How You Inherit Traits From Your Parents

KS4 BIOLOGY Ages 11-14 ⏰ 3 min read

What Are Genes?

Every person is made up of trillions of tiny cells, and inside each cell is a set of instructions called **DNA**. This DNA is divided into smaller chunks called **genes**, and genes control things like your eye colour, hair colour, height, and even whether you have dimples. You inherit **half your genes from your mum and half from your dad**, which is why you might have your dad's nose and your mum's smile.

Think of it like a recipe: you get some ingredients from one parent and some from the other, and together they create something unique—you!

How Do We Predict Inherited Traits?

Scientists use something called **Punnett squares** to predict what traits a baby might inherit. This is a grid that shows all the possible combinations of genes from both parents. For example, if one parent has a gene for brown eyes and the other has a gene for blue eyes, the Punnett square helps us work out the chances of the baby having brown or blue eyes.

Some traits are **dominant**, meaning they're more likely to show up. Others are **recessive**, which means they only appear if you inherit the same gene from both parents. Brown eyes are usually dominant over blue eyes, which is why most babies are born with brown eyes.

Think of it like a pair of dice: some results (dominant traits) come up more often than others (recessive traits), and you can work out the odds beforehand.

What Else Can We Predict?

We can use genetics to predict things like height, hair texture, and whether you might have certain health conditions. However, it's not always straightforward—many traits are affected by both genes **and** your environment. For example, you might inherit genes that make you tall, but if you don't eat enough healthy food growing up, you might not grow as tall as your genes suggested you could.

Scientists are getting better at predicting inherited traits all the time, thanks to new technology and our growing understanding of **DNA**. This helps doctors and families prepare for what to expect and understand why you look the way you do!