

## History and Replication of DNA

1800's

**Mid 1800's**- Principles of genetics described by \_\_\_\_\_

\_\_\_\_\_, did not know about DNA

**Late 1800's**- Friedrich Meischer first

\_\_\_\_\_ but proteins are still thought to be the genetic material.

**1940's**- Avery, MacLeod and McCarthy suggest that DNA, not protein, carries \_\_\_\_\_

**Early 1950's**- Hershey and Chase \_\_\_\_\_ that DNA carries the genetic code.

**Late 1950's**- Watson, Crick and Franklin determine \_\_\_\_\_ of DNA

**1980's**- Sanger develops \_\_\_\_\_

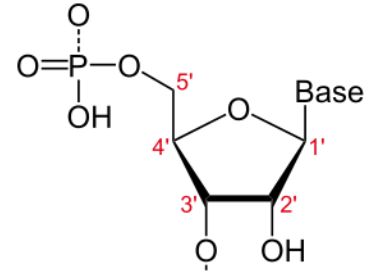
**2000-** \_\_\_\_\_ is sequenced.

**2013**- DNA sequencing is now commercially available for individuals and \_\_\_\_\_

Present

# DNA Replication

- A nucleotide has a front and a back
  - Front- \_\_\_\_\_
  - Back- \_\_\_\_\_
- DNA replication moves in the \_\_\_\_\_ direction
- In double stranded DNA, one strand is in the 5'→3' direction and the other is in the 3'→5' direction

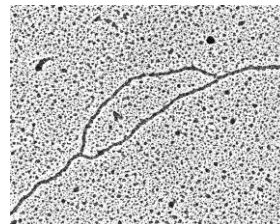


- DNA Replication is \_\_\_\_\_
- Each new copy of DNA has one old and one new strand

- \_\_\_\_\_: DNA helix opens and replication begins
- \_\_\_\_\_: Nucleotides are added to the growing strand
- \_\_\_\_\_: Replication forks meet up and stop, whole DNA strand is now copied

- DNA Helicase- \_\_\_\_\_
- DNA Polymerase- \_\_\_\_\_
- DNA Ligase- \_\_\_\_\_

- Double helix is opened by \_\_\_\_\_ forming a replication bubble
- Eukaryotes have \_\_\_\_\_ points of DNA replication.; Prokaryotes have \_\_\_\_\_
- \_\_\_\_\_ begins adding nucleotides in the 5'→3' direction

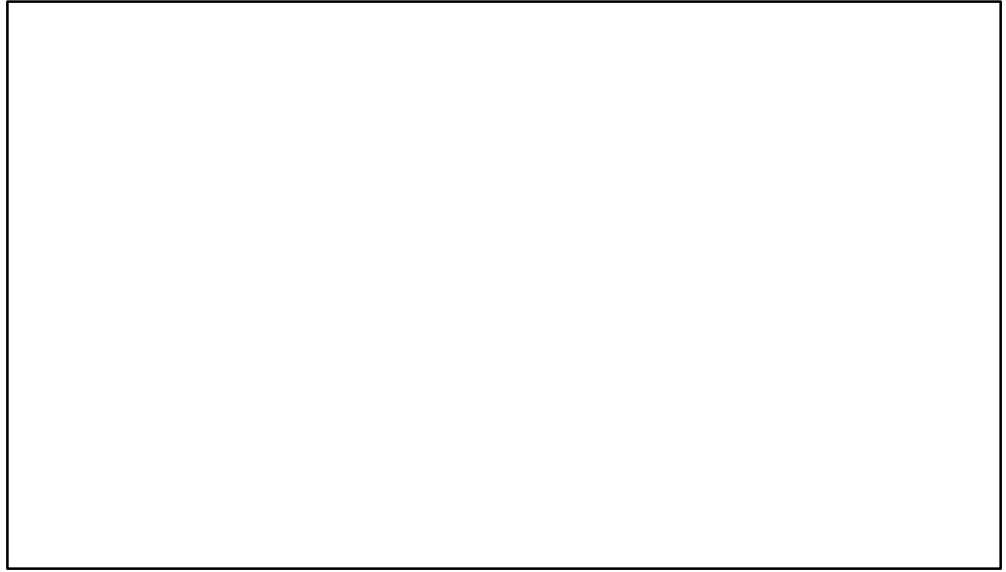


Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

## **History and Replication of DNA**

# DNA Replication

- \_\_\_\_\_ is quickly adding free nucleotides to the growing DNA strand (2 molecules)
- \_\_\_\_\_ unwinds DNA ahead of replication fork
- **Replication fork**



- Leading Strand- \_\_\_\_\_  
\_\_\_\_\_
- Lagging Strand- \_\_\_\_\_  
\_\_\_\_\_

- Replication forks meet and growing strands are linked together by \_\_\_\_\_
- DNA Helicase and DNA polymerase \_\_\_\_\_  
\_\_\_\_\_
- DNA helix closes