Dihybrid Punnett Square Notes

Dihybrid Crosses: Consider the inheritance of alleles of two genes.

Example: Suppose that in dogs, curly tail (t) is recessive to straight tail (T). In dogs, long hair (h) is also recessive to short hair (H). Suppose a male dog heterozygous for each trait and a curly-tailed, long haired female dog have puppies.

a. What is the phenotype of the mother? ____Curly Tailed, Long Haired_____

b. What is the genotype of the mother? _____tthh_____

c. What is the phenotype of the father? _____Straight Tailed, Short Haired_____

d. What is the genotype of the father? _____TtHh_____

e. How many different types of gametes can be formed by the mother? ___1____

The genotypes of the gametes are: ___curly and long_____

f. How many different types of gametes can be formed by the father? __4_____

The genotypes of the gametes are: _straight, curly, short, and long

g. Draw a Punnett square for this mating below. ____tthh_____ x _____TtHh_____

h. What is the ratio of the offspring that are curly and short haired? ____4:16 or 1:4_____

i. What is the ratio of the offspring that have the genotype tthh? _____4:16 or 1:4_____

	th	th	th	th
TH	TtHh	TtHh	TtHh	TtHh
Th	Tthh	Tthh	Tthh	Tthh
tH	ttHh	ttHh	ttHh	ttHh
th	tthh	tthh	tthh	tthh

Example: P_1 - RrYy x RrYy
Both parents are round yellow

Pea seeds: R – round Y - yellow
r – wrinkled y - green

	RY	Ry	rY	ry
RY	RRYY	RRYy	RrYY	RrYy
Ry	RRYy	RRyy	RrYy	Rryy
rY	RrYY	RrYy	rrYY	rrYy
ry	RrYy	Rryy	rrYy	rryy

F_1 Generation's traits
1) How many round yellow? ____8_____

2) How many round green? _____4_____

3) How many wrinkled yellow? ___3_____

4) How many wrinkled green? _____1____