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**Structure of DNA and RNA – Student Resources**

1. DNA is the genetic material in all living things. Differentiate between the following:
	1. Chromosome
	2. Gene
	3. Nucleotide
2. Three components of a DNA nucleotide
	1. Draw the deoxyribose sugar and number the carbons
	2. Show which carbon the phosphate group is on
	3. Show which carbon the nitrogen base is on
		1. List the four nitrogen bases. Circle the purines. Put a box around the pyrimidines.
3. DNA is a double stranded molecule. On the diagram below, label hydrogen bonds and phosphodiester bonds. Show how this molecule is antiparallel.

![C:\Users\Wheeler PC\AppData\Local\Microsoft\Windows\Temporary Internet Files\Low\Content.IE5\HNIUVHNM\SugarPhos4_8_09a[1].jpg]()

1. RNA Structure
	1. List two differences between DNA and RNA
		1.
		2.
	2. There are three types of RNA. Define each.
		1. mRNA
		2. rRNA
		3. tRNA

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**Take Away Questions**

1. Name the four nitrogen-containing bases found in DNA molecules and identify how they create a base pair.
2. If the sequence of one strand of a DNA molecule is 5’-AGCCCCGACTCTATTC-3’, what is the sequence of the complementary strand?
3. Provide at least three important differences between DNA and RNA.