

Unit 7: Genetics – Incomplete Dominance, Codominance, and Sex-Linked Traits

When the rules are broken:

1. ***Incomplete dominance:*** the heterozygous phenotype will be intermediate between the dominant and recessive allele.
 - o For example, a purebred red and a purebred white carnation are crossed, the results are all pink flowers (R'R)

RR x R'R'

R=Red
R'=White

- o If two pink flowers are crossed, the results are 1 red: 2 pink:1 white flowers.

R'R x R'R

2. ***Codominance:*** the appearance of both phenotypes at the same time.
 - o For example, in cattle when a homozygous bull and a homozygous cow mate (one being red and the other white), the calves will be roan-colored, with a mix of red and white hairs.
3. ***Sex-linked traits***
 - o Humans have 22 matching pairs of regular chromosomes and a 23rd pair of sex chromosomes. These are the X and Y chromosomes that determine the sex of a child.
 - o Some traits are sex-linked. For example, in fruit flies, eye color is on the X chromosome only.
 - o Alleles for sex-linked traits are written as superscripts: X^rY, X^RX^R

X^rY x X^RX^R

R = Red
r = White