

Name _____ Class _____ Date _____

3-3 What is DNA?

Lesson Review

Complete the following.

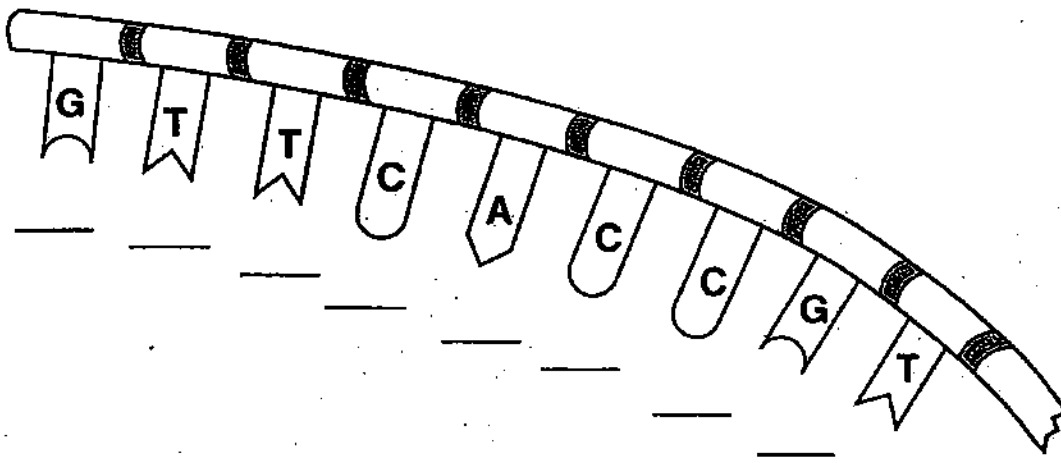
1. What is DNA? _____
2. What is replication? _____
3. What does a DNA molecule look like? _____
4. What substances make up the sides of the DNA ladder? _____
5. What substances make up the steps of the DNA ladder? _____
6. Name four nitrogen bases that make up DNA. _____
7. Explain how the nitrogen bases of the DNA ladder pair up. _____

8. What is produced after replication occurs? _____
9. What is RNA? _____
10. Where does protein synthesis occur? _____

Skill Challenge

Skills: modeling, applying concepts

One-half of a DNA molecule is shown. In the spaces provided, identify the nitrogen base that will pair with each base shown during replication. Use the letters A (adenine), G (guanine), C (cytosine), and T (thymine).



TRANSPARENCY 7

Cell Reproduction

Chapter 4

DNA REPLICATION

1. What are the three parts of a DNA molecule?

2. What is the function of DNA?

3. List the four nitrogen bases that make up DNA.

4. What breaks the bonds between the nitrogen bases of the DNA molecule?

5. How is the structure of DNA like that of a spiral staircase?

6. What happens during replication?

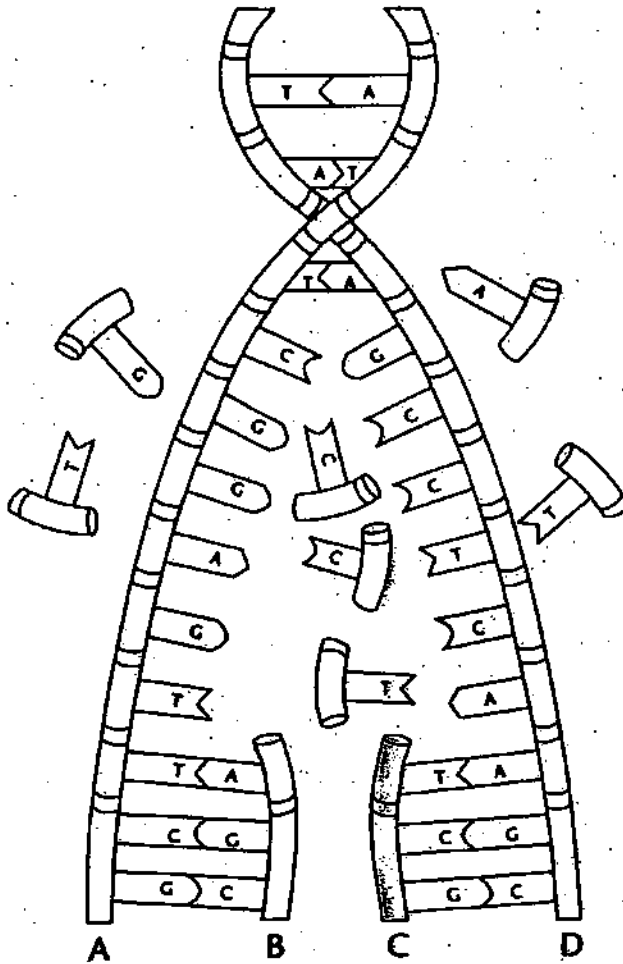
7. If the following were part of a DNA chain, list the bases that will pair with them to replicate the chain. A-T-C-G-C-C-T-T-A-G-A-A-T-C-G-G.

8. How are the two new DNA copies like the original DNA?

Worksheet 21

DNA Replication

PART A. Use the diagram to answer the questions below.



1. Which of the labeled DNA strands are the parent strands? _____
2. Which of the labeled strands are newly synthesized DNA? _____
3. What nucleotide will be added to strand b next? _____
4. What nucleotide will be added to strand c next? _____
5. What holds the bases in strands a and b together? _____
6. What holds the backbone of strand a together? _____

PART B Answer the following questions on the lines provided.

1. What is the first step in DNA replication?

2. What enzyme matches the bases of free nucleotides to the bases on the parent strand?

3. Explain why one DNA strand grows one nucleotide at a time and the other is assembled in short fragments.

OMIT

SKIP

4. If the DNA double helix were a twisted ladder, what would the sides of the ladder be made of?

5. What would the rungs of the ladder be made of?

6. Complete the table below.

NUCLEOTIDE BASE	ABBREVIATION	COMPLEMENTARY BASE
a.	T	e.
b.	C	f.
c.	A	g.
d.	G	h.