

Heredity: Virtual Lab

A trait is a characteristic, such as color or size, that is inherited by an offspring from its parents. The genes that control a trait come in pairs, one gene from each parent. We represent these gene pairs by writing a combination of two capital or lowercase letters. For example, if one parent contributes a gene for brown eye (B), and the other parent contributes a gene for blue eyes (b), then we write the offspring's eye color trait as Bb.

B (brown eye gene) + **b** (blue eye gene) = **Bb**

This combination of the two genes that determine a trait is called a genotype.

Each letter in a gene pair stands for one form of the trait. The forms of a trait are called **alleles**. In this example, the alleles are blue eye color and brown eye color.

There are two types of alleles: **dominant** and **recessive**. A dominant allele is written as a capital letter, and a recessive allele is written as a lowercase letter. If a gene pair contains a dominant allele, then the offspring will show this dominant trait. Recessive alleles can only show up in offspring when there are no dominant alleles present to suppress them. The trait that is “seen” is called a **phenotype**.

In this Virtual Lab, you will use a Punnett square to find possible gene combinations and create a fictitious animal.

Procedure:

- Go to [Heredity: Virtual Lab](#).
- Click on the **video** link.
- After watching the video, you will have a chance to choose the types of features and appendages your creature will have by clicking on the tabs.
- Click on the button below “perform the genetic cross” for each feature.
- This will set up the Punnett square showing the four possible genotypes.
- Click and drag the possible phenotypes into the boxes of the Punnett square.
- After you have filled all four boxes of the Punnett square, click the **Check** button.
- When the Punnett square is correctly filled, select one of the four boxes to apply that trait to the mystery animal.
- Record all of this information on your paper.
- Repeat the procedure for ears, nose, mouth, fur and feet and fill out their Punnett squares.
- Take a screenshot of your fictitious animal (Command + Shift + 4) and save it to your desktop. Your animal must match your Punnett squares from this lab.

(n.d.). Retrieved from

http://www.glencoe.com/sites/common_assets/science/virtual_labs/E09/E09.html