

Punnett Square Worksheet

Examine the following Punnett Squares showing genetic crosses of peas. Fill in the punnett squares. Give the number of each phenotype below each square. Then answer the questions below.
 T = tall t = short

A. TT x tt

B. TT x Tt

C. Tt x Tt

D. Tt x tt

Tall:
Short:

1. Which cross is between pure dominant and pure recessive parents?
2. Which cross is between two heterozygous parents?
3. Which crosses will produce all tall peas?
4. Which crosses will produce two short peas?
5. Which crosses have only one heterozygous parent?
6. Which cross is between a homozygous recessive parent and a heterozygous parent?
7. What are the genotypes of parents from the offspring produced here?

	?	?
?	TT	Tt
?	TT	Tt

In fruit flies, dark body color (D) is dominant and light body color (d) is recessive. List the genes in the sex cells to the side and complete each Punnett square.

One parent is homozygous recessive and the other is heterozygous. How many offspring will be:

8. Dark?
9. Light?
10. Heterozygous?

If both parents are heterozygous, how many offspring will be:

11. Homozygous dominant?
12. Homozygous recessive?
13. Dark?
14. Light?

Mendel worked with pea plants and made the following crosses. Complete the Punnett Squares and below each square put the genotypic (RR:Rr:rr) and phenotypic (red:white) ratios.

R = red r = white

1

	R	R
r		
r		

2

	R	R
R		
r		

3

	R	r
R		
r		

4

	R	r
r		
r		

Genotype:
Phenotype:

15. He crossed a red flowered plant with a red flowered plant. His results were 3:1 (red:white). Which of the Punnett Squares above best shows the parents and offspring that could give these results?
16. He crossed a red flowered plant with a red flowered plant. His results were 4:0 (red:white). Which of the Punnett Squares above best shows the parents and offspring that could give these results?
17. He crossed a red flowered plant with a white flowered plant. His results were 2:2 (red:white). Which of the Punnett Squares above best shows the parents and offspring that could give these results?
18. He crossed a red flowered plant with a white flowered plant. His results were 4:0 (red:white). Which of the Punnett Squares above best shows the parents and offspring that could give these results?

Not all characteristics have a clear dominance of one allele over the other. For example, the gene for flower color in four-o'clocks exhibits incomplete dominance: Homozygous have either red (rr) or white (ww) flowers, but heterozygous have pink (rw) flowers. Complete the Punnett Squares:

19. When red and white flowers are crossed, what is the genotypic ratio of offspring? (rr:rw:ww)

	r	r
w		
w		

20. What is the phenotypic ratio? (red:pink:white)

21. When two pink flowers are crossed, what is the genotypic ratio of offspring? (rr:rw:ww)

22. What is the phenotypic ratio? (red:pink:white)

	r	w
r		
w		