ne:	Date:	Period:
DNA Rep	olication Read and Answer	
DNA replication is a way of copying DNA to product the same base sequence. It is semi-conservative — early replication consists of one new strand and one of from the parent DNA molecule. Stage 1 The DNA double helix is unwound and separated into strands by breaking the hydrogen bonds. Helicase is the main enzyme involved. Stage 2 The single strands act as templates for new strands. Free nucleotides are present in large numbers around the replication fork. The bases of these nucleotides form hydrogen bonds with the bases on the parent strand. The nucleotides are linked up to form the new strand. DNA polymerase is the main enzyme involved. Stage 3 The daughter DNA molecules each rewind into a double helix.	ach molecule formed	The two daughter DNA molecules are identical base sequence to each other and to the parent molecule, because of complementary base pairing (A pairs with T and C with G). Each of the new strands complementary to the template on which it was made and identical to the other template.
. DNA replication is a way to same base		
Semi-conservative means that e and one		
B. In stage 1 the DNA double helix		
breaking bond		
4. In stage 2 the single strands act	•	
arou		
bases of the nucleotides form a	bond with	the parent molecule.
5. The main enzyme working in Sta		
5. In stage 3 the		
7. The new dauahter DNA molecu	les are identical in	to each
7. The new daughter DNA molecule other and the parent molecule 8. A pairs with and C	because of	

10. Each new strand is ______ to the original parent strand.

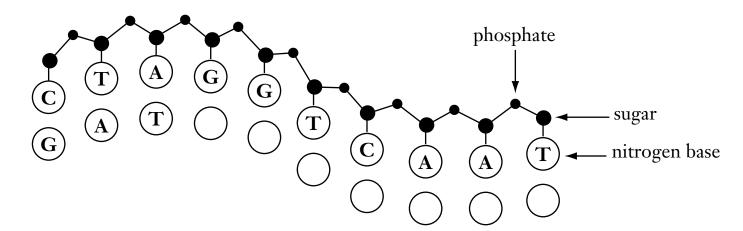
made.

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.



1.	True or false?	Nucleotide b	oases alread	y attached to	proteins	form the	copied side	of the	DNA
	ladder								

- 2. True or false? The process of DNA replication results in a copy of the original strand of DNA.
- 3. True or false? Sugar and phosphates provide the energy for DNA replication.
- 4. True or false? The final result of DNA replication is two copies of the original DNA strand.