

Genetics - Some Basic Fundamentals

Chapter 2: Genetics - Some Basic Fundamentals · Topic 1

Key Concept

Mendel's Law of Dominance states that when two contrasting alleles are present, one (dominant) masks the expression of the other (recessive).

Mendel's Law of Segregation states that allele pairs separate during gamete formation, so each gamete carries only one allele for each trait.

A genotype is the genetic makeup of an organism (like Tt), while phenotype is the physical expression of that genotype (like tall).

Punnett squares are used to predict the probability of offspring genotypes and phenotypes from a genetic cross between parents.

Quick Revision Notes

- Law of Dominance: dominant allele masks recessive.
- Law of Segregation: allele pairs separate in gametes.
- Each gamete carries one allele per trait.
- Genotype: genetic makeup (e.g., Tt).
- Phenotype: physical expression (e.g., tall).
- Punnett squares predict offspring outcomes.
- They show genotype and phenotype probabilities.
- These are foundational genetics concepts.

Practice Questions

- 1 Draw a Punnett square for a Tt x Tt cross.
- 2 Explain the Law of Dominance with an example.
- 3 Explain the Law of Segregation with an example.
- 4 Distinguish between genotype and phenotype with examples.
- 5 Research Mendel's pea plant experiments.
- 6 Explain basic genetics concepts in your own words.