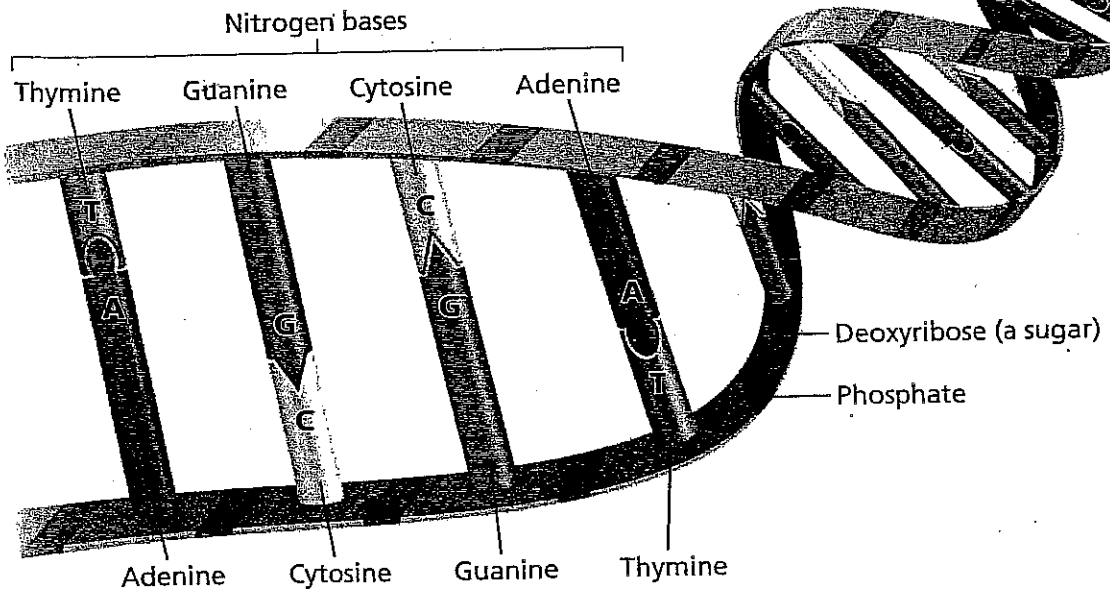


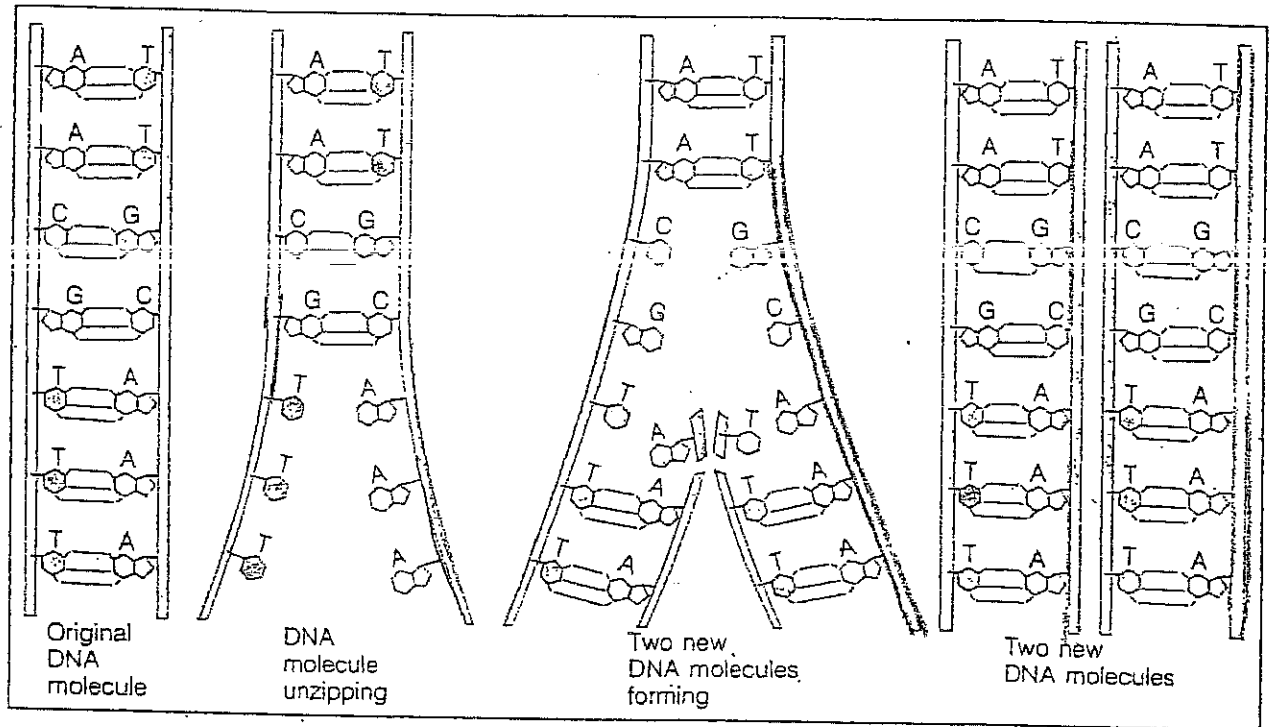
FIGURE 23
The Structure of DNA
The DNA molecule is shaped like a twisted ladder. *Classifying Which base always pairs with adenine?*



DNA Replication

The process in which DNA molecules form exact duplicates is called replication (rehp-luh-KAY-shuhn). During the first step in replication, the DNA molecule separates, or unzips. As you can see in Figure 2-17, the separation takes place between the two nitrogen bases that form each rung of the DNA ladder. At the end of the first step in replication, the DNA ladder has split into two halves, or strands. In the next step, free nitrogen bases that are floating in the nucleus begin to pair up with the nitrogen bases on each strand of the DNA ladder. Remember that adenine (A) always attaches to thymine (T), and guanine (G) always attaches to cytosine (C). Once the new bases are attached, two new DNA molecules are

Figure 2-17 In this illustration, you can see how a DNA molecule duplicates itself in the process of replication. What is the first step in the process of DNA replication?



formed. Each new DNA molecule is an exact duplicate of the original DNA molecule. In other words, each new DNA molecule contains the same genetic code as the original DNA molecule and can transfer this code to a new daughter cell.