anticodon	a sequence of three bases on tRNA which is complementary to the codon on mRNA
chromosome mutations	alterations in the arrangement of a whole chromosome or a large section of a chromosome (multiple genes)
codon	a sequence of three bases on DNA or mRNA that codes for a single amino acid
DNA polymerase enzyme	a protein molecule that catalyses the synthesis of DNA from nucleotides
DNA replication	the process whereby DNA makes an identical copy of itself in preparation for cell division

gametic mutations	changes in the nucleotide sequence of genetic material which can be passed on to offspring
gene expression	the effect of a gene which can be seen or measured; the result of decoding information in the DNA sequence of a gene to produce a protein
gene mutation	the alteration in the DNA sequence of genetic material resulting in a change in a single gene
genome	the total genetic material within a cell or an individual
helicase	an enzyme which functions in DNA replication to break the hydrogen bonds holding the two strands of the DNA molecule together

heritable	able to be passed on to the next generation and future generations due to its genetic basis
induced mutations	an alteration in the nucleotide arrangement in DNA as a result of exposure to an environmental agent such as a chemical or radiation
meiosis	a process of cell division that is considered to be a reduction division because it halves the number of chromosomes in the resulting gametes that it produces
messenger RNA (mRNA)	a single-stranded molecule of RNA that is made in the nucleus from a DNA template and then moves to the cytoplasm, where its genetic code determines the amino acid sequence in protein synthesis
mitosis	the process of cell division whereby somatic (body) cells undergo a single nuclear division, giving rise to two genetically identical daughter cells

mutagens	radiation or substances which cause a mutation
mutation	a structural change in genetic material that usually arises during DNA replication and that may give rise to new heritable characteristics
non-coding strand or sense strand	the DNA strand that is complementary to mRNA and acts as a template during transcription
polypeptide	a molecule consisting of a single chain of amino acids joined together by peptide bonds
protein synthesis	the process by which amino acids are arranged in sequence to form proteins, coded for by the DNA and involving mRNA, transfer RNA and various enzymes

ribosomes	organelles in the cytoplasm of cells that are responsible for protein synthesis
RNA polymerase	a protein molecule that catalyses the synthesis of DNA from nucleotides
somatic mutations	changes in DNA sequences that occur in somatic (non-sexual) cells
spontaneous mutations	changes in the DNA sequences that arise randomly as a result of an error in a natural process, such as DNA replication in cells
transcription	the synthesis of RNA from a DNA template

transfer RNA (tRNA)	a vehicle of amino acid transport in protein synthesis