

Part A: Plain ol' monohybrid crosses

Monohybrid crosses are when traits are either dominant or recessive and you are only concerned with one trait at a time.

Problem: In smurfs, the allele for blue skin (B) is dominant over the allele for white skin (b).

Example: Cross a homozygous blue skin smurf with a heterozygous blue skin smurf.

Step 1: Write the cross.

Step 2: Complete the Punnett square.

Step 3: Summarize the genotypes and phenotypes of the possible offspring.

Practice 1: Cross a white smurf with a homozygous blue smurf.

Practice 2: Cross 2 heterozygous blue smurfs.

Part B: Incomplete Dominance

Incomplete dominance is when one allele is not dominant over another. Instead, when the 2 alleles mix, a **blending** of the 2 alleles results.

Problem: In snapdragons, a red flower crossed with a white flower produces pink offspring.

Example: Cross a red flower with a pink flower.

Step 1: Write the cross.

Step 2: Complete the Punnett Square.

Step 3: Summarize the genotypes and phenotypes of the possible offspring.

Practice 1: Cross 2 pink flowers.

Practice 2: Cross a white flower and a pink flower.

Part C: Codominance

Codominance is when one allele is not dominant over another. Instead, when the 2 alleles are crossed, both alleles are expressed and the offspring is a **mixture** of the 2 traits.

Problem: When a brown cow is crossed with a white cow, the offspring are roan (brown and white).

Example: Cross a brown cow and a roan cow.

Step 1: Write the cross.

Step 2: Complete the Punnett Square.