IDENTICAL RPRODUCTION AND CELL CYCLE

DNA Replication:

Definition: Process by which DNA is duplicated,

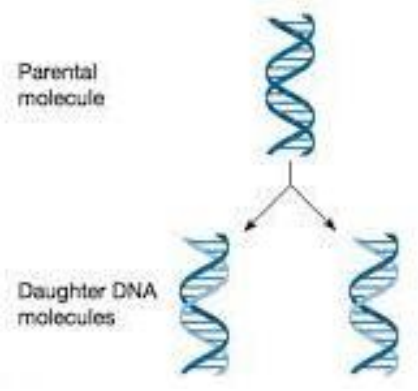
So 1 DNA Molecule → 2 daughter DNA Molecules

Aim: To produce 2 daughter DNA molecules that are identical, carrying same genetic info.

NOTE:

- 2 strands of DNA separate (forming) → Eye of Replication
- DNA Replication is semi-conservative, since the daughter DNA molecule have 1 old strand (From mother DNA molecule) and 1 newly synthesized

Title: A schematic diagram illustrating DNA replication



Same genetic info.

Tools for DNA Replication:

- DNA Molecule
- Energy
- Free Nucleotides {P-D-Nitrogenous bases(A/G/C/T)}
- Enzymes: 1) Helicase Enzyme

  2) DNA Polymerase Enzyme

  3) Ligase Enzyme

Steps of DNA Replication:

- **Helicase enzyme** separates the 2 stands of DNA forming a replication bubble.
- **DNA Polymerase enzyme** starts to add new nucleotides that are complementary to the original strand.
- **Ligase enzyme** join the new nucleotides together forming a new strand.
- 2 daughter cells are obtained, each daughter DNA molecule has an old strand and a new one → which proves that DNA replication is semi-conservative.
- Both molecules have the same sequence of nucleotides, same genetic info., and identical to the mother DNA molecule.

Aim of Taylor's Experiment:

To show that DNA Replication is semi-conservative.