AS91157 Genetic Variation Glossary

Allele	Different forms of a gene due to slightly different order of bases e.g. brown eyes and blue eyes
Allele frequency	Is a measure of the relative frequency of an allele on a genetic locus in a population.
Asexual reproduction	Reproduction involving only one parent. Doesn't produce genetic variation
Chiasma	Point of contact, the physical link, between two (non-sister) chromatids belonging to homologous chromosomes during crossing over
Co-dominance	Heterozygous individuals have a phenotype that shows the phenotype of both parents
Complete dominance	A form of dominance in heterozygous condition wherein the allele that is regarded as dominant completely masks the effect of the allele that is recessive
Crossing over	Occurs during meiosis, when the homologous chromosomes line up at the equator, sometimes they tangle, snap and exchange genetic information.
Diploid	A cell or an organism consisting of two sets of chromosomes: usually, one set from the mother and another set from the father.
Evolution	Is the change in the characteristics of a species over several generations and relies on the process of natural selection.
Fertilisation	A process in sexual reproduction that involves the union of male (sperm) and female (ovum) gametes (each with a single, haploid set of chromosomes) to produce a diploid zygote
Fi	The parental generation (P) is the first set of parents crossed. The F1 (first filial) generation consists of all the offspring from the parents
Founder effect	Is the loss of genetic variation that occurs when a new population is established by a very small number of individuals from a larger population.
Gamete	Sex cell of an organism e.g. sperm, egg, pollen or ova
Gametic cells	Sex cells, e.g. sperm, egg, pollen and ova, cells with half the chromosome number. If a mutation occurs in one of these cells and that cell results in a zygote, all cells in the offspring will have that mutation
Gene	A length of DNA that holds the instructions for a characteristic
Gene pool	Refers to the total number of genes of every individual in a population.
Genetic diversity	The total number of genetic characteristics in the genetic makeup of a species.

Genetic drift	Is the change in the frequency of an existing gene variant (allele) in a population due to random chance alone and not natural selection.
Genotype	The genetic make-up of the organism
Haploid	When a cell has half the usual number of chromosomes.
Heterozygous	Different forms of the allele are present in the genotype e.g. Hh
Homologous chromosomes	Chromosome pairs (one from each parent) that are similar in length, gene position, and centromere location. They contain. The position of the genes on each homologous chromosome is the same. However, the genes may contain different alleles.
Homozygous	The same form of the allele is present in the genotype e.g. HH
Incomplete dominance	Heterozygous individuals have a phenotype that is intermediate between the two homozygous phenotypes (like a bland)
Independent assortment	The way the homologous chromosomes line up at the equator maternal and paternal, is completely random
Lethal genes	Alleles that produce a gene product that kills the offspring
Linked genes	Genes located on the same chromosome that tend to be inherited together
Meiosis	The type of cell division which produces gametes
Migration	Movement of organisms into (immigration) and out (emigration)of a population.
Multiple alleles	When three or more alternative forms of a gene (alleles) that can occupy the same locus. e.g. ABO blood types
Mutation	A permanent change in the bases on the DNA. It is the only way of creating new alleles
Natural selection	The process by which heritable traits increase an organism's chances of survival and reproduction. These traits are favoured than less beneficial traits
Pedigree chart	Is a diagram that depicts the biological relationships between an organism and its ancestors
Phenotype	The physical appearance of the organism
Population bottleneck	Is an event that drastically reduces the size of a population, may be caused by various events, such as an environmental disaster. The population bottleneck produces a decrease in the gene pool of the population because many alleles, or gene variants, that were present in the original population are lost.
Pure breeding	A group of identical individuals that only produce one type of gamete due to the fact they are homozygous

Segregation	The process that occurs during meiosis where pairs of alleles are separated when the homologous chromosomes split
Selective pressure	Can take many forms, including environmental conditions, availability of food and energy sources, predators, diseases, and even direct human influence. The selective pressure means that animals that don't have these characteristics are less likely to survive and reproduce due to natural selection.
Sexual reproduction	Reproduction involving two parents. Produces genetic variation.
Somatic cells	Body cells, e.g. skin cells, if a mutation occurs in these cells it will not be passed on to offspring.
Test cross	A genetic cross between a homozygous recessive individual and a corresponding suspected heterozygote to determine the genotype of the latter.