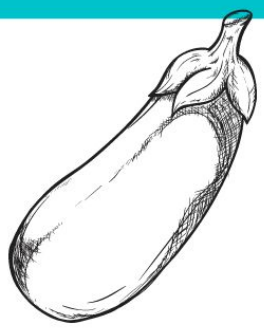


Dihybrid Cross Worksheet 4

Sciencenotes.org

Name

Date

Dihybrid cross problems

1. A single gene of a species of eggplant encodes for either dark purple (PP), light purple (Pp), or violet (pp) skin color. Another identified gene encodes for stem length (long, SS or Ss; or short, ss). If a light purple eggplant with a short stem is crossed with a violet eggplant that has a heterozygous long stem:

a. What is the genotype(s) of the parents? _____

b. Is the egg plant skin color trait an example of co-, incomplete-, or complete dominance?

_____

c. Is egg plant stem length an example of co-incomplete-, or complete dominance?

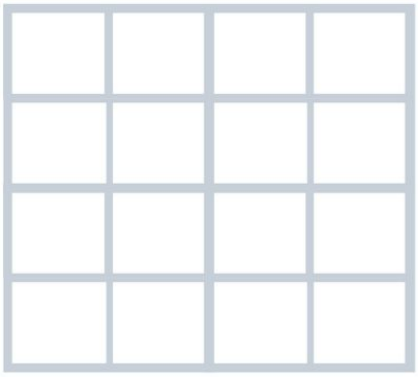
_____

d. What are the four possible allele combinations for each parental gamete?

Parent 1: _____

Parent 2: _____

e. Fill out the following dihybrid cross to determine potential F1 crosses.



2. Using the filled out dihybrid cross, determine what proportion of the offspring are expected to be or have:

a. Violet with short stems: _____

b. Light purple with long stems: _____

c. Dark purple: _____

d. Long stems: _____

e. Dark purple with short stems: _____

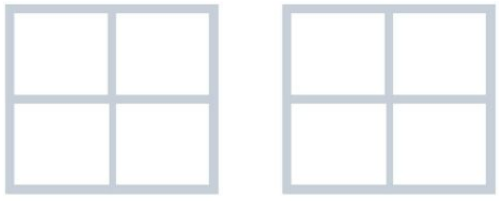
3. Determine the following genotypes of this specific cross:

a. Light purple with short stems: _____

b. Violet with long stems: _____

Advanced: 3. Using Question 1 as reference, two egg plants of unknown phenotype were cross-pollinated and the resulting offspring were counted. The results are as follows:

50 plants were dark purple with long stems (PPSs)
50 plants were light purple with long stems (PpSs)
50 plants were dark purple with short stems (PPss)
50 plants were light purple with short stems (Ppss)
No plants were violet (pp).



a. What are the likely genotypes of the parents?
(Hint: prepare monohybrid crosses for each gene).
Answer: _____