1. Griffith, Avery, McCarty, MacLeod and colleagues conducted experiments using rough and smooth Streptococcus pneumoniae *bacteria and mice.*

    a. What unexpected observation did Griffith make?

    b. What controls did Griffith use in his experiments?

    c. What information were Avery, McCarty and MacLeod trying to figure out?

    d. How did they isolate specific biomolecules to test for their effects on bacterial phenotypes?

    e. What were the three possible outcomes of the Avery, McCarty, and MacLeod experiment?

    f. Which outcome did their data support and why?

2. *Meselson and Stahl's experiment has been called the most beautiful experiment in molecular biology.*

    a. What question were they investigating?

    b. What were the three possible outcomes to their investigation?

    c. Describe how they used $^{N}15$ and $^{N}14$ to tell the difference between old DNA and newly replicated DNA.

    d. Draw a diagram of their ultracentrifugation tubes after one and two generations of growth in $^{N}14$.

    e. Which outcome did their data support and why?

DNA Replication Example Test Questions

1. What are the three major events that happen during DNA replication?

2. Which enzymes/proteins participate in each of the steps in question 1?

3. How is leading strand synthesis different from lagging strand synthesis?

4. Why is leading strand synthesis different from lagging strand synthesis?