

### DNA Replication

- Explain how the replication mechanism is important for DNA replication.
- Describe the process of DNA replication.

### Warren & Curtis

DNA - What is a double-stranded DNA replication?

Condition: while synthesizing the

"complementary strand" of replication in DNA

- Original strands are template for new strands to build

### DNA Replication

Labels given during the Synthesis Phase

Double helix consists of 2 strands "parent"

Each parental (original) strand gets a new complementary strand

Two new double helices are formed

- Each has one PARENTAL (old) strand and one NEW strand
- DNA Polymerase creates the complete bond between base pairs.

Replication begins at **ori** (initiator)

What does each newly formed double helix consist?

A **parental** strand (original)

A **complementary** strand (newly formed to match the original strand)

Consists of the **ori**

- Explain the "one gene one polypeptide" hypothesis.
- Trace the relationship from DNA to protein.
- Describe how genes influence cells.

All proteins are made up of **amino acids**. What amino acids make up a polypeptide?

Amino acids

What are genes?

One strand of DNA is made up of many genes.

Specific segments of the strand are the "amino acids" that code for each gene.

Encoding a gene

DNA to mRNA (ATG) strand is **transcribed** into mRNA

DNA is **translated** into a polypeptide (or protein polymer)

- The genetic code for the gene is expressed.
- DNA strand of genetic information expressed as 20 genes.