

Biology	Nathanial Spearing
13.3 DNA	The structure of Dna
<p>Vocab:</p> <ul style="list-style-type: none"> <li>• Replicate</li> <li>• Telomere</li> <li>• DNA polymerase</li> </ul> <p>Notes:</p> <p>Copying the Code</p> <p>The Replication Process</p> <p>The Role of Enzymes</p> <p>Telomeres</p> <p>Replication in Living Cells</p> <p>Prokaryotic DNA Replication</p> <p>Eukaryotic DNA Replication</p>	<p>Process of copying DNA prior to cell division.  Repetitive DNA at the end of a eukaryotic chromosome.  Principal enzyme involved in DNA replication ‘</p> <p>Base pairing in the double helix explains how DNA can be copied, or replicated, because each base on one strand pairs with one—and only one—base on the opposite strand. Each strand of the double helix, therefore, has all the information needed to reconstruct the other half by the mechanism of base pairing.</p> <p>Before a cell divides, it duplicates its DNA in a copying process called replication during the S phase of the cell cycle.</p> <p>The principal enzyme involved in DNA replication is called DNA polymerase (pahl ih mur ayz), so named because it acts to join nucleotides into the DNA polymer. DNA polymerase joins nucleotides to synthesize a new complementary strand of DNA. Besides producing the sugar-phosphate bonds that join nucleotides, DNA polymerase also “proofreads” each new DNA strand, so that each molecule is a near-perfect copy of the original.</p> <p>The tips of eukaryotic chromosomes are known as telomeres. This enzyme adds short, repeated DNA sequences to telomeres as the chromosomes are replicated. In rapidly dividing cells, telomerase helps to prevent genes near the ends of chromosomes from being damaged or lost during replication.</p> <p>DNA differs somewhat between prokaryotes and eukaryotes. In most prokaryotes, the cells have a single, circular DNA molecule in the cytoplasm. It contains nearly all of the cell’s genetic information. In contrast, eukaryotic cells may have up to 1000 times more DNA.</p> <p>Replication in most prokaryotic cells starts from a single point and proceeds in two directions until the entire chromosome is copied.</p> <p>In eukaryotic cells, replication may begin at dozens or hundreds of places on the DNA molecule. Then it proceeds in both directions until each chromosome is completely copied.</p> <p>Overall there are many factors that are needed in order to complete DNA Replications. Replication is motley done within the <b>S</b> phase of the cell cycle</p>
Summary	