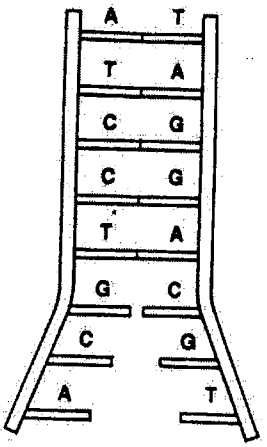
Name:_____ _____**Period:**_____

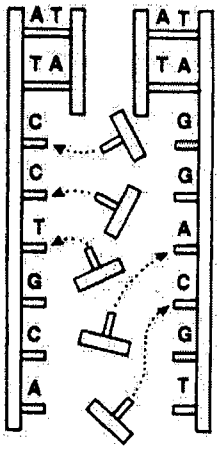
DNA Replication Practice

Directions: Below are the 3 steps in DNA replication. Follow the directions for each step and then answer the questions below.

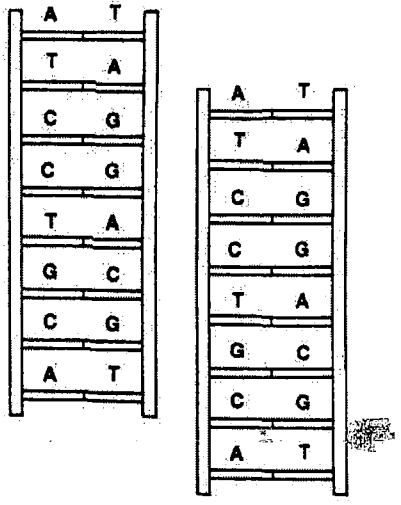
1. -What is happening to the DNA molecule in the figure? (Explain the first step in DNA replication)



2. -What happens to the DNA molecule during the second step of DNA replication?



3. -What happens during the third step of DNA replication?



How DNA Is Copied

4. What does it mean that the two strands of DNA are complementary? _____
   _____

5. What is **DNA replication?**_____

6. Using your notes, book, and this assignment, place the steps of DNA replication in the correct order.
   ____ a. The enzyme DNA polymerase moves along the exposed strands and adds complementary nucleotides to each nucleotide in each existing strand.
   ____ b. The DNA double helix breaks or unzips down the middle between the base pairs.
   ____ c. A complementary strand is created for each of the two strands of the original double helix.
   ____ d. Two new identical DNA molecules have been produced.

7. (True or False) The process of DNA replication results in a copy of the original DNA molecule.
8. (True or False) DNA does not have to break apart to be copied.
9. (True or False) After DNA replication is complete, there are two new DNA molecules; one molecule has both of the original strands and one molecule has two new strands of DNA.

10. Where does DNA replication happen?_____
    _____.

11. When does DNA replication happen?_____

12. Below are DNA strands. Make the complementary DNA strand:

Original Strand: A T G C A A A T T G C T C A C C G G G G A T C A G C A C C G G

Complementary Strand: _____

Original Strand: A G G G G A T C A G C A C C G G A T T T C A T G A G C C C T A

Complementary Strand: _____

Original Strand: A A G T A C G A T C G A T G C A C A T G C A T G G C T A C G C

Complementary Strand: _____

When a cell copies a DNA molecule:

1. DNA is unzipped. by helicase
2. The complementary bases are added to each template strand. by DNA polymerase
3. The 2 new strands are proofread for errors. by DNA polymerase and then DNA winds up.