













CB3 Genetics







CB3a Meiosis

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 7 th	Recall that gametes are produced by meiosis.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe what happens in meiosis. [without details of the stages]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain why haploid gametes are needed for sexual reproduction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall what an organism's genome is.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe where genes are found.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Recall the function of genes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






CB3b DNA

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 5 th	Recall where DNA is found in a eukaryotic cell.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Name the bases in DNA.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Recall the pairing of bases in DNA.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe how DNA strands are held together.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Describe the overall structure of DNA.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	<i>Describe how DNA can be extracted from fruit.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>







CB3c Alleles

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 6 th	Describe the difference between a gene and an allele.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 8 th	Explain the effects of alleles on inherited characteristics.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Describe the relationship between a genotype and a phenotype.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 7 th	Identify homozygous and heterozygous genotypes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Use genetic diagrams to work out possible combinations of alleles in the offspring of parents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Explain why the effects of some alleles in an organism's genotype are not seen in its phenotype.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






CB3d Inheritance

Step	Learning outcome	Had a look	Nearly there	Nailed it!
 8 th	Use Punnett squares to work out possible combinations of alleles in the offspring of parents.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Interpret family pedigree charts to work out possible inherited genotypes and phenotypes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 6 th	Describe how sex is determined in humans.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Calculate ratios of phenotypes (controlled by alleles of a single gene) when organisms are crossed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 9 th	Calculate probabilities of certain phenotypes occurring when organisms are crossed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB3e Gene mutation

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Give examples of characteristics controlled by multiple genes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Define the term mutation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe some potential applications of mapping human genomes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain how a mutation can cause variation (limited to changes in the protein formed, which can affect processes in which that protein is needed).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Give examples of mutations in human genes that affect the phenotype, and examples of those that have little or no obvious effect.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Explain why many mutations have no effect on the phenotype.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CB3f Variation

Step	Learning outcome	Had a look	Nearly there	Nailed it!
	Distinguish between genetic variation and environmental variation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Distinguish between continuous and discontinuous variation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the causes of genetic variation (mutation and sexual reproduction).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Describe the causes of environmental variation (differences in the environment, acquired characteristics).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Analyse the contribution of genes and environment to the variation in a characteristic.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>