

**Higher Human Biology**

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| 1. State that a DNA nucleotide contains a deoxyribose sugar, a phosphate and a base.
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| 1. Describe the different types of bond which hold strands of DNA together.
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| 1. State that bases on one strand bond with complementary bases on another.
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| 1. Describe the structure of DNA as 2 antiparallel strands, each with deoxyribose (3’) end and a phosphate (5’) end. These are then coiled into a double helix.
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| 1. Describe the action of the enzyme DNA polymerase in DNA replication and state that it needs a primer to work.
2. Describe that DNA polymerase can only add complementary nucleotides in a 5’to 3’ direction.
3. Explain that the result of this is that one strand is replicated continuously and the other is replicated in fragments which are joined by ligase.
4. State that, prior to replication, the DNA helix must be unwound and hydrogen bonds must break to leave two template strands.
5. Give a detailed description of the steps of the Polymerase Chain Reaction (PCR) when used to amplify small fragments of DNA.
6. Describe the action of the primer in PCR by knowing they have specific target sequences within a stretch of DNA.
7. State that PCR can amplify DNA to help solve crimes, settle paternity suits and diagnose genetic disorders.
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**Human Cells: Structure and replication of DNA (Key Area 2)**

By the end of this topic I will be able to: