

Heredity and Mendel's Laws

Chapter 8: Heredity and Evolution · Topic 1

Key Concept

Mendel's Law of Segregation states that the two alleles for a trait separate during gamete formation, so each gamete carries only one allele, which then randomly combines with a gamete from the other parent during fertilisation. His Law of Independent Assortment states that alleles for different traits (like seed colour and seed shape) are inherited independently of one another. These laws, discovered through careful cross-breeding experiments, laid the foundation for the modern science of genetics.

Quick Revision Notes

- Heredity: passing of traits from parents to offspring through genes on chromosomes.
- Mendel's Law of Dominance: a dominant allele masks a recessive allele's expression.
- Law of Segregation: allele pairs separate during gamete formation.
- Law of Independent Assortment: alleles for different traits are inherited independently.

Practice Questions

- 1 State Mendel's law of dominance.
- 2 Explain the difference between the Law of Segregation and the Law of Independent Assortment.
- 3 Why are Mendel's pea plant experiments considered foundational to genetics?