Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_

**History of DNA**

Much is known about DNA as a result of many scientists and researchers devoting a significant portion of their life to learning about the structure, role, and overall importance of DNA. Today you will be researching and describing the history of biology and contributions of scientists.

**Instructions:** **Use a classroom textbook to complete this worksheet. Chapter 12, pages 338-347**

Bacterial Transformation

1. What was Fredrick Griffith trying to figure out in 1928?
2. What did he specifically want to learn?
3. Griffith injected groups of mice with two different types or strains of bacteria, list the two types or strains of bacteria.

Griffith’s Experiment

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Type of bacteria injected:** | **Disease-causing bacteria (S strain)** | **Harmless bacteria (R strain)** | **Heat-killed bacteria (S strain)** | **Mixture of heat-killed S strain and live R strain** |
| **Effect the bacteria had on the mouse that was injected:** |  |  |  |  |

1. [**Read the information that explains Figure 12-1**] What did Griffith infer from the experiment?
2. Define transformation-

The Molecular Cause of Transformation

1. What did the team of scientists led by Oswald Avery want to determine when they repeated Griffith’s work?
2. Avery and his team treated the mixture of various molecules with an enzyme that destroyed which type of molecules?
3. By observing bacterial transformation, explain the main discovery made by Avery and the other scientists.

Bacterial Viruses

1. What are viruses?

Bacteriophages

1. Define bacteriophage-

The Hershey-Chase Experiment

1. Hershey and Chase’s experiment with bacteriophages confirmed Avery’s results. What did they determine?

The Role of DNA

1. List the three basic functions of DNA.

The Components of DNA

1. DNA is a unique molecule. What are the components that make up DNA?

Solving the structure of DNA

1. What did Erwin Chargaff discover about DNA that became known as “Chargaff’s rule”?
2. What technique did Rosalind Franklin use to get information about the structure of DNA?
3. In 1953, What did Watson write in his book *The Double Helix* after he was shown Franklin’s X-ray pattern of DNA?