

Name _____

Date _____

DNA Structure and Function

Worksheet

1. Match each scientist listed below with their contribution to the study of DNA.

A. Frederick Griffith
B. Hershey and Chase

C. Rosalind Franklin
D. Watson and Crick

E. Erwin Chargaff

____ Discovered that there were equal amounts of the nitrogen bases A + T and C + G in a human body cell; concluded that A paired with T and C paired with G.

____ Did experiments with viruses to determine that DNA, not protein, is the genetic material of a cell.

____ Did experiments with S and R strain pneumonia bacteria to determine that DNA is the genetic material of a cell

____ Took x-ray crystallography images of a DNA molecule.

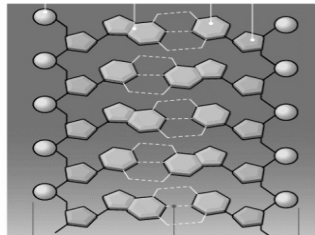
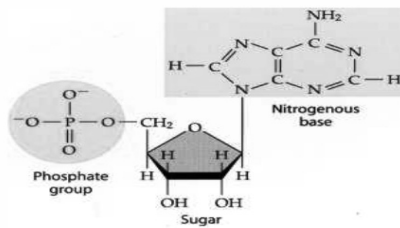
____ Analyzed x-ray images to determine that DNA is a double helix shape; won the Nobel Prize

2. What is this picture, and how did it help us to understand the shape of DNA?



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3. Label the nucleotide and double helix pictured below with the three parts of a nucleotide: **deoxyribose sugar**, **phosphate group**, **nitrogenous base**.



4. If we think of a DNA molecule as a ladder....

Alternating _____ and _____ make up the sides of the ladder _____
make up the "rungs" (middle bars) of the ladder. The "rungs" are held together by _____ bonds.

5. Purines and pyrimidines are two types of nitrogen bases. Explain the difference between purines and pyrimidines, and list the nitrogen bases that fall under each category.

Difference:

Purines	Pyrimidines