

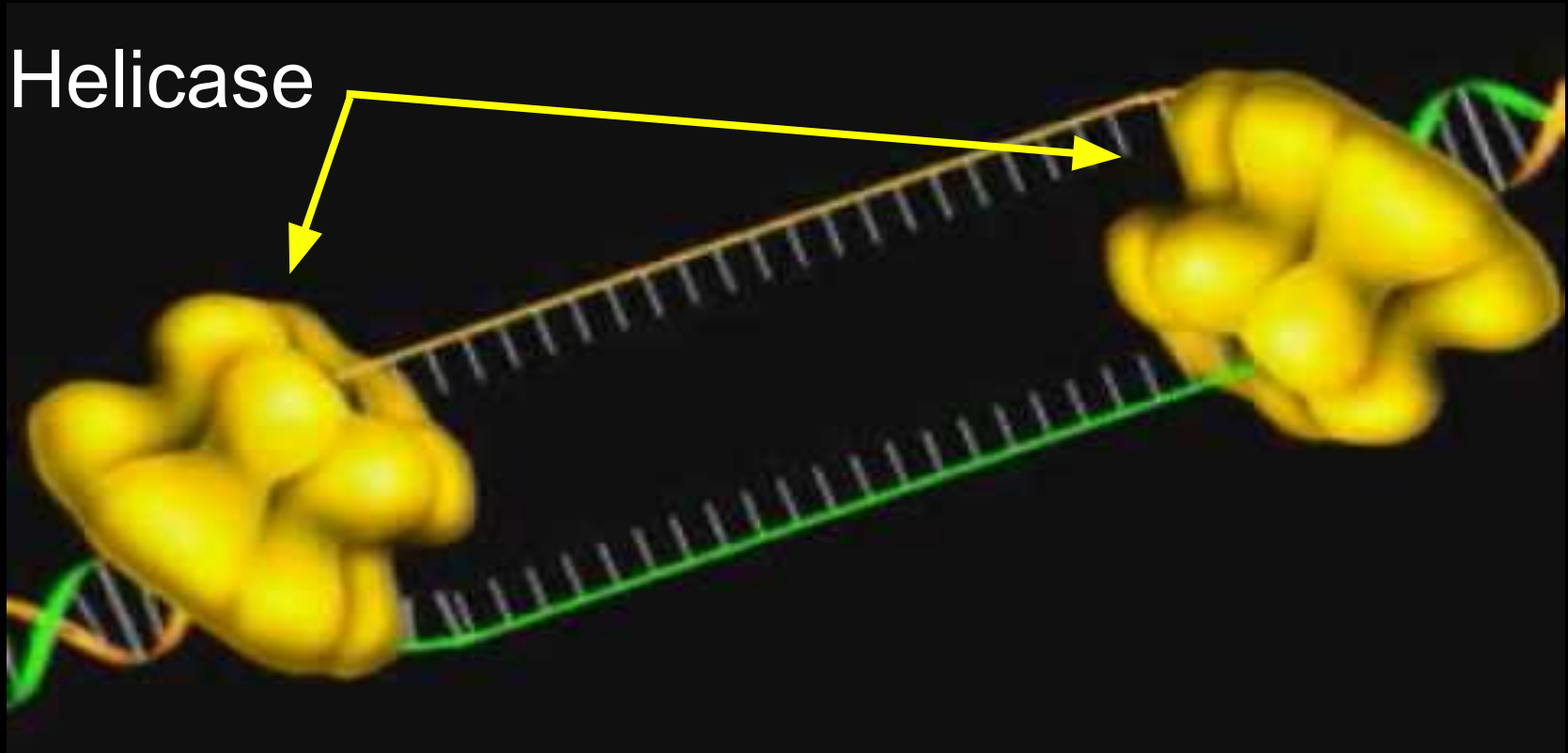
Steps of DNA Replication



Learning Objectives

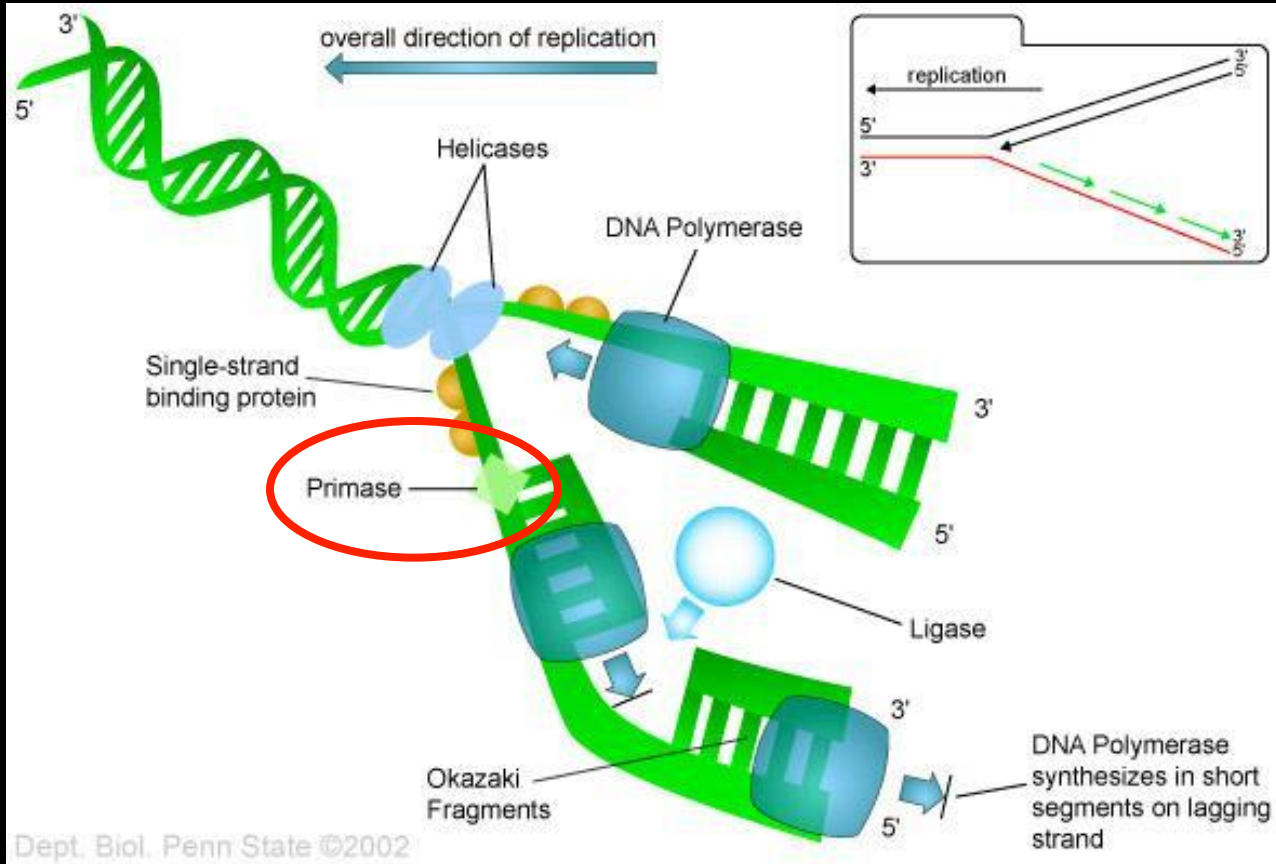
- Describe the steps of DNA replication

Step 1: Uncoil and Unzip - Helicase



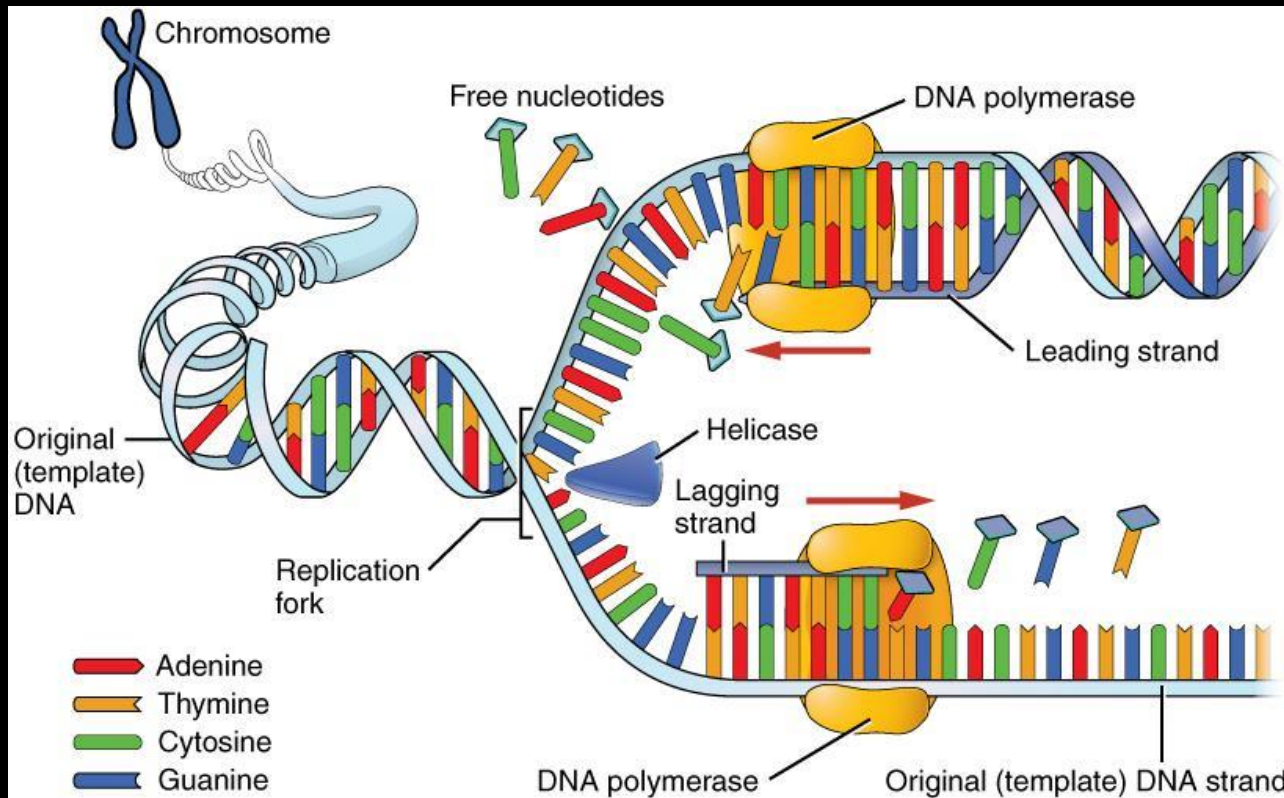
The enzyme Helicase unwinds and separates the 2 DNA strands by breaking the weak hydrogen bonds.

Primase



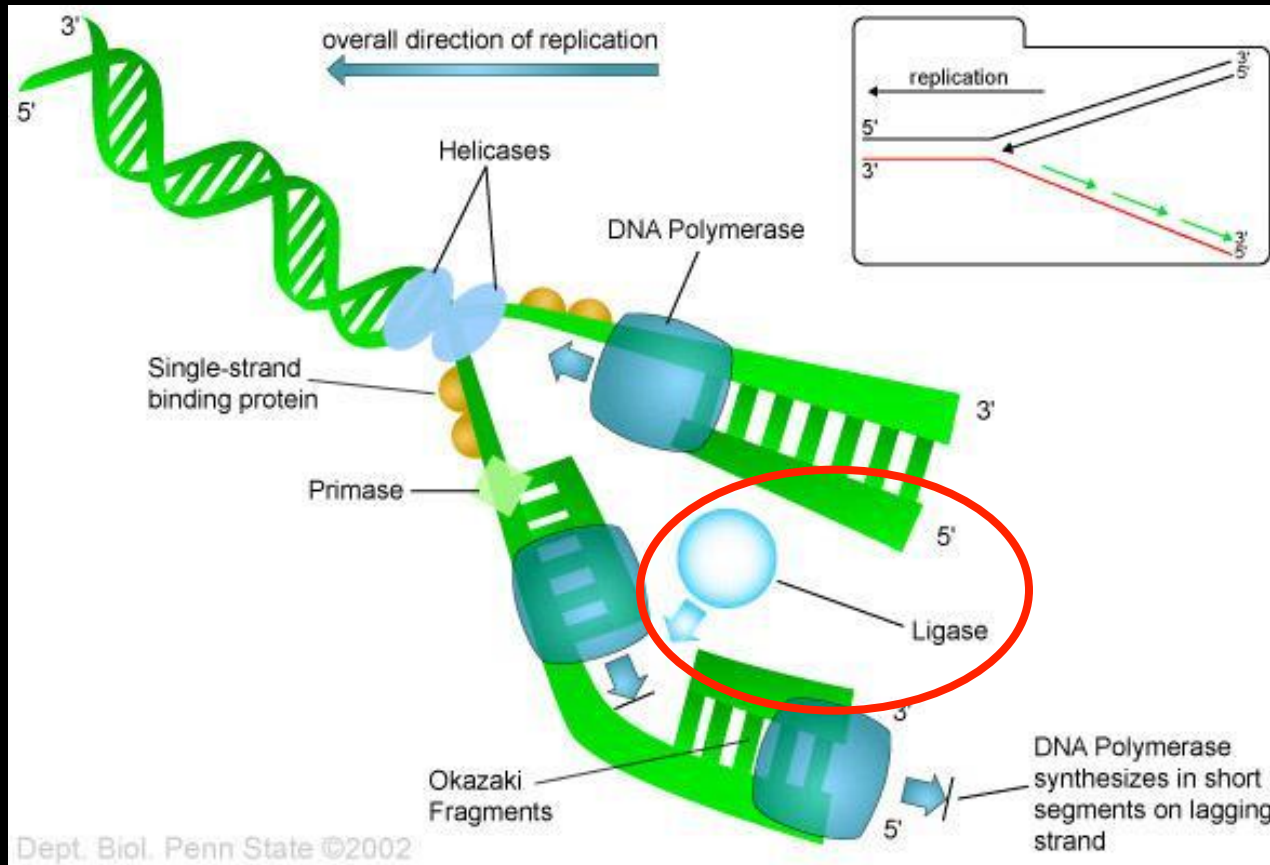
Primase tells DNA polymerase where to start replication.

Step 2: DNA Polymerase



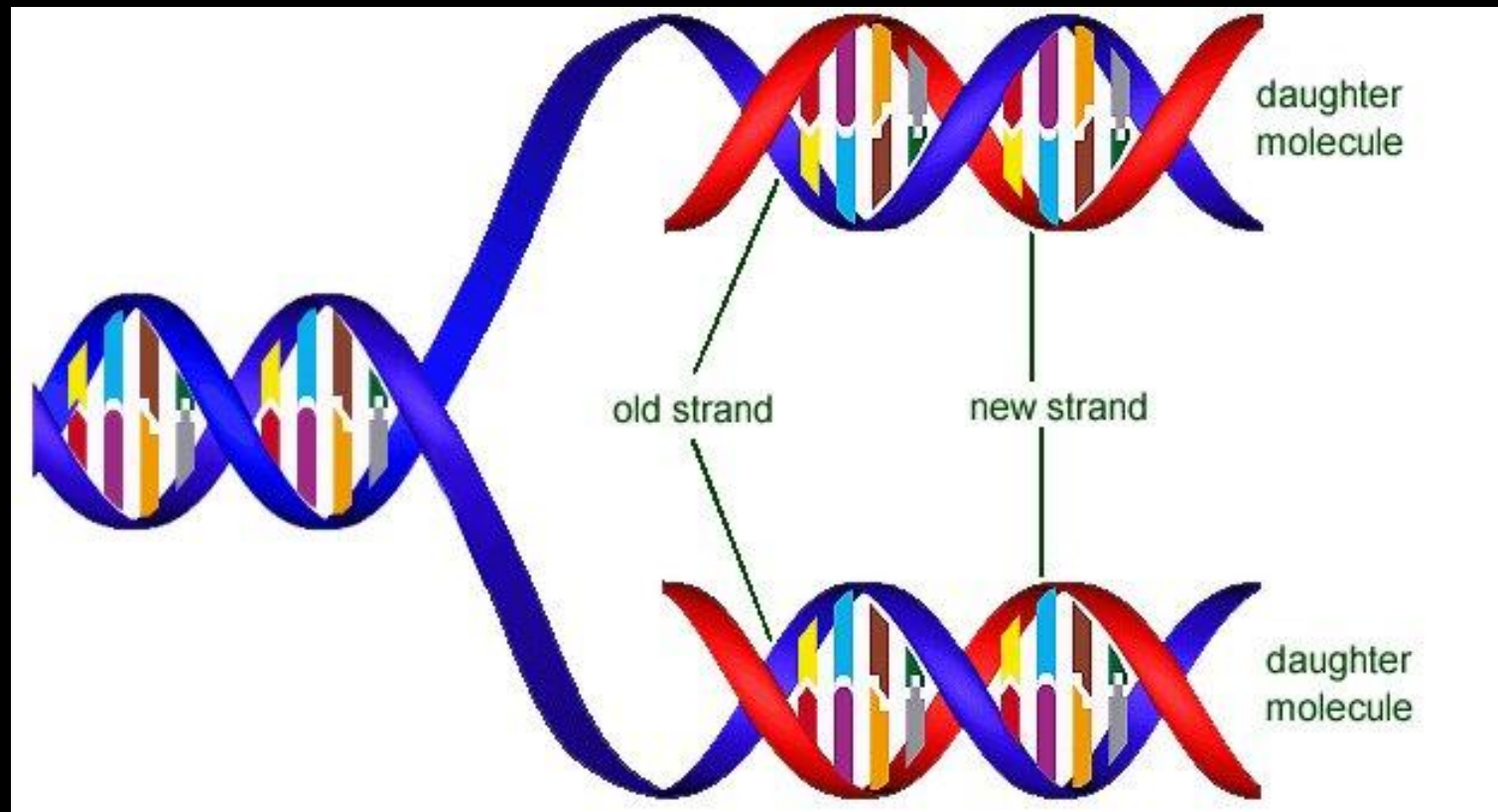
DNA polymerase adds individual nucleotides to produce a complementary DNA strand

DNA Ligase



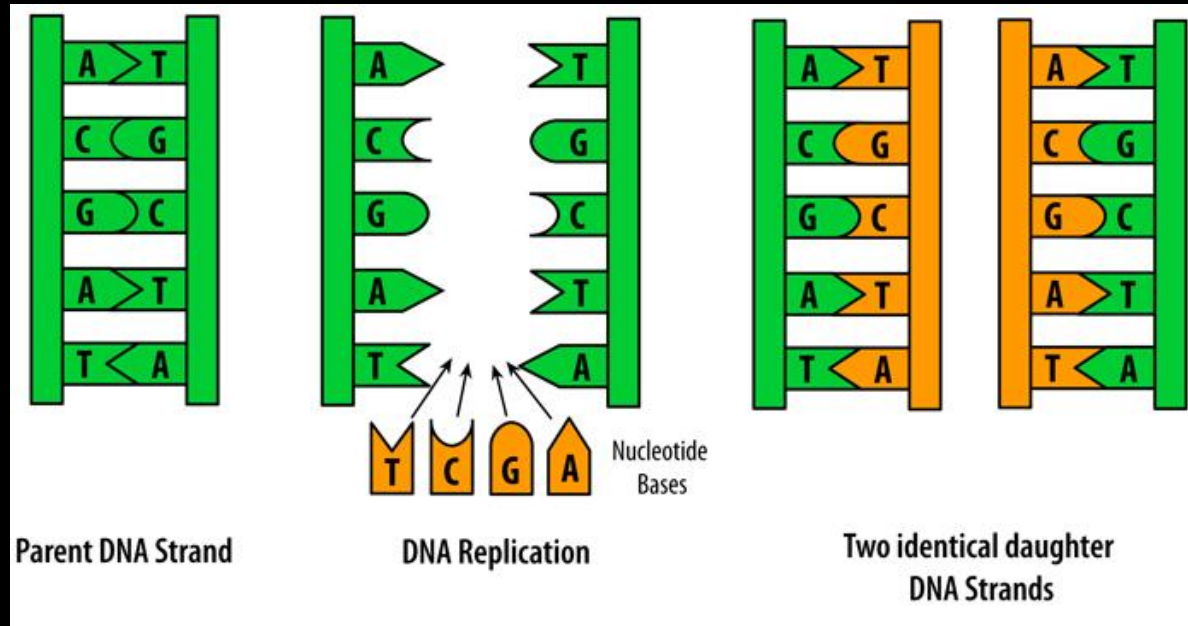
Ligase joins the sections of DNA together

Review: Don't Write Semi-Conservative Replication



Two identical copies of DNA are made, each containing one original strand and one new strand.

Steps of DNA Replication



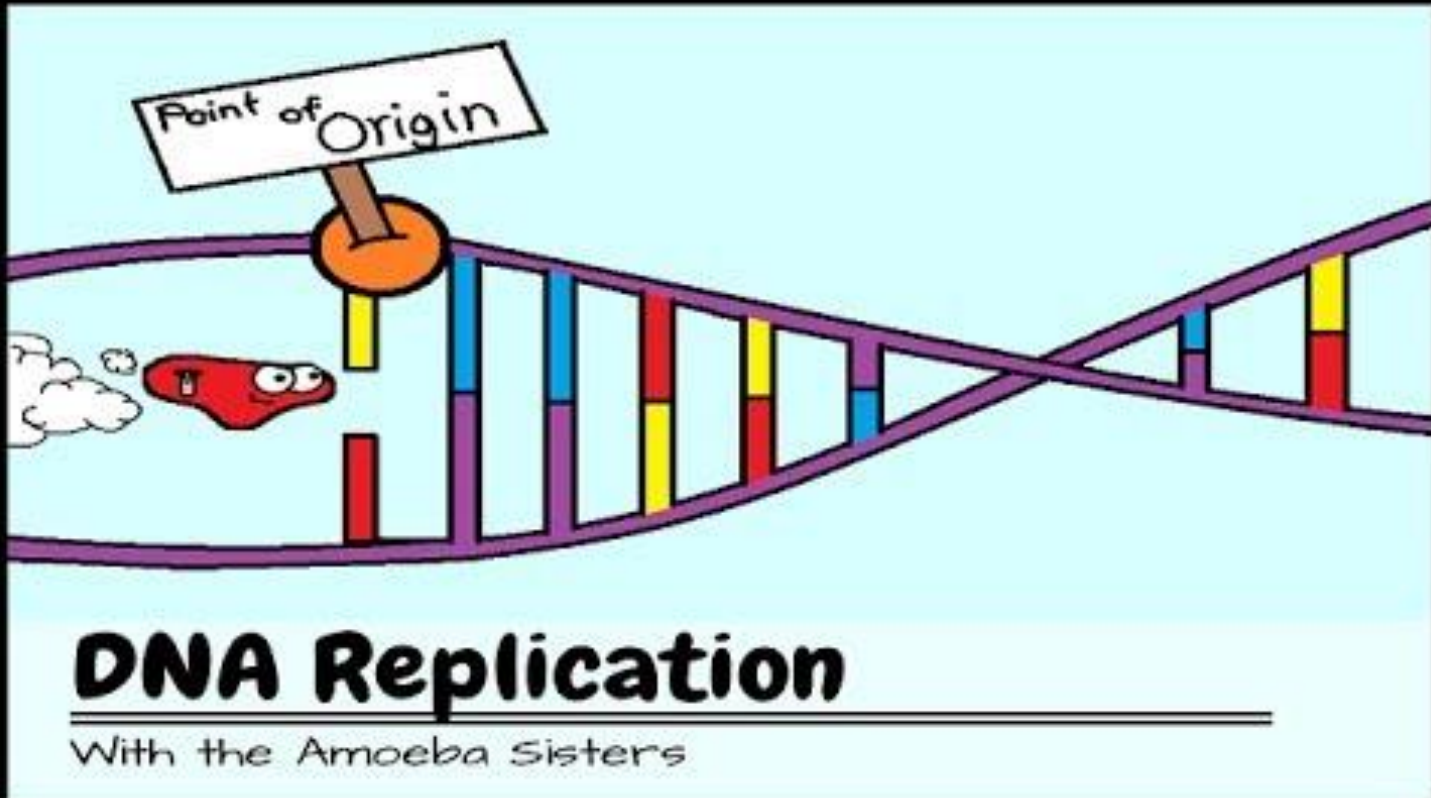
1. Uncoil and unzip parent DNA molecule
2. Complementary nucleotide bases forms new hydrogen bonds with parent strand
3. Each new DNA molecule contains one old strand and one new strand (semi-conservative replication)

Practice DNA Replication

Original DNA: TCCTGACCCCGCCCGGAT
AGGACTGGGGCGGGCCTA

Original DNA: CCTATATCTCTCTATATCTC
GGATATAGAGAGATATAGAG

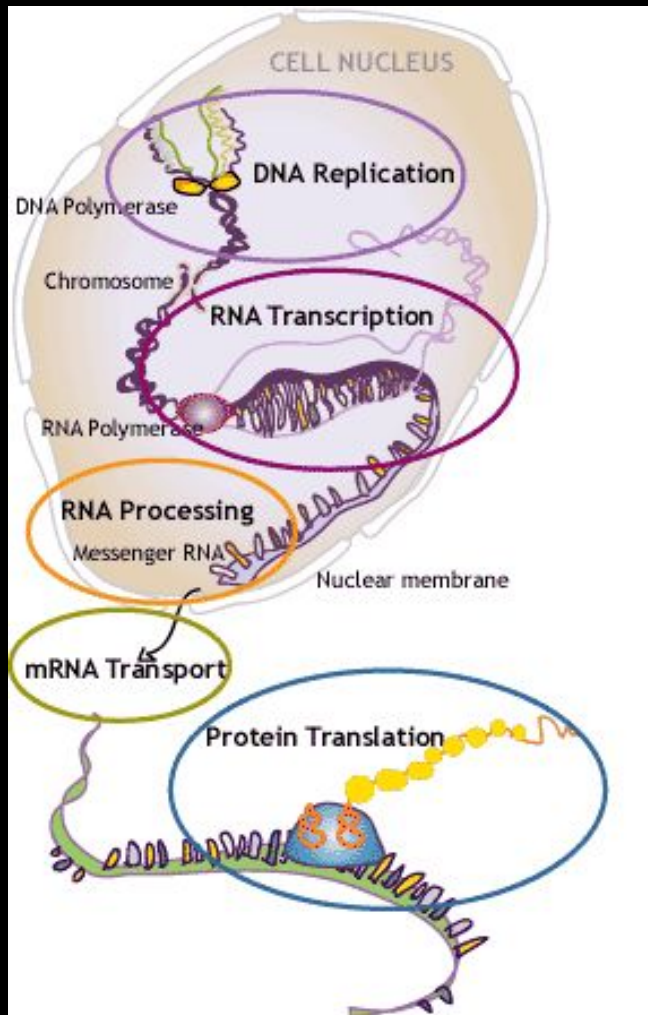
YouTube Video



Stop Here

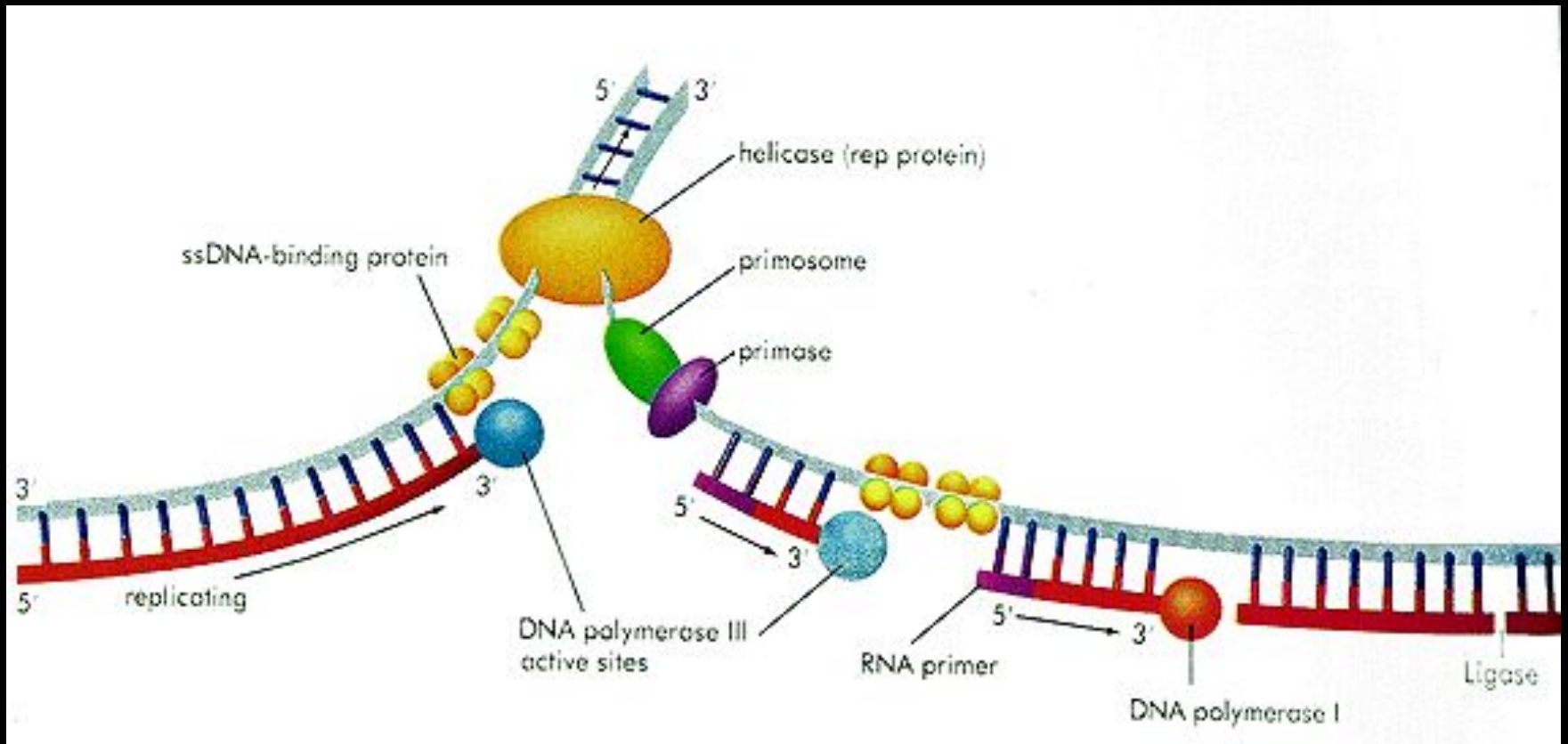


Where Does Replication Occur?



- DNA Replication occurs in the nucleus

Direction of replication



DNA replication occurs in a 5' to 3' direction