

Directed Reading

Section: The Structure of DNA

Read each question, and write your answer in the space provided.

1. With what kinds of bacteria did Griffith inject mice?

2. What was different about the S bacteria and the R bacteria?

3. Why were the heat-killed S bacteria harmless?

4. Why was the mixture of heat-killed S bacteria and R bacteria virulent?

5. What did Griffith discover as a result of his experiments?

6. How did Avery discover that the material responsible for transformation in bacteria was DNA?

Directed Reading *continued*

Complete each statement by underlining the correct term or phrase in the brackets.

7. Viruses that infect bacteria are called [bacteriophages / rough].
8. A virus is made of DNA and [proteins / cell walls].
9. Radioactive sulfur was used to label the [DNA / protein] in the viruses.
10. Radioactive phosphorus was used to label the [DNA / protein] in the viruses.
11. Hershey and Chase discovered that after the ³²P-labeled phages infected the bacteria, most of the radioactive phosphorus was found in the layer containing [bacteria / phage].

In the space provided, write the letter of the description that best matches the term or phrase.

- | | |
|-----------------------------|---|
| _____ 12. double helix | a. a five-carbon sugar |
| _____ 13. nucleotides | b. type of weak bond between base pairs that holds the double helix together |
| _____ 14. deoxyribose | c. four kinds and they form specific pairs |
| _____ 15. hydrogen bond | d. subunits that make up DNA |
| _____ 16. nitrogenous bases | e. one of two pyrimidines used as a nitrogenous base in nucleotides |
| _____ 17. adenine | f. one of two purines used as a nitrogenous base in nucleotides |
| _____ 18. cytosine | g. discovered that the amount of adenine always equaled the amount of cytosine and that guanine always equaled cytosine |
| _____ 19. Chargaff | h. two strands of nucleotides twisted around each other |

In the space provided, explain how the terms in each pair are related to each other.

20. base-pairing rules, complementary

21. Wilkins and Franklin, DNA structure
