

## *Genotypes and Phenotypes*

A **genotype** is a way to list the genes an organism has, which indicates the actual combination of alleles.

You will be doing an activity that illustrates what can happen when the genes from two parents combine to produce new combinations of genes in their offspring. An example of a gene that can be passed from a human parent to its offspring is the tongue rolling gene. If someone possesses both the dominant and recessive alleles for tongue rolling, we would write his or her genotype as “Rr”. The capital R shows that there is one dominant allele for tongue rolling, and the lower case r represents the other, recessive allele.

Another person might have two recessive alleles for tongue rolling, so his or her genotype would be rr. What would be the genotype of a person with two dominant tongue rolling alleles? \_\_\_\_\_

Using the letter L to indicate the dominant allele for long eye lashes, and/or “l” (a lower case letter L, not the number one) to indicate the recessive allele for short eye lashes, what is the genotype of a person with two dominant alleles for eye lash length? \_\_\_\_\_

Using the letters D and/or d, what is the genotype of a person with one dominant and one recessive allele for detached earlobes? \_\_\_\_\_

Using the letter B for the allele for brown eyes, and/or b for the allele for blue eyes, what is the genotype of a person with two recessive eye color alleles? \_\_\_\_\_

A **phenotype** is a description of what an organism looks like based on its genotype.

A person with the Rr genotype for tongue rolling would be able to roll his or her tongue, because he or she has the dominant allele that allows tongue rolling. So “tongue rolling” is his or her phenotype.

A person with the genotype RR would also show the tongue rolling phenotype. What is the phenotype of a person with the genotype rr? \_\_\_\_\_

The phenotype of a person with two recessive alleles for eye lash length is “short eye lashes.” What is the phenotype of a person with two dominant alleles for eye lash length? \_\_\_\_\_

What is the phenotype of a person with one dominant and one recessive allele for detached ear lobes? \_\_\_\_\_

What is the phenotype of a person with two recessive alleles for eye color?  
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