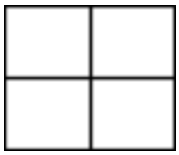
Name_____

Punnett Square Practice

In fruit flies, red eyes are dominant (E). White eyes are recessive (e).

1) If the female fly has white eyes and the male fly has homozygous dominant red eyes, what are the possible phenotypes and genotypes of their offspring?

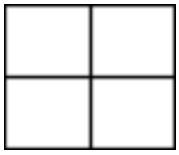


Genotypes:
EE
Ee:
ee:

Phenotypes:
Red Eyes:

White Eyes:

2) If the female fly has EE and the male fly has EE, what are the possible phenotypes and genotypes of their offspring?

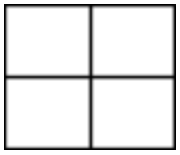


Genotypes:
EE:
Ee:
ee:

Phenotypes:
Red Eyes:

White Eyes:

3) If both flies are heterozygous, then what are the possible phenotypes and genotypes of their offspring?



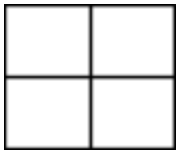
Genotypes:
EE:
Ee:
ee:

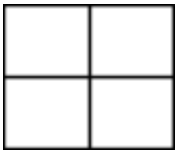
Phenotypes:
Red Eyes:

White Eyes:

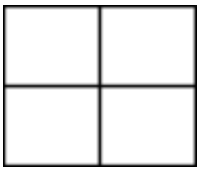
Use the following for questions 4-6:
In dogs, there is an hereditary deafness caused by a recessive allele, “d.” A kennel owner has a male dog (Gilbert) that she wants to use for breeding purposes if possible. The dog can hear.
4) What are the two possible genotypes of Gilbert?

5) If the dog’s carries the deaf (d) allele, 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 two Punnett squares to illustrate these two possible crosses.





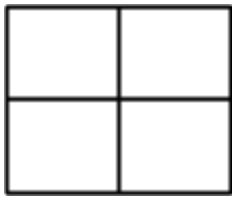
6) In each case, what fraction of the offspring would be expected to be hearing? deaf? How could you tell the genotype of this male dog? Also, using Punnett square(s), show how two hearing dogs could produce deaf offspring.



Use the following for questions 7-9:
In guinea pigs, short hair, S, is dominant to long hair, s. Complete the following Punnett squares according to the directions given. Then, fill in the blanks beside each Punnett square with the correct numbers.

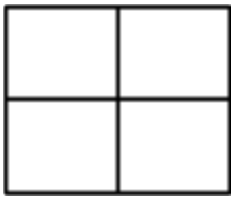
7) One guinea pig is Ss and one is ss.
Expected number of offspring:
____ Short hair (SS or Ss)

____ Long hair (ss)



8) . Both guinea pigs are heterozygous for short hair.
Expected number of offspring:
____ Short hair

____ Long hair



9) Write your own Punnett square problem and solve it. Your answer should include a completed Punnett square as well as identifying the **genotypes and phenotypes of the offspring.**

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