

CB3a – Meiosis

Word	Pronunciation	Meaning
chromosome	<i>krow-mO-sOwm</i>	A structure found in the nuclei of cells. Each chromosome contains one enormously long DNA molecule packed up with proteins.
daughter cell	<i>dor-ter sell</i>	A cell produced by another cell that has divided.
diploid	<i>dipp-loyd</i>	A cell or nucleus that has two sets of chromosomes. In humans, almost all cells except the sperm and egg cells are diploid.
DNA		Deoxyribonucleic acid. A polymer made of sugar and phosphate groups joined to bases. One molecule of DNA is found in each chromosome.
egg cell		The female gamete in humans.
fertilisation	<i>fert-ill-l-zay-shun</i>	Fusing of a male gamete with a female gamete.
gamete	<i>gam-meet</i>	A haploid cell used for sexual reproduction.
gene	<i>jeen</i>	Section of the long strand of DNA found in a chromosome, which often contains instructions for a protein.
genome	<i>jee-nOhm</i>	All the DNA in an organism. Each body cell contains a copy of the genome.
haploid	<i>happ-loyd</i>	A cell or nucleus that has one set of chromosomes. Gametes are haploid.
meiosis	<i>my-O-sis</i>	A form of cell division in which one parent cell produces four haploid daughter cells.
mitosis	<i>my-tO-sis</i>	A form of cell division in which one parent cell produces two diploid daughter cells.
polymer	<i>poll-ee-mer</i>	A molecule made out of a chain of repeating similar units (called monomers).
replicate		When DNA replicates it makes a copy of itself.
sperm cell		The male gamete in humans.
zygote	<i>zY-goat</i>	Another term for 'fertilised egg cell'.

CB3b – DNA

Word	Pronunciation	Meaning
adenine	<i>add-en-een</i>	One of four bases found in DNA. Often written as A.
base (in DNA)		Four substances that help make up DNA, often shown by the letters A, C, G and T. Pairs of bases form 'links' between two 'spines' formed of phosphate groups and a type of sugar.
chromosome	<i>krow-mO-sOwm</i>	A structure found in the nuclei of cells. Each chromosome contains one enormously long DNA molecule packed up with proteins.

Word	Pronunciation	Meaning
complementary base pair		Two DNA bases that fit into each other and link by hydrogen bonds. There are two types of complementary base pair: A linking with T, and C linking with G.
cytosine	<i>cY-tO-seen</i>	One of four bases found in DNA. Often written as C.
DNA		Deoxyribonucleic acid. A polymer made of sugar and phosphate groups joined to bases. One molecule of DNA is found in each chromosome.
double helix		Two helices joined together.
gene	<i>jeen</i>	Section of the long strand of DNA found in a chromosome, which often contains instructions for a protein.
guanine	<i>gua-noon</i>	One of four bases found in DNA. Often written as G.
hydrogen bond		Weak force of attraction caused by differences in the electrical charge on different parts of different molecules.
thymine	<i>thY-meen</i>	One of four bases found in DNA. Often written as T.

CB3c – Alleles

Word	Pronunciation	Meaning
allele	<i>a-leel</i>	Most genes come in different versions, called alleles. So a gene for eye colour may have a version (allele) that can cause dark eyes and an allele that can cause pale eyes.
dominant		Allele that will always affect the phenotype (as opposed to a recessive allele, whose effect will not be seen if a dominant allele is present).
genetic diagram		Diagram showing how the alleles in two parents may form different combinations in the offspring when the parents reproduce.
genetic variation		Also called inherited variation. Differences between organisms passed on to offspring by their parents in reproduction.
genotype	<i>jee-nO-tYpe</i>	The alleles for a certain characteristic that are found in an organism. Written in a shorthand using letters to represent the alleles (with the dominant allele having a capital and being written first).
heterozygous		When both the alleles for a gene are different in an organism.
homozygous		When both the alleles for a gene are the same in an organism.
monohybrid inheritance	<i>mon-O-hy-brid in-herr-it- anse</i>	The study of how the alleles of just one gene are passed from parents to offspring.
phenotype	<i>fee-nO-tYpe</i>	The characteristics that a certain set of alleles produce.

Word	Pronunciation	Meaning
ratio	<i>ray-shee-O</i>	A relationship between two quantities, usually showing the number of times one value is bigger than the other. For example, if there are six red buttons and two blue buttons, the ratio of red to blue is 3 to 1, also written 3:1.
recessive	<i>res-ess-iv</i>	Allele that will only affect the phenotype if the other allele is also recessive. It has no effect if the other allele is dominant.
zygote	<i>zY-goat</i>	Another term for 'fertilised egg cell'.

CB3d – Inheritance

Word	Pronunciation	Meaning
family pedigree chart		A chart showing the phenotypes and sexes of several generations of the same family, to track how characteristics have been inherited.
probability		The likelihood of an event happening. Can be shown as a fraction from 0 to 1, a decimal from 0 to 1 or as a percentage from 0% to 100%.
Punnett square		Diagram used to predict the different characteristics in the offspring of two organisms with known combinations of alleles. You can use the square to work out the probability (how likely it is) that offspring will inherit a certain feature.
sex chromosome	<i>krow-mO-sOwm</i>	Chromosome that determines the sex of an organism. In humans, males have one X sex chromosome and one Y sex chromosome, while females have two Xs.

CB3e – Gene mutation

Word	Pronunciation	Meaning
Human Genome Project	<i>jee-nOhm</i>	The project that mapped the base pairs in one human genome.
mutation	<i>mew-tay-shun</i>	A change to a gene, caused by a mistake in copying the DNA base pairs during cell division or by the effects of radiation or certain chemicals.
variation	<i>vair-ee-ay-shun</i>	Differences in the characteristics of organisms.

CB3f – Variation

Word	Pronunciation	Meaning
acquired characteristic	<i>ak-wired</i>	A characteristic that can change during life, due to a change in the environment. (See also environmental variation.)
continuous variation		Continuous data can take any value between two limits. Examples include length, mass, time. Continuous variation is when differences in a characteristic are continuous.

Word	Pronunciation	Meaning
discontinuous variation		Data values that can only have one of a set number of options are discontinuous. Examples include shoe sizes and blood groups. Discontinuous variation is when differences in a characteristic are discontinuous.
environmental variation		Differences between organisms caused by environmental factors, such as amount of heat, light, damage. These differences are called acquired characteristics.
genetic variation		Differences between organisms caused by differences in the alleles they inherit from their parents, or differences in genes caused by mutation.
mean		An average calculated by adding up the values of a set of measurements and dividing by the number of measurements in the set.
median		The middle value in a data set.
mode		The most common value in a data set.
normal distribution		When many individuals have a middle value for a feature, with fewer individuals having greater or lesser values. This sort of data forms a bell shape on charts and graphs.
range		The difference between the highest and lowest values in a set of data (usually ignoring any outliers or anomalous results).