

1. Draw and label the structure of a simplified *single nucleotide*, including sugar, phosphate and base.

2. Complete the table below to show the pairings of the bases in DNA:

Purine	Pyrimidine

3. Where would one find the base *uracil*?
4. In the space below, draw a single strand of three nucleotides, naming the bonds between them and showing the correct relative position of these bonds.

5. Define the term *double helix*.

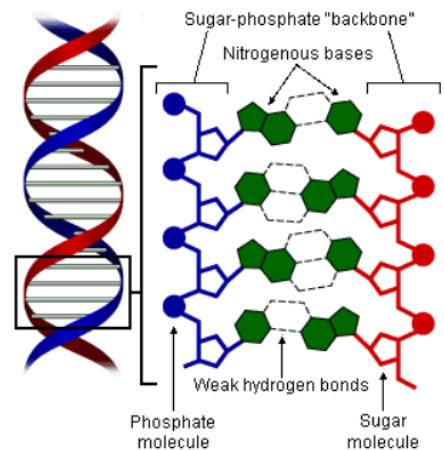
6. In the space below, draw a section of DNA, showing two *anti-parallel* strands of three nucleotides. Label the *bonds which hold the bases together* as well as the correct *complementary base pairs*.

7. Explain the relevance of the following in the double-helix structure of DNA:

a. Complementary base pairing

b. Hydrogen bonds

c. Relative positioning of the sugar-phosphate backbone and the bases



<http://evolution.berkeley.edu/evosite/history/dna2.shtml>

8. The discovery of the structure of DNA earned a Nobel Prize for Watson, Crick and Wilson.

Read the resources at the Nobel Prize website: http://nobelprize.org/educational_games/medicine/dna_double_helix/readmore.html

How is it a good example of the following:

- a. *Internationalism* in science?
 - b. *Cooperation* in science?
 - c. *Competition* in science?
9. What was the role of Rosalind Franklin in the process of the discovery of the structure of DNA and why was she not included in the Nobel Prize?