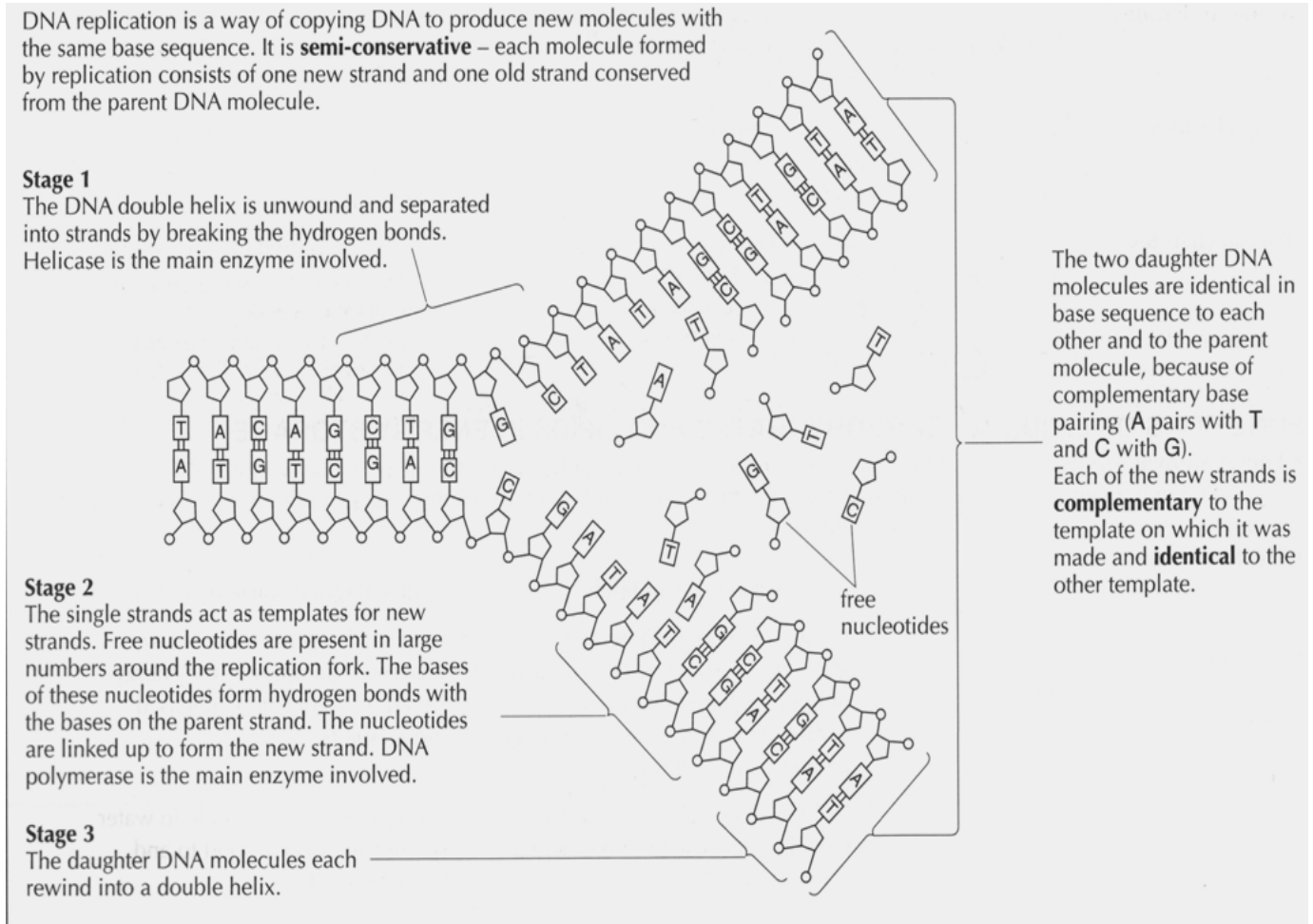


### DNA Replication Read and Answer



1. DNA replication is a way to \_\_\_\_\_ DNA to produce new molecules with the same base \_\_\_\_\_.
2. Semi-conservative means that each molecules formed by replication consists of one \_\_\_\_\_ and one \_\_\_\_\_ strand conserved from the parent.
3. In stage 1 the DNA double helix is \_\_\_\_\_ and separated into strands by breaking \_\_\_\_\_ bonds using the enzyme \_\_\_\_\_.
4. In stage 2 the single strands act as \_\_\_\_\_ for new strands. Free \_\_\_\_\_ around the \_\_\_\_\_. The bases of the nucleotides form a \_\_\_\_\_ bond with the parent molecule.
5. The main enzyme working in Stage 2 is \_\_\_\_\_.
6. In stage 3 the \_\_\_\_\_ DNA molecules each rewind into a \_\_\_\_\_.
7. The new daughter DNA molecules are identical in \_\_\_\_\_ to each other and the parent molecule because of \_\_\_\_\_.
8. A pairs with \_\_\_\_\_ and C with \_\_\_\_\_.
9. Each new strand is \_\_\_\_\_ to the template which was made.
10. Each new strand is \_\_\_\_\_ to the original parent strand.

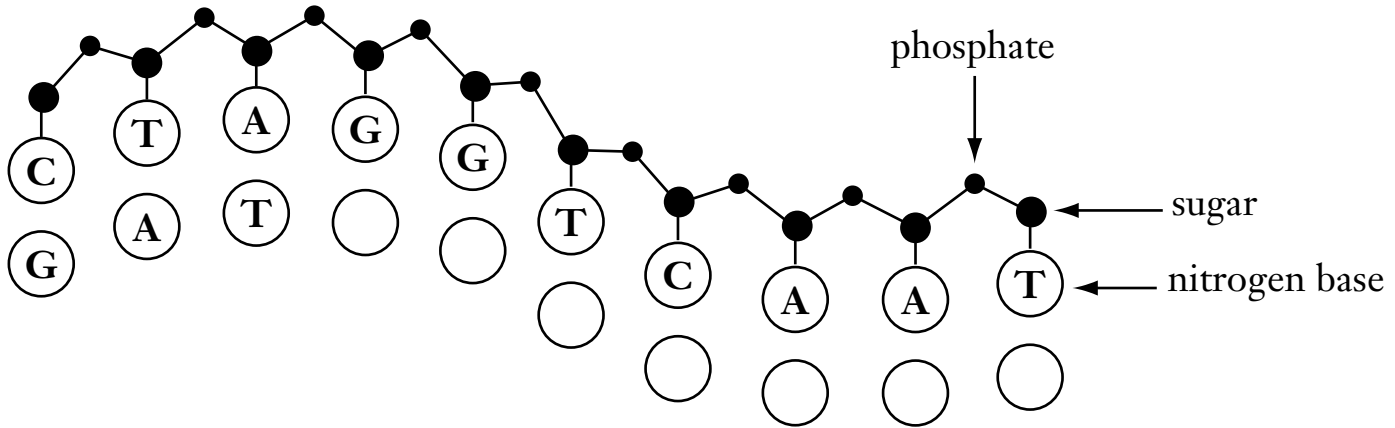
# CHAPTER 13 GENES AND CHROMOSOMES

## Section 13.1 DNA: The Molecule of Heredity

### Study the Diagram

When the DNA ladder replicates—copies itself—the ladder breaks apart. You can think of the ladder breaking apart as a zipper unzipping. When the two sides of the ladder are apart, free nucleotide bases attach to the bases already on the sides of the ladder, and two copies of the DNA are formed. The copies are the same as the original because adenine (A) usually pairs with thymine (T). Cytosine (C) usually pairs with guanine (G).

The diagram below shows an unzipped strand of DNA. Write the letters—A, T, C, or G—of the bases that will pair with the bases on the strand. Some of the bases have been paired for you.



- True or false?** Nucleotide bases already attached to proteins form the copied side of the DNA ladder. \_\_\_\_\_
- True or false?** The process of DNA replication results in a copy of the original strand of DNA.  
\_\_\_\_\_
- True or false?** Sugar and phosphates provide the energy for DNA replication.  
\_\_\_\_\_
- True or false?** The final result of DNA replication is two copies of the original DNA strand.  
\_\_\_\_\_