

Skills Worksheet

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Active Reading

Section: Chromosomes

Read the passage below. Then answer the questions that follow.

A gene is a segment of DNA that codes for a protein or RNA molecule. A single molecule of DNA has thousands of genes lined up like the cars of a train. When genes are being used, the strand of DNA is stretched out so that the information it contains can be decoded and used to direct the synthesis of proteins needed by the cell.

As a eukaryotic cell prepares to divide, the DNA and the proteins associated with the DNA coil into a structure called a **chromosome**. Before the DNA coils up, however, the DNA is copied. The two exact copies of DNA that make up each chromosome are called **chromatids**. The two chromatids, which become separated during cell division and are placed into each new cell, ensure that each new cell has the same genetic information as the original cell.

SKILL: READING EFFECTIVELY

Read each question, and write your answer in the space provided.

- 1 How are genes and DNA related?
- 2 What occurs to a DNA strand as its genes are being used?
- 3 How are chromatids and chromosomes related?

An analogy is a comparison. In the space provided, write the letter of the term or phrase that best completes the analogy.

- _____ 4. A train is to cars as a molecule of DNA is to
- a. chromatids.
 - b. genes.
 - c. proteins.
 - d. RNA.