Name _____ Date _____

Molecular Genetics

Before You Read

Before you read the chapter, respond to these statements.

1. Write an **A** if you agree with the statement.
2. Write a **D** if you disagree with the statement.

Before You Read	Molecular Genetics	After You Read
	• James Watson and Francis Crick discovered that DNA was the genetic material.	
	• DNA replication is the same in prokaryotes and eukaryotes.	
	• Information in a cell flows from DNA to RNA to protein.	
	• A mutation is a permanent change in a cell's DNA.	

Science Journal

Ponies on the Shetland Islands in Scotland have short stature, thick hair, strength, and hardiness so they can thrive in their harsh environment. How do you think the DNA of their population has changed over time?

Name _____ Date _____

Molecular Genetics

Section 1 DNA: The Genetic Material

Main Idea **Details**

Scan *Section 1 of the chapter. Identify the results of three DNA experiments.*

1. _____

2. _____

3. _____

Review Vocabulary

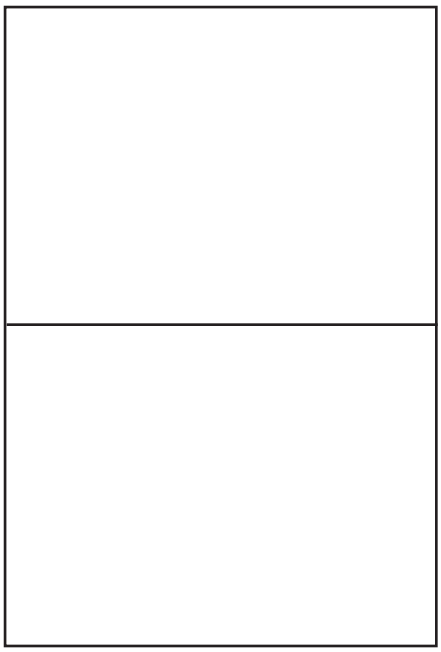
Use your book or dictionary to define nucleic acid.

nucleic acid _____

New Vocabulary

Use your book or dictionary to define each term. In the box to the right, make a sketch to help you remember each term.

double helix _____



nucleosome _____

Academic Vocabulary

Define transform *to show its scientific meaning.*

transform _____

Name _____ Date _____

Section 1 DNA: The Genetic Material (continued)

Main Idea | **Details**

Discovery of the Genetic Material

I found this information on page _____.

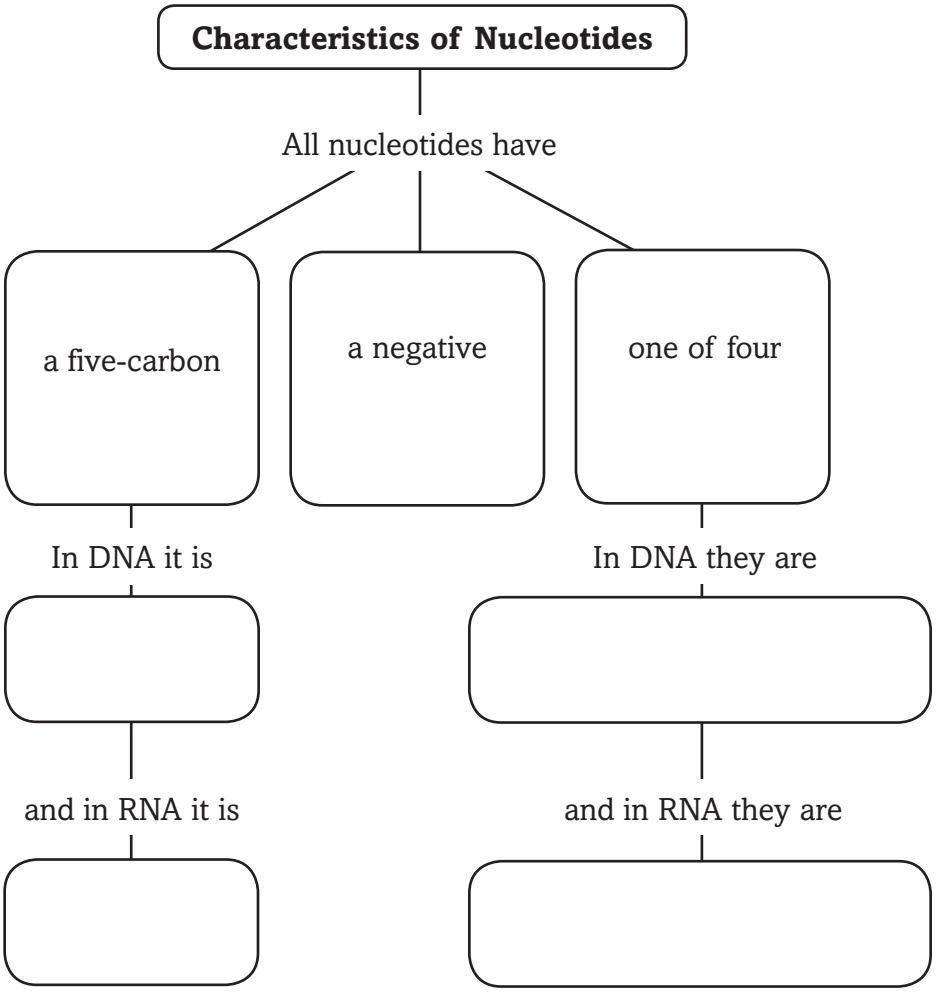
Complete *the table below about geneticists and their discoveries.*

Scientist	Discovery	Year
Frederick Griffith		
Oswald Avery		
Alfred Hershey and Martha Chase		
James Watson and Francis Crick		

DNA Structure

I found this information on page _____.

Organize ***the characteristics of nucleotides by filling in the graphic organizer below.***



Name _____ **Date** _____

Section 1 DNA: The Genetic Material (continued)

Main Idea

I found this information on page _____.

Details

Create *a memory device to help you remember how the nitrogenous bases are always paired.*

_____

_____

Analyze *the DNA molecule by explaining how each word applies to the molecule. Use a sketch to back up your explanation in each case.*

Word and What It Means	Sketch of Effect
complementary:	
helix:	
double (as in "double helix"):	

Chromosome Structure

I found this information on page _____.

Synthesize and rephrase *how a DNA strand that is 200 million bases long can fit inside a cell.*

_____

_____

_____

SUMMARIZE

State how Watson and Crick's DNA structure supported Chargaff's rules.

_____

_____

_____