

This is the **Foundation Combined** version — Higher Tier and Separate-only content removed.

Characteristics are inherited from parents through the passing on of alleles in gametes.

- Punnett squares predict offspring genotype/phenotype ratios
- Cystic fibrosis: recessive (ff) — thick mucus in lungs. Both parents must carry allele (Ff = carrier)
- Polydactyly: dominant (D) — extra digits. One copy sufficient
- Sex: females XX, males XY. 50:50 probability each pregnancy

Key Terms

Carrier	Heterozygous individual with recessive allele but no symptoms
Cystic fibrosis	Recessive disorder — thick mucus — both alleles must be faulty
Polydactyly	Dominant disorder — extra digits — one allele sufficient

■ **Exam Tip:** Cystic fibrosis: RECESSIVE (need ff). Polydactyly: DOMINANT (need only D). This is the most commonly confused pair in GCSE genetics.