

Name _____ Class _____ Date _____

Dihybrid Cross Worksheet

In peas, round seed shape (R) is dominant to wrinkled seed shape (r), and yellow seed color (Y) is dominant to green seed color (y). A pea plant which is homozygous round seed and has green seed color is crossed with a pea plant that is heterozygous round seed shape and heterozygous yellow seed color.

Example: RRyy X RrYy

Gametes: Ry RY
Ry Ry
Ry rY
Ry ry

Punnet Square:

Gametes	RY	Ry	rY	ry
Ry				
Ry				
Ry				
Ry				

1. What are the chances of the offspring being homozygous for round seed?
2. What are the chances of the offspring being homozygous for wrinkled seed?
3. What are the chances of the offspring being homozygous for yellow seed color?
4. What are the chances of the offspring being homozygous for green seed color?
5. What are the chances of the offspring being heterozygous for both seed shape and color? Why?
6. What is the genotypic ratio?
7. What is the phenotypic ratio?

In the following plants round seed shape is dominant over wrinkled seed shape and yellow seed color is dominant over green seed color. Determine the offspring expected when two pea plants, each heterozygous for seed shape and seed color, are crossed.

R = round seed shape
r = wrinkled seed shape

Y = yellow seed color
y = green seed color

Parents: _ _ _ _ X _ _ _ _

Gametes: _____ _____
 _____ _____
 _____ _____
 _____ _____

Punnett Square:

Gametes				

8. What are the chances of the offspring being homozygous for both round seed shape and yellow seed color?
9. What are the chances of the offspring being homozygous for both wrinkled seed shape and green seed color?
10. What are the chances of the offspring being heterozygous for both shape and seed color?
11. What is the genotypic ratio?
12. What is the phenotypic ratio?

A purebred wingless red-eyed fruit fly is crossed with a purebred winged sepia-eyed fruit fly to produce F₁ flies.

A = wings
 a = wingless
 E = red-eyes
 e = sepia-eyes

Parents: _ _ _ _ X _ _ _ _

Gametes: _____

Punnett Square:

Gametes				

Two of the F₁ flies are mated to produce an F₂ generation of flies. What is the phenotypic ratio of the F₂ flies?

F₂ Parents: _ _ _ _ X _ _ _ _

Gametes: _____

Punnett Square:

Gametes				

Genotypic ratio: _____

Phenotypic ratio: _____