

## **Laboratory 9**

### **Mendelian Genetics**

### **Student Tip Sheet**

Mendelian Genetics can almost seem like you are studying a foreign language. New terminology with specific definitions seems to fill the introductory lectures. Give yourself ample time to absorb each term and relate it to others. Once the terms are mastered and you can use them fluently, the rest is almost a game or a fun puzzle.

This lab is full of interesting demonstrations and experiments that illustrate various genetic principles. Your instructor will give you specific instructions for how best to use the various lab setups. Most likely, your teacher will require only certain sections to be completed. Listen carefully for special instructions. Also, if you are asked to perform the genetic crosses of living organisms, several days or weeks may be required to complete the life cycles. Careful labeling and special attention to details will certainly be required to benefit the most from these activities. Be especially careful if you use anesthetic solutions at any time. These are generally very flammable and should be used under a fume hood.

Please find below a chart of three genetic crosses that will be an excellent review of the terminology and Punnett square exercises.





Example 3:

### 9:3:3:1 Ratio — A Dihybrid Ratio

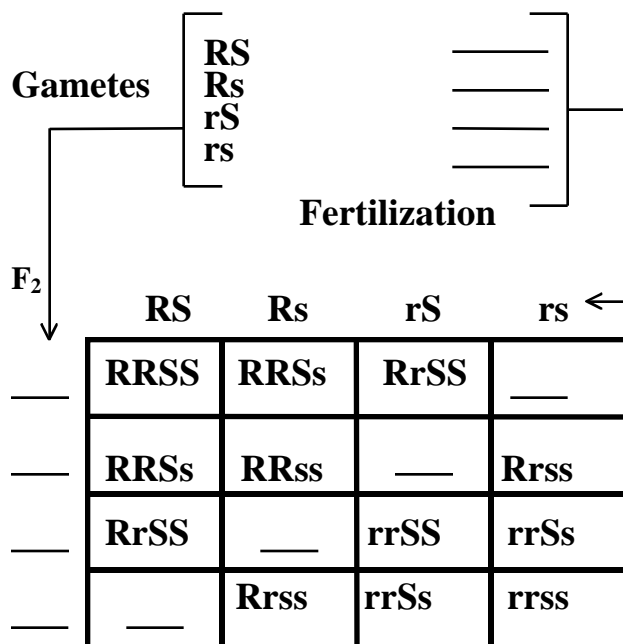
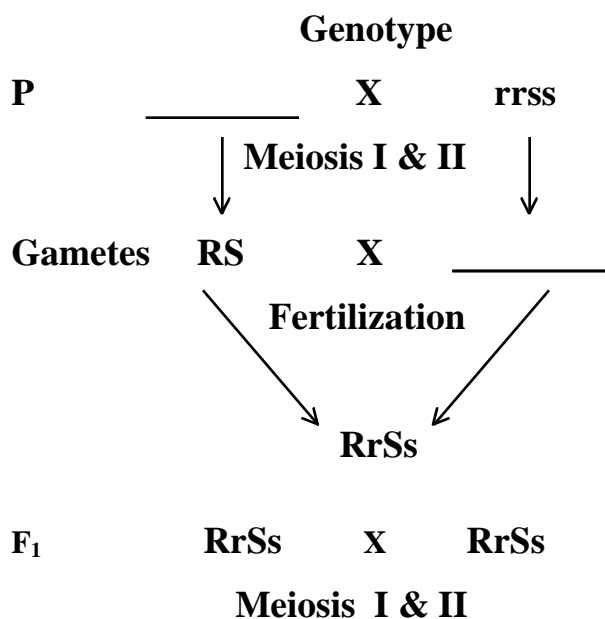
Fill in the blanks below.

**Kernel color**

S = smooth  
s = wrinkled

**Kernel shape**

R = purple  
r = yellow



**Phenotype**

**P** \_\_\_\_\_ X \_\_\_\_\_

**F<sub>1</sub>** \_\_\_\_\_ X \_\_\_\_\_

**F<sub>2</sub>**                      **The Four Phenotypes**

Purple	Smooth
Purple	Wrinkled
_____	_____
_____	_____

What is the phenotypic ratio of this dihybrid cross?

