?

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

#### PHASE 4:



As a result of the three previous phases, each side of the cell now has a complete \_\_\_\_\_ of \_\_\_\_\_ A nuclear \_\_\_\_\_ forms around each set. The chromosomes \_\_\_\_\_.

The spindle fibers disappear.

#### Cytokinesis

In the last step of cell division, the \_\_\_\_\_ is pinched in half to form two \_\_\_\_\_ cells. Describe what has been accomplished during cell division.

\_\_\_\_\_

How does the process continue?

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

## CHAPTER 6

### VOCABULARY

# Chromosomes and Cell Reproduction

In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

- An organism's reproductive cells, such as sperm or egg cells, are called
  - genes.
  - chromosomes.
  - gametes.
  - zygotes.
- A form of asexual reproduction in bacteria is
  - binary fission.
  - trisomy.
  - mitosis.
  - development.
- A segment of DNA that codes for a protein or RNA molecule is a
  - chromosome.
  - gene.
  - chromatid.
  - centromere.
- At the beginning of cell division, DNA and the proteins associated with the DNA coil into a structure called a(n):
  - chromatid.
  - autosome.
  - centromere.
  - chromosome.
- The two exact copies of DNA that make up each chromosome are called
  - homologous chromosomes.
  - centromeres.
  - chromatids.
  - autosomes.
- The two chromatids of a chromosome are attached at a point called the
  - diploid.
  - centriole.
  - spindle.
  - centromere.
- Chromosomes that are similar in size, shape, and genetic content are called
  - homologous chromosomes.
  - haploid.
  - diploid.
  - karyotypes.
- When a cell contains two sets of chromosomes, it is said to be
  - haploid.
  - binary.
  - saturated.
  - diploid.
- When a cell contains one set of chromosomes, it is said to be
  - haploid.
  - separated.
  - homologous.
  - diploid.
- The fertilized egg, the first cell of a new individual, is called a(n)
  - autosome.
  - zygote.
  - organism.
  - chromosome.
- A photo of the chromosomes in a dividing cell, arranged by size, is a(n)
  - electronic scan.
  - karyotype.
  - X ray.
  - anaphase.

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- Chromosomes not directly involved in determining the sex of an individual are called
  - asexual chromosomes.
  - chromatids.
  - autosomes.
  - haploid.
- Chromosomes that contain genes that will determine the sex of the individual are called
  - X chromosomes.
  - sex chromosomes.
  - Y chromosomes.
  - autosomes.
- The repeated sequence of growth and division during the life of a cell is called the
  - cell cycle.
  - cytokinesis.
  - binary fission.
  - amniocentesis.
- The first three phases of the cell cycle are called
  - anaphase.
  - interphase.
  - mitosis.
  - synthesis phase.
- The process during which the nucleus of a cell is divided into two nuclei is called
  - fertilization.
  - disjunction.
  - mitosis.
  - cytokinesis.
- The process during cell division in which the cytoplasm divides is called
  - cytokinesis.
  - trisomy.
  - interphase.
  - mitosis.
- The uncontrolled division of cells is called
  - Down syndrome.
  - mutation.
  - cancer.
  - trisomy.
- Cell structures made of individual microtubule fibers that are involved in moving chromosomes during cell division are called
  - chromatids.
  - fertilizers.
  - centrioles.
  - spindles.