

# TWO-CHARACTER CROSS.

TALL PLANT<sub>A</sub>/GENE<sub>A</sub>  
 DWARF PLANT<sub>B</sub>/GENE<sub>B</sub>  
 PURPLE FLOWER<sub>C</sub>/GENE<sub>C</sub>

WHITE FLOWER<sub>D</sub>/GENE<sub>D</sub>  
 CROSS:  
 SEGREGATION:  
 GAMETE:  
 CROSS-POLLINATION<sub>H</sub>

P<sub>1</sub> PHENOTYPE\*

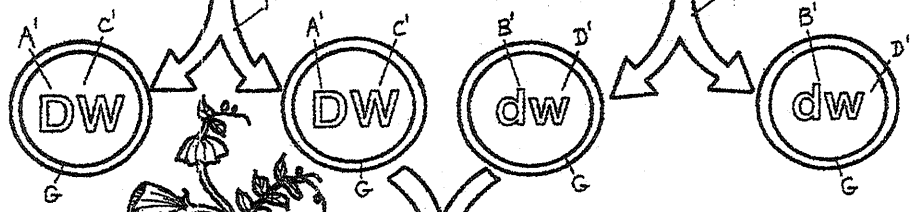
P<sub>1</sub> GENOTYPE\*

DDWW  
 A' C'

X<sup>-E</sup>

ddww  
 B' D'

P<sub>1</sub> GAMETES\*



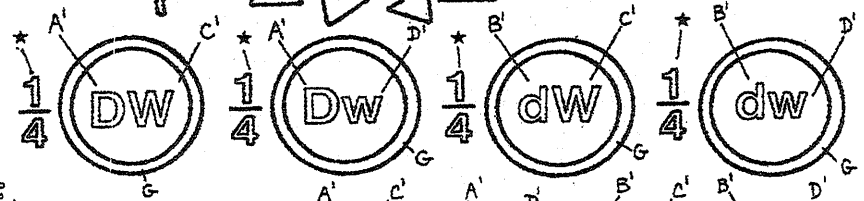
F<sub>1</sub> PHENOTYPE\*

DdWw

F<sub>1</sub> GENOTYPE (DIHYBRID)\*

\*-ALL

F<sub>1</sub> GAMETES\*



PUNNETT SQUARE (F<sub>2</sub> GENOTYPES)\*

F<sub>2</sub> PHENOTYPES\*

TALL PURPLE  
 TALL WHITE  
 DWARF PURPLE  
 DWARF WHITE

PHENOTYPIC RATIO\*

9 : 3 : 3 : 1  
 I : J : K : L

A' C'	DW	DDWW	DDWw	DdWW	DdWw
		I	I	I	I
A' D'	Dw	DDWw	DDww	DdWw	Ddww
		I	J	I	J
B' C'	dW	DdWW	DdWw	ddWW	ddWw
		I	I	K	K
B' D'	dw	DdWw	Ddww	ddWw	ddww
		I	J	K	L

# PUNNETT SQUARES— CROSSES INVOLVING TWO TRAITS

Name \_\_\_\_\_

In a dihybrid cross, when two traits are considered, the number of possible combinations in the offspring increases. Suppose that black hair (B) is dominant over blonde hair (b) and brown eyes (E) are dominant over blue eyes (e).

What percent of offspring could be expected to have blonde hair and blue eyes if:

- The father has black hair (heterozygous) and brown eyes (heterozygous) and the mother has blonde hair and blue eyes.

Genotype of father—BbEe

Genotype of mother—bbee

In the Punnett square below, complete the remaining gametes of the father. Then, fill in the boxes below.

	BE	Be		
be				

\_\_\_\_\_ %

- Both parents have black hair (heterozygous) and brown eyes (heterozygous).

Genotype of father— \_\_\_\_\_

Genotype of Mother— \_\_\_\_\_

Complete the Punnett square below.


\_\_\_\_\_ %

In each dihybrid cross, the phenotype ratio of individuals with brown hair and brown eyes, brown hair and blue eyes, blonde hair and brown eyes and blonde hair and blue eyes is