B3: Genetics

1. Meiosis	
Gametes	Sex cells- egg and sperm
Fertilisation	Sperm cell fuses with egg cell and nuclei combine.
Zygote	A fertilised egg cell
Gene	Length of DNA coding for a protein. Controls your characteristics
Genome	All the DNA and genes in an organism
Diploid	A cell that has 2 sets of chromosomes- 23 pairs of chromosomes in humans
Haploid	A cell with 1 set of chromosomes- 23 single chromosomes in humans
Meiosis	Cell division that makes gametes
Meiosis Daughter Cells	One division by meiosis creates 4, haploid, non-identical daughter cells.

2. DNA	
Chromosome	Large DNA molecule made into a small package by tightly coiling DNA around a protein.
DNA Structure	Two strands, double helix, complementary base pairs, sugar-phosphate backbone
DNA Bases	Adenine, A; thymine, T; cytosine, C; guanine, G
Complementary Base Pairs	A pairs with T C pairs with G
Hydrogen Bonds	Weak force holding the two strands of DNA together.

4. Alleles	
Allele	Different version of the same gene. We have two alleles of each gene.
Homozygous	Two copies of the same allele
Heterozygous	Two different copies of an allele
Dominant Allele	One copy needed for characteristic to show. Written as a capital.
Recessive Allele	Two copies for the characteristic to show. Written as lowercase.
Genotype	The combination of alleles in an organism.
Phenotype	The characteristics produced by the alleles.
Genetic Diagram	Shows the likelihood of offspring produced by parents with certain genotypes.

5. Inheritance	
Sex Chromosomes	Female: XX Males: XY
Punnet Squares	Uses the genotypes of male and female gametes to predict the genotypes of the offspring.
Family Pedigree Chart	Chart showing how genotypes are inherited down through a family.

6. Gene Mutation	
Mutation	A change to the bases in a gene.
Cause of Mutations	Mistakes copying DNA during cell division, DNA damage from chemicals or radiation

7. Variation	
Variation	Natural differences between members of a species that affect the chance of survival.
Genetic Variation	Variation caused by genes.
Environmental Variation	Caused by interaction with the surroundings.
Acquired Characteristics	Characteristics caused only by the environment.
Continuous Variation	Data can be any value in a range (height, weight, etc.)
Discontinuous Variation	Data can be a limited set of values (blood group, eye colour, etc.)