# Polymerase Chain Reaction (PCR)

**DNA replication direction: 5’ to 3’**

**Topic1: DNA replication**

**DNA polymerase:** elongate a polynucleotide strand by adding new nucleotides, it cannot start a strand from scratch because it can only bond new nucleotides to a free sugar (3') end of a nucleotide chain. DNA polymerase requires the assistance of a primer, a previously existing short strand of DNA (or RNA) that is complementary to the first part of the DNA segment being copied.

**Primer:** A primer is a short piece of RNA.

Once both the continuous and discontinuous strands are formed, an enzyme called exonuclease removes all RNA primers from the original strands. These primers are then replaced with appropriate bases.

**Topic2:**  **Basic knowledge of PCR**

