AS91159 Gene Expression Glossary

Anticodon	Three consecutive bases on the tRNA
Codon	Three consecutive bases on the mRNA
Deletion mutation	A mutation on the DNA where a base(s) is removed, resulting in a frame shift
DNA	Deoxyribose nucleic acid, A joins with T, C joins with G. Double stranded, helix shaped large molecule, a whole chromosome. Deoxyribose sugar
Enzyme	A folded protein which acts as a biological catalyst to speed up the rate of a chemical reaction in an organism
Frameshift	Change in bases that the ribosome reads
Gene	A piece of DNA which codes for the making of a protein / feature
Gene expression	The process where the instructions on our DNA are converted into a functional protein, includes transcription, translation and protein folding
Genotype	The genetic make-up of an organism for a feature
Insertion mutation	A mutation on the DNA where a base(s) is added resulting in a frame shift
Metabolic pathway	A series of enzyme-controlled reactions, where the product of one reaction becomes the substrate of the next
Missense mutation	A change of the base on the DNA which codes for a different amino acid. This may or may not alter the shape of the protein and therefore it's function
mRNA	Messenger RNA. Made during transcription in the nucleus. Carries the instructions to the ribosome to make a polypeptide chain. Contains codons
Mutagen	Environmental factor which causes the mutation e.g. agent orange, X-rays etc
Mutation	A permanent change in the bases on the DNA
Non-sense mutation	A change of the base on the DNA which changes the instructions, so a STOP codon occurs in the wrong place. Protein is greatly affected
Peptide bond	Bond formed between 2 amino acids during translation
Phenotype	The physical appearance of a feature
Point mutation	A change of only one or a few bases on the DNA

Protein	A substance made up of many amino acids joined together to form a polypeptide chain, which gets folded into a functional protein (enzymes are a type of protein)
Redundancy	The fact that multiple codons code for the same amino acid, e.g. CCU, CCC, CCA and CCG all code for the amino acid Pro
RNA	Ribonucleic acid. A bond with U and G bonds with C. Three types, tRNA, mRNA and rRNA. Single stranded and shorter than DNA. Sugar is ribose
Same-sense mutation	A change of the base on the DNA where the bases still code for the same amino acid. This is due to the redundancy of the genetic code
Silent mutation	A mutation that is neither favourable nor harmful, that remains in a population
Start codon	The start signals on the mRNA which initiates translation. Always AUG
Stop codon	These 3 codons on the mRNA (UAA, UAG, UGA) do not code for an amino acid therefore telling the ribosome where to stop translation.
Substitution mutation	A mutation where the base(s) on the DNA are swapped
Transcription	The process by which DNA going to mRNA, occurs in the nucleus. Controlled by RNA polymerase
Translation	The process by which mRNA going to polypeptide chain, occurs in the cytoplasm on the ribosome
Triplet	Three consecutive bases on the DNA
tRNA	Transfer RNA. Carries an amino acid to the ribosome. 3 bases on the mRNA = an anticodon