

Allele frequency - how common an allele is in a population

Alleles - different forms of the same gene

Anatomical adaptations - structural features of an organism that increase the chance of survival

Anticodon - three bases found in tRNA, complementary to a specific codon

Aseptic technique - practical techniques to prevent contamination of cell cultures with unwanted microorganisms

Base deletion - a type of mutation where a base is deleted

Base substitution - a type of mutation where one base is substituted for another

Behavioural adaptations - behaviours of an organism that increase the chance of survival

Binomial - universally identifies a species using the genus and species names e.g. *Homo sapiens*

Biodiversity - the variety of living organisms in a particular area, biodiversity is higher when there are more species

Chromosome non-disjunction - failure of chromosomes to separate properly during meiosis, a type of chromosome mutation

Class - the taxon between phylum and order

Codon - a sequence of three mRNA bases coding for a specific amino acid

Community - all the populations of different species in a habitat

Courtship behaviour - behaviour which is a necessary precursor to successful mating, is specific to one species

Crossing over - regions of chromatids are exchanged when homologous chromosomes are next to each other before the first division in meiosis, creates genetic variation

Daughter cell - produced when parent cells divide

Degenerate - describes how one amino acid can be coded for by more than one base triplet

Diploid - a cell which has two copies of each chromosome, the normal number of chromosomes found in a cell

Directional selection - individuals with an extreme characteristic are more likely to survive and reproduce, resulting in a shift of the mean characteristic in the offspring

Domain - the largest taxon, comes above kingdom

Evolution - the gradual change in species over time which happens as a result of natural selection

Exons - regions of genes which code for amino acid sequences

Family - the taxon between order and genus

Functional RNA - RNA that does not code for protein but has another function e.g. tRNA, rRNA

Gametes - haploid cells (sperm and egg cells) which fuse at fertilisation to produce a diploid zygote

Genetic code - the sequence of bases in DNA and mRNA which determines the amino acid sequence of proteins

Genetic diversity - the number of different alleles of genes in a population

Genome - the complete set of genes in a cell

Genome sequencing - finding out the whole DNA base sequence of an organism

Genus - the taxon between family and species

- Habitat** - a place where an organism lives
- Haploid** - a cell which has one copy of each chromosome, half the normal number of chromosomes
- Hierarchy** - smaller groups are placed into larger groups, with no overlap between groups
- Homologous chromosomes** - pairs of chromosomes which are the same size and have the same genes at the same loci
- Immunology** - the study of the immune system (antibodies can be used to investigate evolutionary relationships)
- Independent segregation** - random separation of maternal and paternal chromosomes during the first division in meiosis, creates genetic variation
- Index of diversity** - describes the relationship between species richness and the number of individuals in each species
- Inhibition zone** - a clear area around a spot of antibiotic (or other substance) where bacterial growth has been inhibited
- Introns** - regions of genes which do not code for amino acid sequences, only found in eukaryotic DNA
- Kingdom** - the taxon between domain and phylum
- Locus** - the fixed position on a chromosome occupied by a gene
- Meiosis** - method of cell division which produces genetically different gametes
- Mutagenic agents** - things that increase the rate of gene mutation e.g. UV radiation
- Mutations** - changes to the base sequence of DNA, can be spontaneous and random
- Natural selection** - changes in allele frequency over time which result in species that are better adapted to their environment
- Non-coding multiple repeats** - DNA sequences that repeat many times and do not code for amino acids
- Non-overlapping** - describes how triplets do not share bases in the genetic code
- Order** - the taxon between class and family
- Parent cell** - divides to produce daughter cells
- Phylogeny** - a classification system which arranges species into groups based on their evolutionary origins and relationships
- Phylum** - the taxon between kingdom and class
- Physiological adaptations** - metabolic processes in an organism that increase the chance of survival
- Population** - a group of organisms of one species in a habitat
- Pre-mRNA** - produced in transcription in eukaryotes, contains introns and exons
- Proteome** - the full range of proteins that a cell is able to produce
- Random fertilisation** - zygotes are formed by fusion of a random egg and sperm cell, a source of genetic variation
- Random sampling** - used to prevent bias and aims to accurately represent the whole population
- RNA polymerase** - joins RNA nucleotides with phosphodiester bonds in transcription
- Species** - a group of similar organisms that are able to reproduce to produce fertile offspring, the smallest taxon
- Species richness** - the number of different species in a community

Splicing - removal of introns from pre-mRNA to form mRNA consisting of only exons

Stabilising selection - individuals with a characteristic around the mean level are more likely to survive and reproduce, resulting in a narrower range of characteristics in the offspring

Standard deviation - indicates how much variation there is in the data from one sample, a measure of spread about the mean

Start codon - a specific codon (or triplet) which signals transcription or translation to start

Stop codon - a specific codon (or triplet) which signals transcription or translation to stop

Taxon - a group in a taxonomic hierarchy e.g. phylum

Transcription - the production of mRNA (pre-mRNA in eukaryotes) from DNA

Translation - production of polypeptides from the sequence of codons carried by mRNA

Triplet - a sequence of three DNA bases coding for a specific amino acid

Universal - in the genetic code, the same base triplets code for the same amino acids in all living organisms

Zygote - a diploid cell produced by fusion of gametes at fertilisation, will divide to form an organism