

## DNA Replication- Introduction

- Basis for **inheritance**
- Fundamental process occurring in all cells for copying DNA to transfer the genetic information to daughter cells
- Each cell must replicate its DNA before division.

## DNA Replication

- **Semi conservative**
- **Parental strands are not degraded**
- Base pairing allows each strand to serve as a template for a new strand
- New duplex is 1/2 parent template & 1/2 new DNA



# DNA Replication

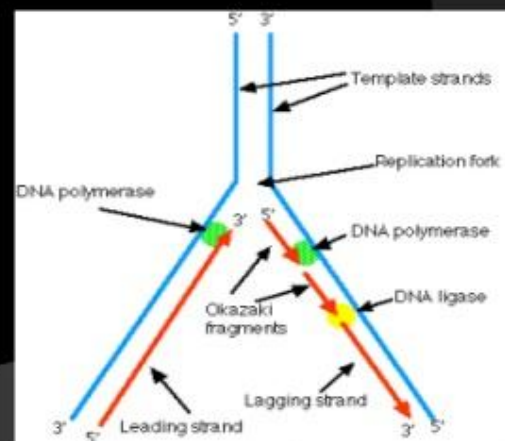
- Semi discontinuous
- Leading & Lagging strands

## Leading strand

- ◆ continuous synthesis

## Lagging strand

- ◆ Okazaki fragments
- ◆ joined by ligases



# DNA Replication

- Energy of Replication
- The nucleotides arrive as
- nucleoside triphosphates
  - DNA base, sugar with **PPP**
    - P-P-P = energy for bonding
  - DNA bases arrive with their own energy source for bonding
  - bonded by enzyme: DNA polymerase III