

Instructions: Working alone or in small groups, research the following scientists to summarize how each of their experiments contributed to the discovery of the structure of DNA, credited to Watson and Crick in 1953.

Reference McGraw-Hill Section 5.1 P. 204-

Scientist	Organism Used	Description of Experiment	Conclusions
Miescher (1869) P. 208			
Griffith (1928)			Discovered the process of transformation which is ____ _____ _____
Avery (1944) (A Canadian born American doctor)			Nonvirulent cells mixed with purified DNA from _____ virulent cells produced colonies of _____ cells. This doesn't work with RNA or protein. Therefore DNA, not _____ is the hereditary material
Hershey & Chase (1952)		The experiment performed was to determine if DNA or protein was the hereditary material. *P ³² used to track _____ in nucleic acid * S ³⁵ used to track _____ on capsid of virus	Genetic information is carried in DNA and not in _____

Links on Class Webpage under the date for this class work. (look for videos, animations etc.) Other internet links that you search etc.

Chargaff (1949)		<ul style="list-style-type: none"> Paper chromatography was used to separate A,T,G,C bases; compared base ratios 	Chargaff's Rule:
Linus Pauling (1951)			Proteins have _____ shaped structures. This led Crick to suggest the possibility of the same shape for the structure of DNA.
Franklin (early 1950's)	DNA		DNA has a defined _____ structure, repeating once every 0.34 nm and at 3.4 nm. _____ are located on the inside of the structure and the outside contains the _____ backbone.
Watson and Crick (1953)		*did not directly experiment but combined the experiments and conclusions of other scientists to determine the DNA structure	Summarize the structure of the DNA molecule:
Meselson & Stahl (1958) P. 221	E. coli		DNA replication is <u>semiconservative</u> . Explain in words and/or pictures what this means.

Ref. P. 212 Define the following in words and/or pictures.

complementary base pairing:

antiparallel