

As you watch the PPT, complete this study guide.

1. Nucleic acids are made of _____ which consist of one _____, one _____ and one of four _____.
2. The four nitrogenous bases found in DNA include _____ and _____, both known as **purines** because they have a _____-ring structure. _____ and _____ are known as **pyrimidines** because they have a _____-ring structure.
3. Identify the scientists who made the following contributions to our understanding of DNA.

| | |
|---|--|
| Adenine and thymine occur in equal amounts. Cytosine and guanine occur in equal amounts in each DNA molecule. | |
| X-ray crystallography pictures indicated a spiral structure. | |
| The double helix model | |

4. According to the **complementary base pair rule**, adenine (A) always bonds to _____ and cytosine (C) always bonds to _____.
5. The fact that one side of a DNA molecule appears to be upside-down compared to the other side is known as _____ construction.
6. To indicate this, the side of the DNA molecule that ends with a "free" phosphate is called the _____ end and the opposite end of the molecule is known as the _____ end.