

Chapter 11 Introduction to Genetics

Section 11–1 The Work of Gregor Mendel

(pages 263–266)



Key Concepts

- What is the principle of dominance?
- What happens during segregation?

Gregor Mendel's Peas (pages 263–264)

1. The scientific study of heredity is called _____.
2. Circle the letter of each sentence that is true about Gregor Mendel's peas.
 - a. The male parts of pea flowers produce eggs.
 - b. When pollen fertilizes an egg cell, a seed for a new plant is formed.
 - c. Pea plants normally reproduce by self-pollination.
 - d. Seeds that are produced by self-pollination inherit their characteristics from two different plants.
3. What does it mean when pea plants are described as being true-breeding?

4. To perform his experiments, how did Mendel prevent pea flowers from self-pollinating and control their cross-pollination? _____

Genes and Dominance (pages 264–265)

Match the term with its definition.

Terms

Definitions

- | | |
|------------------|--|
| _____ 5. genes | a. Specific characteristics that vary from one individual to another |
| _____ 6. hybrids | b. The offspring of crosses between parents with different traits |
| _____ 7. traits | c. Chemical factors that determine traits |
| _____ 8. alleles | d. The different forms of a gene |

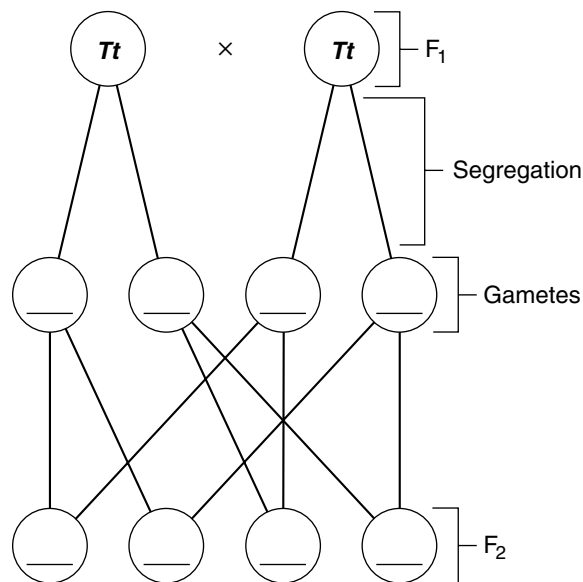
9. State the principle of dominance. _____

10. Is the following sentence true or false? An organism with a recessive allele for a particular form of a trait will always exhibit that form. _____
11. Circle the letters of the traits controlled by dominant alleles in Mendel's pea plants.

a. tall	b. short	c. yellow	d. green
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Segregation (pages 265–266)

12. How did Mendel find out whether the recessive alleles were still present in the F_1 plants? _____
13. About one fourth of the F_2 plants from Mendel's F_1 crosses showed the trait controlled by the _____ allele.
14. Circle the letter of each sentence that is true about Mendel's explanation of the results from his F_1 cross.
- a. Mendel assumed that a dominant allele had masked the corresponding recessive allele in the F_1 generation.
 - b. The trait controlled by the recessive allele never showed up in any F_2 plants.
 - c. The allele for shortness was always inherited with the allele for tallness.
 - d. At some point, the allele for shortness was segregated, or separated, from the allele for tallness.
15. What are gametes? _____
16. Complete the following diagram to show how alleles segregate during the formation of gametes.



17. In the diagram above, the dominant allele is represented by _____ and the recessive allele is represented by _____.