



Structure Function and Packaging of DNA

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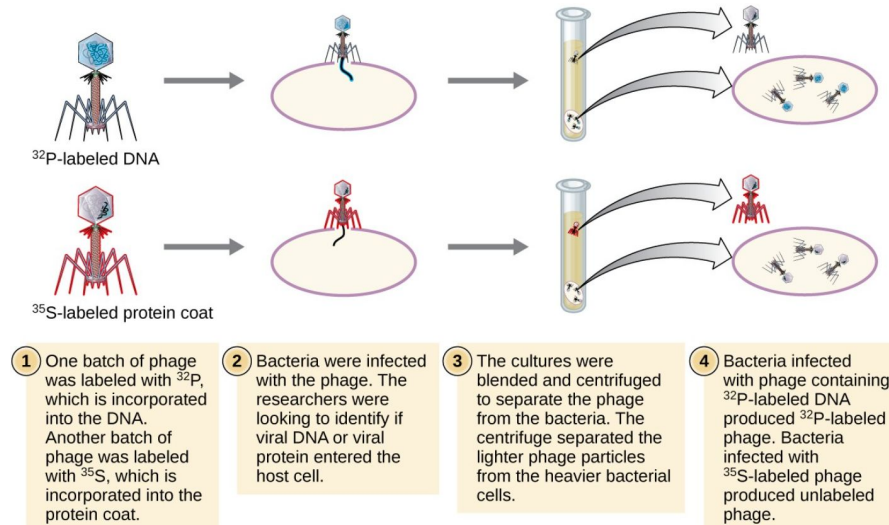
*Speaker notes has more detailed information

DNA as the Genetic Material

DNA, or deoxyribonucleic acid carries the instructions necessary for growth, development, and reproduction through sequences of nucleotides

Hershey and Chase (1952)

First pieces of evidence suggesting that DNA could serve as the genetic material

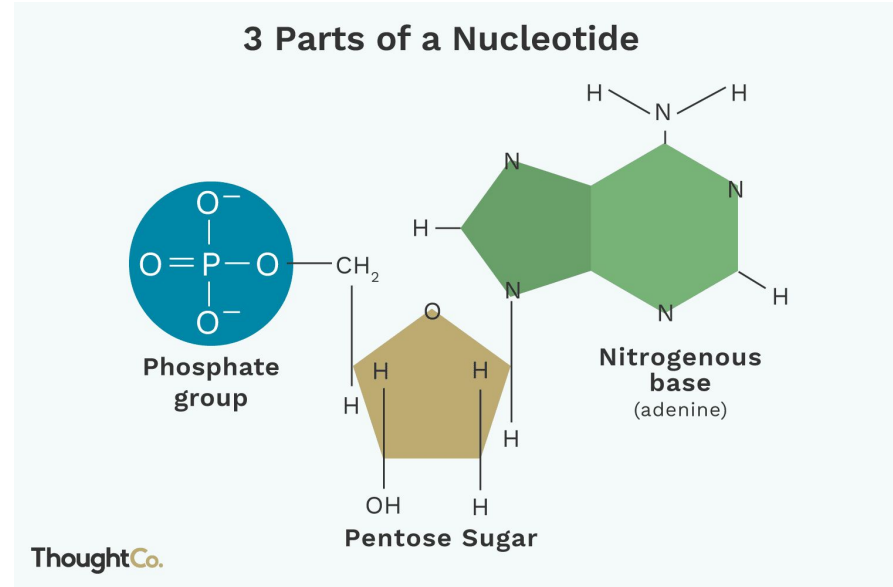


DNA Structure

DNA is made of nucleotides

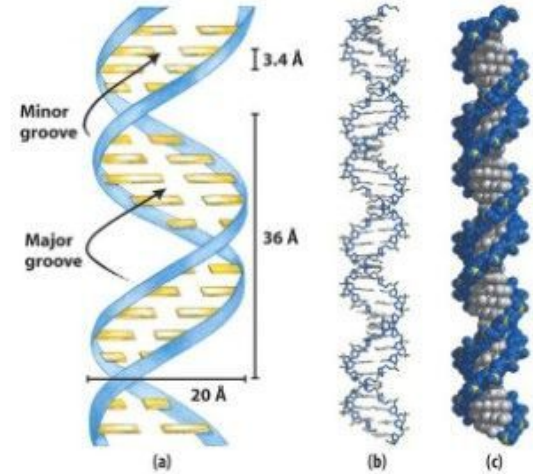
Nucleotides composed of

1. Phosphate group
2. Pentose sugar
3. Nitrogenous Bases



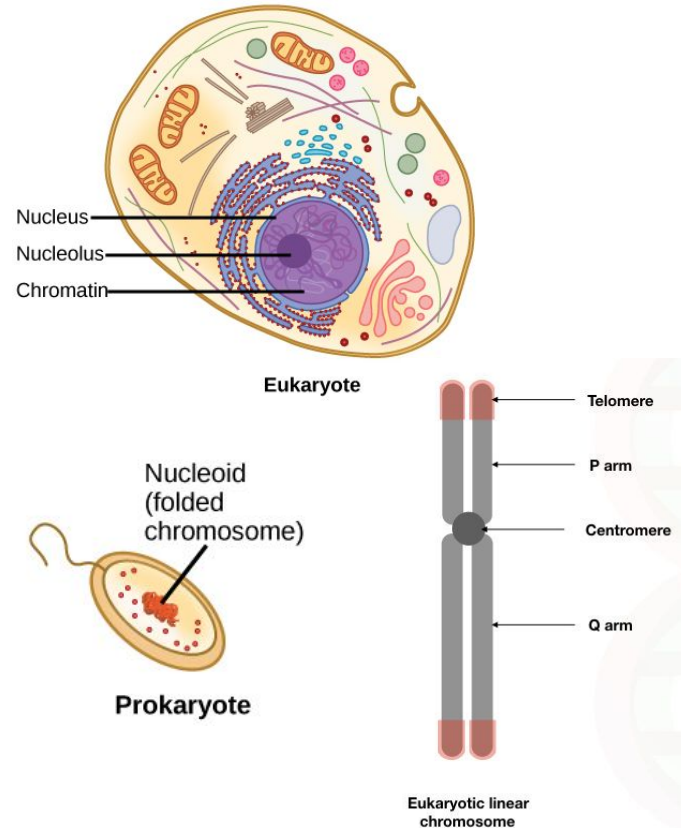
DNA Structure

1. Has major and minor grooves
2. Strands run antiparallel
3. DNA is a double helix
4. Two strands of complementary sequences

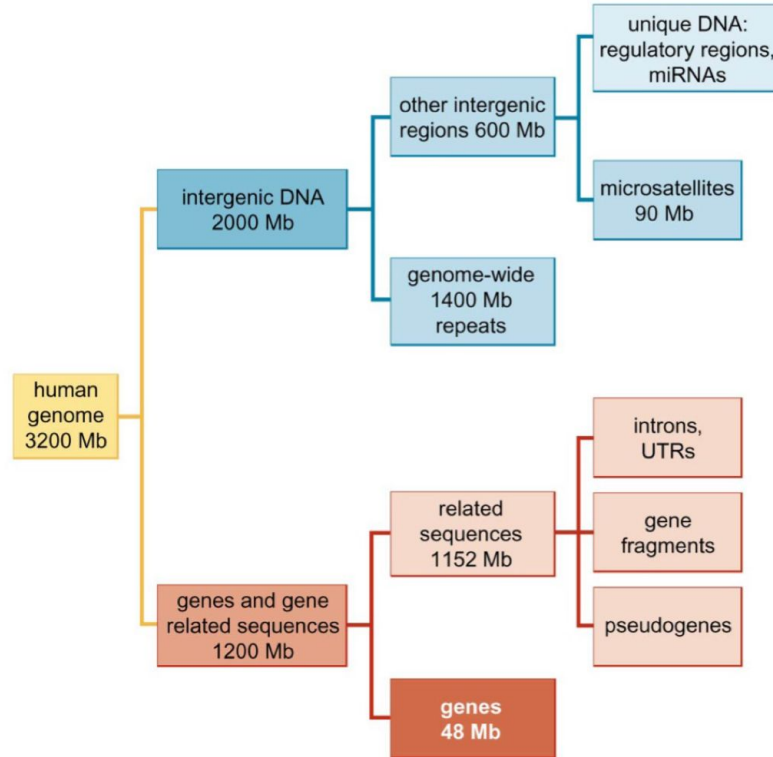


Genome Structure

- Chromosomes are highly organized structures composed of DNA and proteins.
- Linear chromosomes are composed of:
 - Centromeres
 - Telomeres
 - Replication Origins

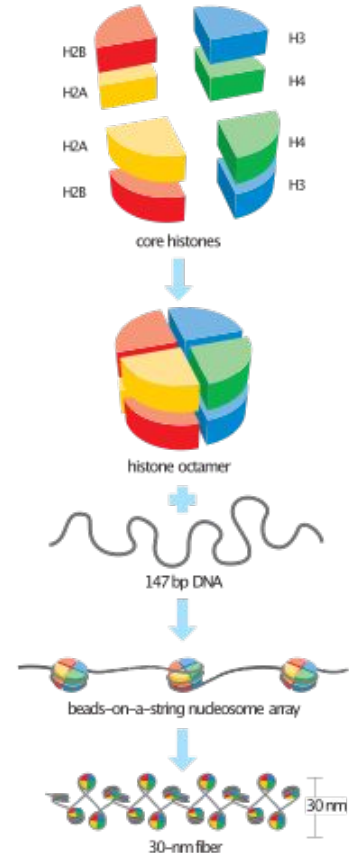


Genome Structure



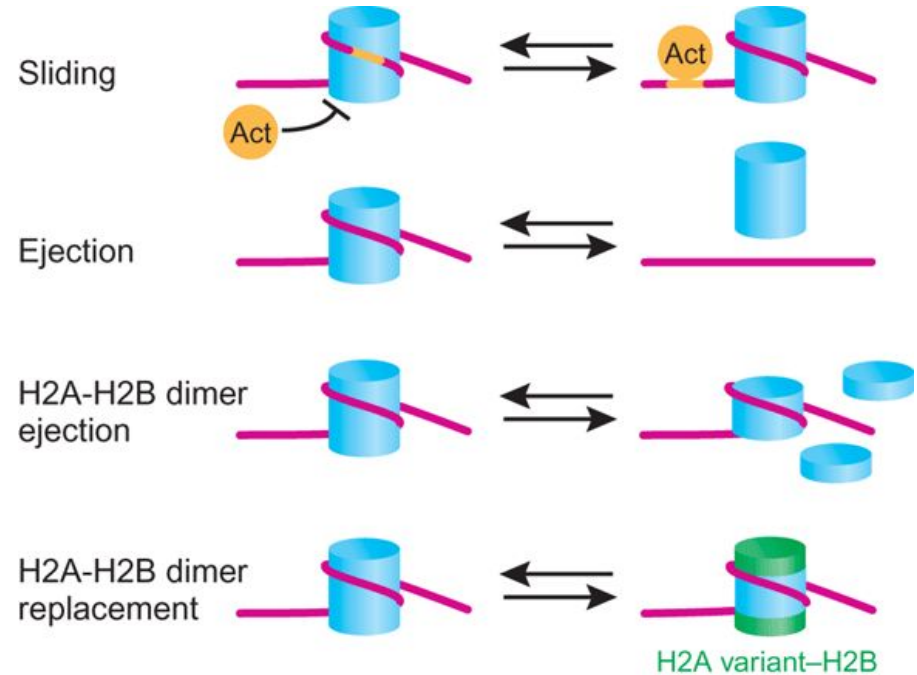
DNA Packaging

- DNA is wrapped around nucleosomes made of histone proteins
- Histone tails stick out from nucleosomes allowing them to be modified
- DNA packaging is dynamic



DNA Packaging

- Nucleosome positioning determines if sequences that proteins bind to are accessible
- Histone remodelling complexes facilitate nucleosome movement





Thank you

