Punnett Squares Practice Packet



Most genetic traits have a stronger, dominant allele and a weaker, recessive allele. In an individual with a heterozygous genotype, the <u>dominant allele</u> shows up in the offspring and the recessive allele gets covered up and doesn't show; we call this <u>complete dominance</u>.

However, some alleles don't completely dominate others. In fact, some heterozygous genotypes allow both alleles to <u>blend</u>. This is called <u>incomplete dominance</u>.

Other heterozygous genotypes allow both alleles to be <u>expressed at the same time</u> like spots or stripes. This is called <u>codominance</u>.

Examples of each are listed below.

- 1. Complete dominance
 - RR = Red Rr = Red
 - rr = White

2. Incomplete dominance

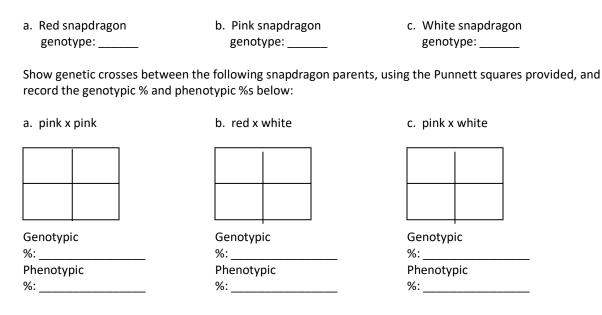
RR = Red		RR = Red
Rr = Pink	or	RW = Pink
rr = White		WW = White

3. Codominance

RR = Red		RR = Red
Rr = Red and White	or	RW = Red and White
rr = White		WW = White

Incomplete dominance practice problem

Snapdragons are incompletely dominant for color; they have phenotypes red, pink, or white. The red flowers are homozygous dominant, the white flowers are homozygous recessive, and the pink flowers are heterozygous. Give the genotypes for each of the phenotypes, using the letters "R" and "W" for alleles:



Co-dominance practice problem

In horses, some of the genes for hair color are co-dominant. In other words, both colors will show if the genotype is heterozygous. Genotypes are as follows: brown horses are BB, tan horses are TT and a BT genotype creates a brown and tan colored horse. Show the genetic crosses between the following horses and record the genotypic and phenotypic percentages:

a. brown x tan and brown

b. brown x tan

c. two brown and tan horses

Phenotypic

%:_____

Genotypic

%:

Genotypic %: _____ Phenotypic %: _____

Genotypic	
%:	
Phenotypic	
%:	

Can a cross between a tan horse and a brown horse ever have offspring that resemble the parents?