



Genetic Traits Activity

The Children's Medical Research Institute conducts research into genetic diseases that affect both children and adults. Jeans for Genes is our major fundraising event.

Why does Auntie Beryl say, "Oooh, you look just like Great Uncle Bob!?" How can that be?

It is because you inherited your **genes** from your Mum and Dad. And they got their genes from their Mum and Dad – and so did their brothers and sisters (your aunts and uncles). Our genes act like an instruction manual for our body, they control how we look and how our body works. (See 'Gene Genius' fact sheet for more information on basic genetics).

We all have the same genes, but we don't all have the same alleles of the genes. We all inherit one allele from our mother and one from our father. The gene for eye colour has two alleles: blue and brown, the brown allele is dominant, so hides the blue colour. In a family, one sibling may have two blue alleles for the eye colour gene, resulting in blue eyes. The other sibling may have one blue and one brown allele for the eye colour gene, resulting in brown eyes as brown is the dominant allele.

Everyone gets their own special mixture of genes, made up of different genes from their older relatives. So you share lots of your genes with your relatives and that is why you might look a bit like your brothers and sisters, aunts and uncles, grandma and granddad, but no one has exactly the same mixture of genes as you. You are *one in a billion!*

To do this activity, ask students to find a partner and look at their partner to identify which traits they have. Students should then cut out the little triangle that corresponds to their trait. At the end of the activity each student will have their own "Identity Card" which can be compared to the ID cards of the other students by putting them together and holding them up to the light. Where the light shines through indicates a trait that the people have in common.

Your students will find that they have several traits in common with other students, but when you place multiple cards together it is less likely there will be similarities. This indicates that every student (and teacher) is an individual and that their genes are one characteristic that make them different.

Follow up exercise:

- Students can take home extra cards for family members to cut out and compare
- Students make a family tree of their relatives, indicating whether they have blue or brown eyes, or straight or curly hair. Ask the students to select one trait to document on their family tree. Students will see a pattern of inheritance and may think about what traits they may pass on to their children.