

Genetics Notes

Did anyone ever say that you resemble your mother or father? If they did, it's because you have inherited some of their characteristics.

Inherited characteristics that can be observed; looks, functions or certain behaviours are called **phenotypes**. The genes that code for a characteristic are called **genotypes** and are not directly observable. Genotypes must normally be inferred from the phenotypes of family members. A child has blue eyes. Blue eyes are her phenotype and the genes inherited from her parents that are responsible for her blue eyes are called the genotype.

Many characteristic you have come from your parents, yet you are not an identical copy – more of a blending of your parents' traits. What determines the characteristics that you inherit? Scientists have found that there are two kinds of genes. One type of gene is called **recessive** and the other type is called **dominant**. The word dominant here does not have anything to do with personalities. Brown eye colour is a dominant gene and blue eye colour is a recessive gene. If you inherited a blue eye colour gene from one parent and a brown eye colour gene from the other parent, you would have brown eyes. The rule for inherited traits follows:

Whenever a recessive trait combines with a dominant trait, the dominant trait always shows as the phenotype. A recessive trait will only show in the offspring when two recessive genes are present.

Eye colour is often used as an example to talk about easily observable traits in humans, but in fact eye colour is much more complicated than the above rule suggests. Eye colour is actually controlled by a number of genes and that is why there are colours other than just brown or blue.

A blue-eyed daughter will be born only when both parents give her a recessive blue-eyed gene.