**Science 1.9 AS 90948** Demonstrate understanding of biological ideas relating to genetic variation



Writing Excellence answers to **Genotype and Phenotype** questions

|  |  |
| --- | --- |
| **DNA and Genes QUESTION** | |
| **Question:** In rock pocket mice, dark fur colour (D) is dominant    to light fur colour (d). Each mouse has two alleles for fur colour.  Explain how they inherit these two alleles, and explain how the two alleles  interact to produce different phenotypes. In your answer you should:  •define phenotype and genotype  •explain how the alleles are inherited from the parents  •state the three possible fur colour genotypes for rock pocket mice. | |
| **ANSWER** | |
| 1. define **genotype** |  |
| 2. define **phenotype** |  |
| 3. Explain where an individual gets a copy of each **gene** |  |
| 4. link **fertilisation** to the **gametes** involved and parents. |  |
| 5. give the definition of **dominant** alleles |  |
| 6. give the definition of **recessive** alleles |  |
| 7. define **homozygous dominant** **genotype** (use example above) |  |
| 8. define **heterozygous genotype** (use example above) |  |
| 9. define **homozygous recessive genotype** (use example above) |  |
| 10. link homozygous recessive **genotype to phenotype** |  |
| 11. draw a **Punnett square** showing how 2 dark coloured mice could produce both light(dd) and dark mice(DD or Dd) |  |

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.