Introduction to genes and inheritance

DNA is made up of nucleotides – sugar, nitrogenous base, and phosphate.

It has a sugar phosphate backbone, formed by phosphodiester bonds.

There are 23 pairs of chromosomes – which contain autosomes and sex chromosomes.

Genome = the entire set of the organisms DNA

Gene = hereditary units of a specific loci within the genome

DNA into proteins

Transcription into irony occurs in nucleus

mRNA is transported to the cytoplasm

Translation occurs, converting MRNA into proteins

Chromosomal abnormalities

Chromosomal abnormalities are created by defects in the genome. This could be MACROLEVEL or MICROLEVEL. At MICROLEVEL, defects in the genome are usually due to point mutation or Indels. Point mutations includes silent nonsense and missense. Silent – no amino acid change. Nonsense – premature stop codon. Missense – amino acid change. Indels are insertions or deletions. At MACROLEVEL, defects in the genome are due to numerical issues, such as TRANSLOCATION, or triplet coding for one chromosome. An example of the disease caused at MACROLEVEL is Down's syndrome.

GENOTYPE is the organism's genetic make-up.

The **PHENOTYPE** provides for the Genotype - hence, the outward appearance of the organism.