

Monohybrid Cross Worksheet

Part A: Vocabulary

Match the definitions on the left with the terms on the right.

- | | |
|--|-----------------|
| ___ 1. genotypes made of the same alleles | A. alleles |
| ___ 2. different forms of genes for a single trait | B. dominant |
| ___ 3. gene that is always expressed | C. heterozygous |
| ___ 4. gene that is expressed only in the homozygous state | D. homozygous |
| ___ 5. genotypes made of two different alleles | E. recessive |

Below each of the following words are choices. Circle the choices that are examples of each of those words.

6. Dominant allele

D e k L N n R S

7. Recessive allele

M n d F G r k P

8. Homozygous dominant

AA Gg KK mm uu Rr TT

9. Homozygous recessive

ee Ff HH Oo qq Uu ww

10. Genotypes in which dominant gene must show

AA Dd EE ff Jj RR Ss

11. Genotypes in which recessive gene must show

aa Gg Ff KK rr Oo Tt

Part B: Punnett Squares

12. Examine the following Punnett squares and circle those that are correct.

	D	d
d	Dd	dd
d	Dd	dd

	D	D
d	Dd	DD
d	Dd	Dd

	A	a
A	AA	aa
a	Aa	Aa

	A	a
a	Aa	aa
a	Aa	aa

13. What do the letters on the outside of the Punnett square stand for?

14. What do the letters on the inside of the Punnett square stand for?

15. In corn plants, normal height, *N*, is dominant to short height, *n*. Complete these four Punnett squares showing different crosses. Then, shade red all the homozygous dominant offspring. Shade green all the heterozygous offspring. Leave all the homozygous recessive offspring unshaded.

	N	N
n		
n		

	N	n
N		
N		

	N	n
n		
n		

	N	n
N		
n		

16. 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.

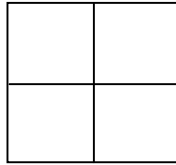
a. One guinea pig is *Ss* and one is *ss*.

Expected number of offspring:

_____ Short hair (*SS* or *Ss*)

_____ Long hair (*ss*)

b. Both guinea pigs are *heterozygous* for short hair.



Expected number of offspring:

_____ Short hair

_____ Long hair

Part C: Monohybrid Cross Problems - Show your work.

17. Hornless (H) in cattle is dominant over horned (h). A homozygous hornless bull is mated with a homozygous horned cow. What will be the genotype and phenotype of the first generation?

P₁

F₁

18. In tomatoes, red fruit (R) is dominant over yellow fruit (r). A plant that is homozygous for red fruit is crossed with a plant that has yellow fruit. What would be the genotypes and phenotypes of the P₁ and F₁ generations?

P₁

F₁

19. If two of the F₁ generation from the above cross were mated, what would be the genotypes and phenotypes of the F₂?

F₁

F₂

20. In humans, being a tongue roller (R) is dominant over non-roller (r). A man who is a non-roller marries a woman who is heterozygous for tongue rolling.

Father's phenotype _____

Mother's phenotype _____

Father's genotype _____

Mother's genotype _____

What is the probability of this couple having a child who is a tongue roller? _____

21. Brown eyes in humans are dominant to blue eyes. A brown-eyed man, whose mother was blue-eyed, marries a brown-eyed woman whose father had blue eyes.

What is the probability that this couple will have a blue-eyed child? _____