

## Clip #4 Transcript: Defining Technical Terms

There are different layers in the leaf and the top layer is called the **cuticle**. And because there are cells in the leaf to make photosynthesis, from the surface to these cells, it's called cuticle. And cuticle is largely composed of **cutin** and cuticular waxes, and the surface wax on the leaf on the top is called **epicuticular waxes**, and also there is another part just below this part called **intercuticular waxes**. After this layer, the cell layer are starting and also in the bottom there is another cuticle layer like on the top. But on the top it's more than the bottom part because on the top it's really important to protect the leaf or to manage the water loss.

The genome is the entire set of genetic instructions found in a cell. Like humans, we have 23 pairs of **chromosomes** and all together they are our genome. And the gene is a specific part in those chromosomes which is responsible for a particular function. For example, like eye colour, hair colour, or hair type, these are the genes which determine our functions, our properties. And genetic differences are the differences in our genomes—it also can also be seen easily on our **phenotypes**. We can also see the phenotypic differences [in plants], so we can say, 'ok these two are different in their genetics/genotypes'.

And for the wax, when they look at a leaf, they can see that the top part is bright and the bottom part is less bright. The top layer is bright because it has a cuticle layer, it has waxes on it; it's bright because it has lots of functions on the leaf these cuticular waxes. For example, it's bright because it reflects the UV light, because UV can damage the leaf. And this layer is **hydrophobic** which means it's water repellent, so it can control the water loss in the leaf or it can control the water on the surface. For example, the leaf use the water on the surface to clean the leaf, because it's hydrophobic water cannot go in the leaf; you can see after rain the droplets on the leaves, these are because of its hydrophobic layer because of cuticular wax. And the leaf is using this function to clean the leaf like to 'take a shower'.

A gene can affect different traits—we can't say that one gene affects just one trait; it can affect lots of traits. Also it can affect these traits by contacting with other genes also. It's not just maybe one gene, it's maybe several genes to make this property.

