

### DNA structure

- Nucleosomes are \_\_\_\_\_
- Non(coding regions o DNA could be \_\_\_\_\_, \_\_\_\_\_ or \_\_\_\_\_
- Regulators of gene expression are \_\_\_\_\_
- Introns are \_\_\_\_\_
- teleomeres are \_\_\_\_\_
- tRNA genes are \_\_\_\_\_

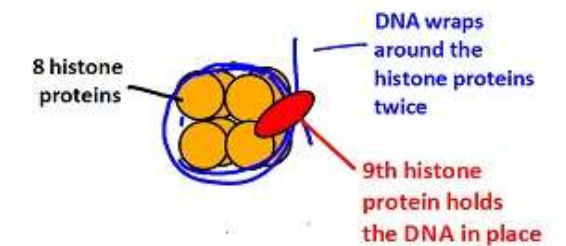
### DNA replication (in prokaryotes) – Enzyme functions

- Helicase \_\_\_\_\_
- DNA gyrase \_\_\_\_\_
- single strand binding proteins \_\_\_\_\_
- DNA primase \_\_\_\_\_
- DNA polymerases I \_\_\_\_\_
- DNA polymerase III. \_\_\_\_\_

What part do nucleosomes play in supercoiling?"

### A Nucleosome

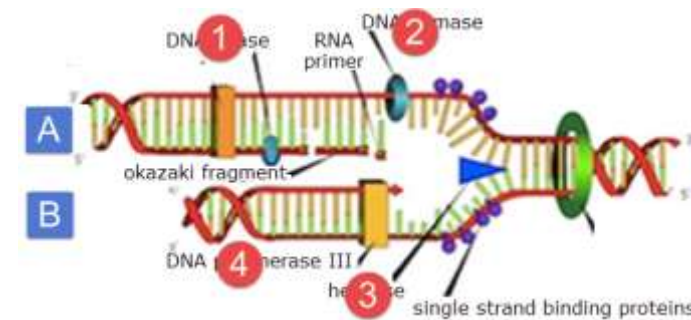
Made from DNA and nine histone proteins.



### Applications

- Crossing over during prophase I of meiosis causes gamete chromosomes to more varied than \_\_\_\_\_
- Dideoxynucleic acids are used in base sequencing because \_\_\_\_\_
- Tandem repeats are short blocks of DNA repeated over and over. This makes them useful in DNA profiling because. \_\_\_\_\_
- Hersey chase experiment used a virus infecting bacteria to provide evidence that DNA was \_\_\_\_\_

Name the four enzymes and the strands A & B



Compare & contrast DNA replication in leading stand with the lagging stand.

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### Transcription & control of gene expression

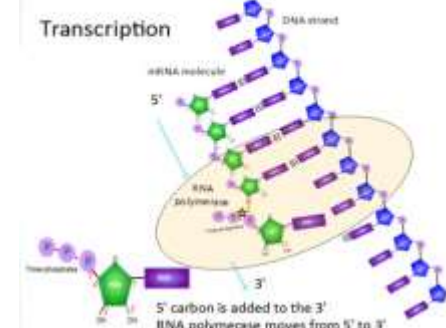
Neucleosomes can regulate transcription by \_\_\_\_\_

Gene expression can be regulated using proteins that bind to specific \_\_\_\_\_ in the DNA.

The environment of a cell can also affect \_\_\_\_\_ and heritable epigenetic factors.

mRNA is modified by splicing after transcription to remove \_\_\_\_\_ or to increase the number of different \_\_\_\_\_ made by a single gene.

### 5' to 3' direction



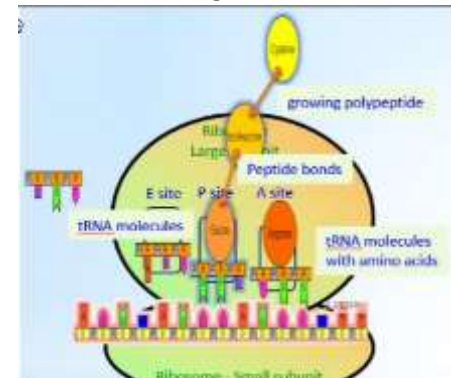
Outline the three stages of translation

Initiation \_\_\_\_\_

Synthesis \_\_\_\_\_

Termination \_\_\_\_\_

### Ribosome binding sites



Compare & contrast free ribosomes and bound ribosomes

Free ribosomes	Bound ribosomes

- State what makes primary structure in a protein

\_\_\_\_\_

\_\_\_\_\_

- Describe these secondary structures

Alpha helix \_\_\_\_\_

Beta pleated sheet \_\_\_\_\_

Describe tertiary and quaternary structure in proteins using a diagram

