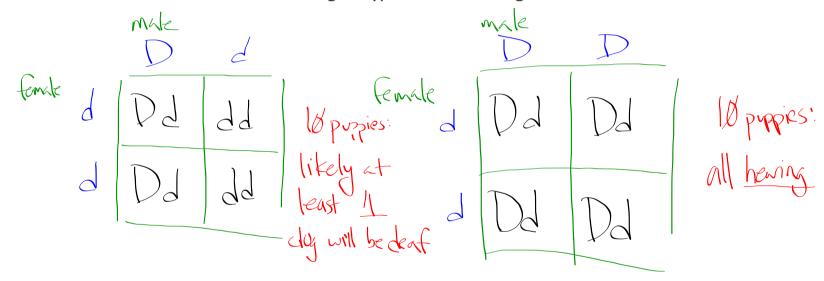
In dogs, there is a hereditary deafness caused by a recessive allele, "d". A kennel owner has a male dog that she wants to use for breeding purposes if possible. The dog can hear, so the owner knows his genotype is either DD or Dd. If the dog's genotype is Dd, the owner does not wish to use him for breeding so that the deafness gene will not be passed on. This can be tested by breeding the dog to a deaf female (dd). Draw the Punnett squares to illustrate the two possible crosses that would result from mating this male with a homozygous recessive female. In each case, what percentage/how many of the offspring would be expected to be hearing? deaf? How could you use the offspring of such a breed to determine the genotype of this male dog?



Alien Genetics Activity:

- 1) Determine 10 characteristics that are cass)
 genetic for a made-up space alien
- DYON and A partner will each determine the genetic makeup for one parent (INDIVIDUALLY)
- 3) You and your portner will make Punnett
 Squares that show all possible outcomes (5 Punners)
 of a making between your creatures
- You and your partner will randomly detrume the alleles your alien (YOU + PARTNER) OFF PRINCE)

Objectives:

- Students will practice using Punnett Squares
- Students will practice correctly using genetics vocabulary to describe the genotype and phenotype of parents and offspring
- Students will be able to explain how parental genotype and heredity can predict the potential phenotype of offspring

New Vocabulary for Alien Genetics Activity:

Trait: A measureable or observable characteristic of an organism (often genetically determined)

Phenotype: An organism's appearance with respect to a certain gene

Genotype: An organism's alleles for a certain gene

trait	genotype	Phenotype
Yellow/gren peas	Yy	Yellow Peas
Yellow/ gran pers	ΥΫ́	Yellow peas
Eye color	BB	Brown eyes
Eye color	PP	Blue eyes