

GENETICS PRACTICE PROBLEMS

Name _____

1. In a particular plant, there are two alleles for the gene which controls flower color. One produces orange flowers, and the other yellow. A homozygous orange plant is crossed with a homozygous yellow plant. All of the offspring are yellow flowered. Which allele is dominant?
2. What is a good symbol for the orange allele? _____
3. What is a good symbol for the the yellow allele? _____
4. Two members of the F_1 from the first cross are crossed. Make a Punnett Square which shows this cross.

5. What is the expected genotypic outcome of this cross?

6. What is the expected phenotypic outcome of this cross?

7. What is a good symbol for the alleles which produce axial and terminal flowers in pea plants? (Check your book)
axial _____ terminal _____
8. Make a Punnett square than shows a cross between 2 axial flowered plants -- one homozygous, the other heterozygous.

9. What is the expected genotypic outcome?

10. What is the expected phenotypic outcome?

Critical Thinking Diagram Worksheet 8-1

Monohybrid Cross (seed color)			Dihybrid Cross (height and seed shape)				
	Y	y		TR	Tr	tR	tr
Y			TR				
			Tr				
Y			tR				
			tr				

Key: Y = yellow
y = green

Key: T = tall
t = short
R = round
r = wrinkled

Complete the following.

1. Complete the Punnett square for the monohybrid cross.
2. Complete the Punnett square for the dihybrid cross.
3. Circle the allele of the parent that is heterozygous for seed color in the monohybrid cross.
4. How does a monohybrid cross differ from a dihybrid cross? _____

5. In pea plants, is yellow or green seed color dominant? _____
6. In pea plants, are round or wrinkled seeds dominant? _____
7. Write the genotypes of the offspring that result from the monohybrid cross shown. _____

8. Write the phenotypes of the offspring that result from the monohybrid cross shown. _____

9. How many homozygous yellow offspring will result from the monohybrid cross? _____
10. How many heterozygous yellow offspring will result from the monohybrid cross? _____
11. How many of the offspring produced in the dihybrid cross will be homozygous tall? _____
12. How many of the offspring produced in the dihybrid cross will be heterozygous round? _____
13. Write the phenotypes that result from the dihybrid cross. _____

14. Explain the difference between a phenotype and a genotype. _____
