

Chapter 4

STUDY GUIDE

Use with Text Pages 92–98

● Cell Growth and Division

Write the name of the phase of the cell cycle next to each event described below.

- _____ 1. centromeres divide
- _____ 2. centrioles move to opposite ends of the cell
- _____ 3. nuclear membrane forms around each mass of chromosomes
- _____ 4. chromosome strands separate toward opposite ends of the cell
- _____ 5. a copy of each chromosome is made
- _____ 6. centromeres attach to the spindle fibers
- _____ 7. the nuclear membrane disappears
- _____ 8. the material in the nucleus that appears grainy condenses to become visible as chromosomes
- _____ 9. double-stranded chromosomes line up in the center of the cell
- _____ 10. chromosomes condense and become visible

Complete the following sentences using the appropriate words from the textbook.

11. In animal cells, once the nucleus has divided, the _____ pinches in to form two new cells.
12. Cell division resulting in two new nuclei having the same number of chromosomes as the original nucleus is called _____.
13. Eggs or sperm are _____ cells.
14. Plant cells have no _____.
15. Plant and animal cells have _____ fibers during mitosis.
16. Bacteria reproduce asexually by means of a process called _____.
17. In plant cells, a structure called a _____ forms between two new nuclei.
18. The process by which a new organism is produced when sex cells from two parents combine is called _____.
19. Budding is a form of _____.
20. A whole new organism can grow from just a piece of the parent in animals that have the ability to _____.

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Use with Text Pages 99–103

Sexual Reproduction and Meiosis

Check (✓) the statements that agree with the textbook. Rewrite the other statements so that they agree.

- _____ 1. The egg and sperm have a diploid chromosome number.
- _____ 2. The chromosome number is reduced by a process called mitosis.
- _____ 3. When two sex cells join, the chromosome number is doubled.
- _____ 4. The joining of an egg and sperm is called meiosis.
- _____ 5. Body cells contain pairs of chromosomes.
- _____ 6. A zygote has a diploid chromosome number.
- _____ 7. Meiosis produces cells with a diploid chromosome number.
- _____ 8. After two nuclear divisions in meiosis, four cells result.
- _____ 9. Sex cells contain only one chromosome from each matched pair.
- _____ 10. Meiosis can occur anywhere in the body.

Label the following diagram using these terms: spindle fiber, double-stranded chromosome, centromere, centriole.

