

**Chapter 12 DNA and RNA****Section 12-1 DNA (pages 287-294)****Key Concepts**

- What did scientists discover about the relationship between genes and DNA?
- What is the overall structure of the DNA molecule?

**Griffith and Transformation (pages 287-289)**

1. What did Frederick Griffith want to learn about bacteria? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. The strain of bacteria that caused pneumonia grew into \_\_\_\_\_ colonies on culture plates; harmless bacteria produced colonies with \_\_\_\_\_ edges.
3. Circle the letter of each sentence that is true about Griffith's experiment.
  - a. Mice injected with bacteria from smooth colonies died.
  - b. Mice injected with bacteria from rough colonies died.
  - c. Mice injected with heat-killed bacteria from smooth colonies died.
  - d. Mice injected with a mixture of bacteria from heat-killed smooth colonies and live rough colonies died.
4. What result from Griffith's experiment suggested that the cause of pneumonia was not a chemical poison released by the disease-causing bacteria? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. What is transformation? \_\_\_\_\_  
\_\_\_\_\_
6. What hypothesis did Griffith form from the results of his experiments? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Avery and DNA (page 289)**

7. Is the following sentence true or false? Avery and his colleagues thought that the molecule required in transformation might also be the molecule of the gene.  
\_\_\_\_\_
8. Briefly describe how Avery and his group determined which molecule was most important for transformation. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_