

## Section 11–5 Linkage and Gene Maps (pages 279–280)

*This section describes how genes that are linked to the same chromosome assort during meiosis.*

### Gene Linkage (page 279)

1. Is the following sentence true or false? Thomas Hunt Morgan discovered that some genes violated the principle of independent assortment. \_\_\_\_\_
2. Morgan grouped the *Drosophila* genes that were inherited together into four \_\_\_\_\_ groups.
3. List the two conclusions that Morgan made about genes and chromosomes.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
4. Why didn't Mendel observe gene linkage? \_\_\_\_\_

### Gene Maps (pages 279–280)

5. Explain why two genes found on the same chromosome are not always linked forever.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. The new combinations of alleles produced by crossover events help to generate genetic \_\_\_\_\_.
7. Is the following sentence true or false? Genes that are closer together are more likely to be separated by a crossover event in meiosis. \_\_\_\_\_
8. What is a gene map? \_\_\_\_\_
9. How is a gene map constructed? \_\_\_\_\_

## WordWise

Use the clues to identify vocabulary terms from Chapter 11. Write the words on the lines. Then, find the terms hidden in the puzzle and circle them.

### Clues

1. Pattern of inheritance in which both alleles contribute to the phenotype of the organism
2. Describes a cell that contains both sets of homologous chromosomes
3. The physical characteristic of an organism
4. Describes an organism that has two identical alleles for a particular trait
5. A specific characteristic, such as seed color, that varies from one individual to another
6. The offspring of a cross between parents with different traits
7. The different forms of a gene
8. Describes the two corresponding sets of chromosomes that come from the female parent and the male parent

### Vocabulary Terms

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p t k a l h m e t z y s o p g f a p m h f r  
a r d c e i t o m g s o h o m o l o g o u s  
h a d p h e n o t y p e m o h u l g b a d p  
u i c o z e a l m u h b g o u t e l m o i s  
o t h o g v e t w l m y z o t b l u y b p g  
y t b d w a o p m y e c b k n s e o i e l o  
g s u o g y z o m o h l r r e j s l o t o g  
n t b s q u l o g c o d o m i n a n c e i m  
p j t v o k g u i z y o f w m d o i p g d f