Concept 11.1

Genes are made of DNA.

Scientists identified DNA as a chemical in the nucleus of cells more than 100 years ago.

Griffith's "Transforming Factor" Is the Genetic material

- In 1928 Frederick Griffith was studying two forms, or strains of bacterial species.

- He found one strain was fatal to mice the other was not.

- He heat treated the one which was lethal and mixed it with to non lethal strain. This resulted in that death of the mouse.

- He found that all of the descendants of the transformed bacteria inherited the killer trait.

- Clearly, some substance in the deadly strain remained active despite the heat treatment.

Avery shows DNA is the Transforming Factor:

- Two chemicals either protein or DNA were the most likely to be the “transforming factor.” because scientists already knew that chromosomes, which function in inheritance, consist of protein and DNA.

- In 1944 Oswald Avery conducted experiments to determine which of the two were responsible.

Virus Experiments Provided More Evidence:

- Virus - A package of nucleic acid wrapped in a protein coat.

- Bactereriophage - a virus that infects bacteria

- Hershey and Chase concluded that the phage’s DNA entered the bacterial cell during infection, but not the proteins did not. They further concluded that DNA must carry the genetic information.