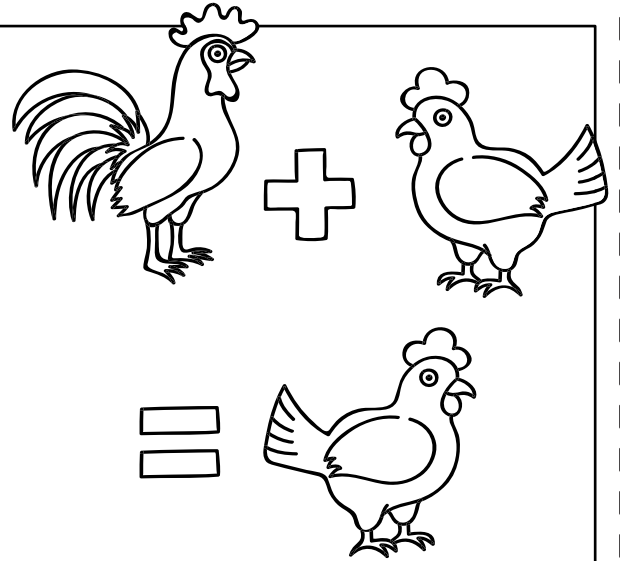


# Non-Mendelian

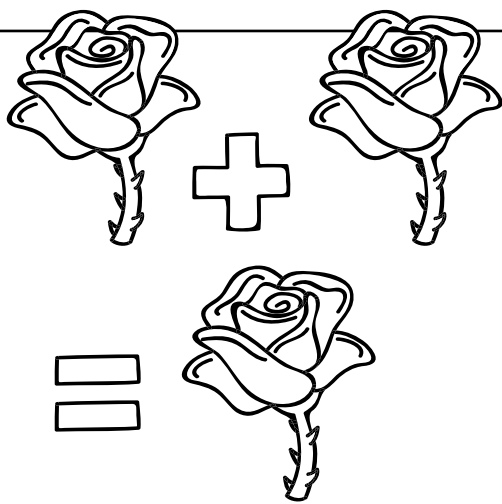
# Inheritance

## Codominance

**What is it?** Codominance is when two \_\_\_\_\_ are present and they are both simultaneously \_\_\_\_\_, i.e. neither one fully determines the \_\_\_\_\_ of the organism.



**Example:** In some varieties of \_\_\_\_\_, the allele for \_\_\_\_\_ feathers is \_\_\_\_\_ with the allele for white feathers. If a chicken has both \_\_\_\_\_, it displays both black and white feathers, which is also known as \_\_\_\_\_.



## Incomplete dominance

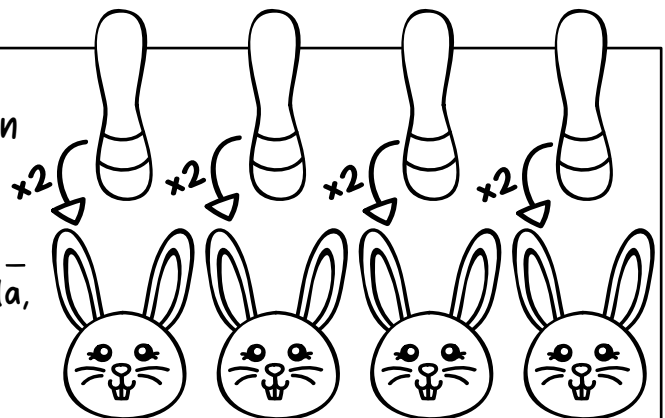
**What is it?** Incomplete dominance is when an organism is \_\_\_\_\_ for a trait and instead of displaying a homozygous \_\_\_\_\_, it displays an \_\_\_\_\_ phenotype that is somewhere in-between the two \_\_\_\_\_ phenotypes.

**Example:** In rose plants, a \_\_\_\_\_ between a rose with white flowers and a rose with \_\_\_\_\_ flowers will produce \_\_\_\_\_ with \_\_\_\_\_ flowers.

## Multiple alleles

**What is it?** This is when there are \_\_\_\_\_ than \_\_\_\_\_ alleles for a \_\_\_\_\_ in a population.

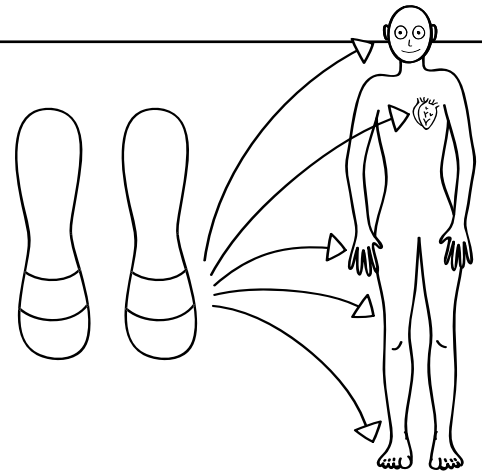
**Example:** The gene for coat color in \_\_\_\_\_ comes in four \_\_\_\_\_: black/brown, chinchilla, Himalayan and albino. In humans, \_\_\_\_\_ type has \_\_\_\_\_ alleles: \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.



# Pleiotropy

**What is it?** Pleiotropy is when one \_\_\_\_\_ affects multiple \_\_\_\_\_.

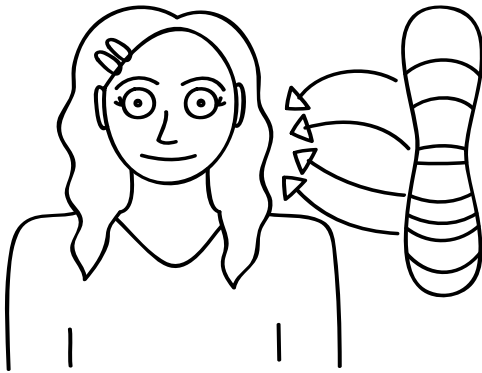
**Example:** Marfan syndrome is caused by a \_\_\_\_\_ gene. It has quite a few effects on the traits of the \_\_\_\_\_: unusually tall \_\_\_\_\_, thin \_\_\_\_\_ and toes, long \_\_\_\_\_, lens dislocation, and \_\_\_\_\_ problems.



# Polygenic inheritance

**What is it?** Polygenic inheritance is when a \_\_\_\_\_ is controlled by the \_\_\_\_\_ of \_\_\_\_\_ genes.

**Example:** Height in humans is controlled by around 400 pairs of \_\_\_\_\_! The interaction of so many genes can result in wide \_\_\_\_\_ of the characteristic within a \_\_\_\_\_. Hair \_\_\_\_\_ is another example of polygenic inheritance. In fact, most human traits are believed to be \_\_\_\_\_.

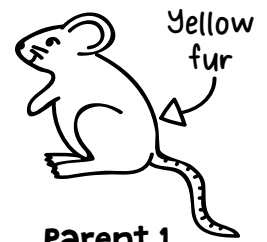


# Lethal alleles

**What is it?** A lethal allele is an allele that results in the \_\_\_\_\_ of an individual if it carries it. This can occur during early \_\_\_\_\_ or at some point after birth. They can be \_\_\_\_\_ or \_\_\_\_\_.

**Example:** In mice, the allele for \_\_\_\_\_ coat color is dominant over the brown coat allele. It is also a \_\_\_\_\_ allele. Mice that are \_\_\_\_\_ for this allele \_\_\_\_\_ early in their development. If the mouse is \_\_\_\_\_, it lives and displays the yellow coat color, but \_\_\_\_\_ the lethal allele.

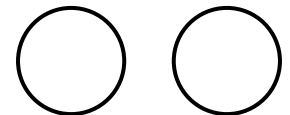
**Complete the Punnett Square using the letter "Y" to represent the alleles.**



Parent 1

Genotype: \_\_\_\_

Shade each box:  
Yellow fur = yellow,  
Brown fur = brown,  
& death during development = gray



Parent 2  
Genotype: \_\_\_\_



|  |  |  |
|--|--|--|
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