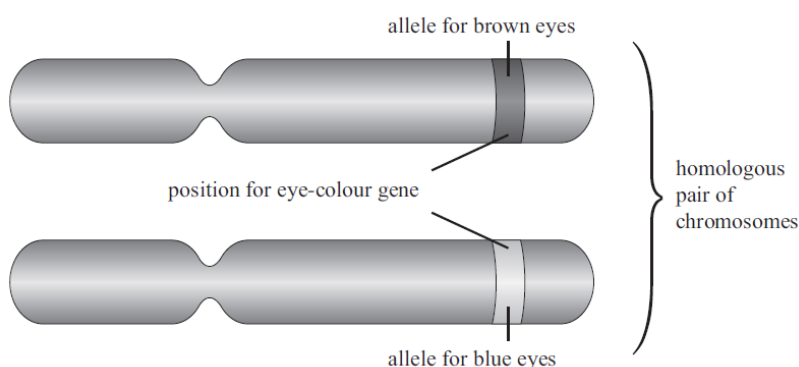


Writing Excellence answers to **DNA and Genes** questions

DNA and Genes QUESTION

Question: Use the diagram below to help you explain the relationship between chromosomes, genes, alleles, phenotype, genotype, and the molecule DNA.



ANSWER

1. explain link between chromosomes and DNA	Chromosomes are made up of DNA.
2. describe the physical structure of DNA	DNA is a large molecule that is coiled into a double helix (twisted ladder structure). It is responsible for determining the phenotype of an organism. Along this molecule are bases.
3. Explain the pairing rule of DNA	These bases pair up; A always pairs with T, and G with C.
4. link the base sequence to trait and gene (use example)	A sequence of bases which codes for a particular trait (eg, eye colour) is called a gene.
5. Give the definition for an allele (use example)	The different versions of each gene are called alleles, and these show the different variations of each characteristic, eg brown / blue eyes.
6. link pair of chromosomes to pair of alleles	Because chromosomes come in pairs for each trait, there will be two possible alleles
7. link alleles to base sequence	These different versions of genes (alleles) occur as the DNA base sequence is different.
8. give the definition of a genotype	This combination of alleles for each trait is called the genotype; this can be any combination of two of the available alleles.
9. link genotype to phenotype	The genotype determines the phenotype (the physical appearance) of the organism.
10. give definition of dominant alleles	Whichever alleles are present may be expressed. Dominant alleles (B) will be expressed over recessive alleles (b).
11. give definition of recessive alleles	Two recessive alleles are required for the recessive phenotype to be expressed

NOTE: The white column is how your answer would appear on your test paper so make sure you **write out complete sentences**. The grey area is just to help you structure your answer and would not appear in the question.