

Year 9 – Genes – Inheritance

Name of unit	
Expected Outcomes • Students will understand that inheritance involves the passing of genetic information from parents to offspring. • Students will describe the structure and function of DNA and genes. • Students will use genetic diagrams (Punnett squares) to predict inheritance of simple traits. • Students will distinguish between dominant and recessive alleles. • Students will explore genetic variation and its importance in populations.	
Developmental Focus Opportunities • Data handling: Using and interpreting Punnett squares and genetic probabilities. • Scientific communication: Explaining inheritance using appropriate vocabulary and diagrams. • Ethical thinking: Discussing issues around genetic testing, selective breeding, and cloning. • Problem-solving: Predicting inheritance patterns from different allele combinations.	
Key Learning Points	Powerful Knowledge
• Genes are units of inheritance found on chromosomes in DNA. • Offspring inherit one allele for each gene from each parent. • Dominant alleles are expressed over recessive ones. • Variation arises from genetic combinations and mutations.	• Understanding the molecular basis of inheritance and its impact on traits. • Recognising how genetics informs medicine, agriculture, and forensics. • Appreciating the importance of genetic diversity in healthy populations. • Laying the foundation for more complex GCSE genetics topics (e.g. inheritance of disorders).
Subject-Specific Vocabulary	Reading Opportunities
• Inheritance • Gene • Chromosome • DNA • Allele • Dominant	• Articles on genetic diseases and screening. • Profiles of scientists such as Gregor Mendel or Rosalind Franklin. • Ethical case studies on genetic modification and cloning.

Year 9 – Genes – Inheritance

• Recessive • Punnett square • Genotype • Phenotype	
Possible Misconceptions	Cross-Curricular Links
• Believing dominant traits are always more common or “better.” • Thinking both alleles are always expressed equally. • Assuming traits are inherited from only one parent. • Confusing genotype with phenotype.	• Maths: Calculating probabilities and interpreting genetic ratios. • PSHE: Ethical issues around genetics, consent, and privacy. • ICT: Simulations of inheritance patterns and genome mapping tools.