- Offered information of the chemical structure of DNA e.g. it is a chemical structure of nucleotides
- Chargaff's experiments demonstrated a 1:1 ratio between A and T, and between C and G- thus it allows complimentary base pairing
- 1953- Watson and Crick proposed their double helix model of DNA

Extra Info

- Watson and Crick said that this double helix allows the replication of DNA
- DNA is double helix
- There is a sugar-phosphate backbone
- Strands run anti-parallel
- Bases are in the middle
- There are hydrogen bonds between bases- 2 between A and T and 3 between G and C
- Strands wrap around each other once every 10 base pairs
- DNA carries the DATA necessary to produce a new organism

How does one DNA molecule become two?

Three models:

- Semi-conservative replication- Watson and Crick model, each is composed of one parent strand and one new strand
- Conservative replication- parental double helix remains intact, daughter double helix strands are newly synthesised
- Dispersive replication- at completion of replication, each double helix contains bits of original and new strand

Centrifuging-

- if at bottom= dense
- If at top= light

Fluorescence dye added and detected- as DNA is not coloured

Gene Expression

- Bases=> amino acids=> proteins
- 20 different amino acids and so many different proteins produced
- Each amino acid is produced by a codon- a triplet code
- 4x4x4=64 combinations
- …but only 20 amino acids produced, so there must be a **degenerate code**- -some codes produce the same amino acids
- The code is **non-overlapping**:
  - Codon consists of more than one nucleotides – in humans it is 3 as it is a triplet codon
  - Each nucleotide is part of ONE codon
  - If it was overlapping, then a mutation would affect 3 amino acids eg. CATGCATCA