

Punnett Squares

9th Grade

Predicting offspring ratios from two parents' genes.



A Punnett square shows every possible combination of alleles from two parents, and how likely each is.

MONOHYBRID CROSS

$Aa \times Aa$

RATIO

3 : 1

- Alleles are versions of a gene; you inherit one from each parent.
- Dominant alleles show even with one copy; recessive need two.
- Homozygous means two identical alleles; heterozygous means two different.
- Genotype is the alleles; phenotype is what you can see.
- $Aa \times Aa$ gives a 3 : 1 phenotype ratio and a 1 : 2 : 1 genotype ratio.

LOOK FOR IT

Two heterozygous brown-eyed parents can have a blue-eyed child — a 1 in 4 chance.

A Punnett square gives probabilities, not guarantees. Four children can all be the same.