

Genetics

Name:

Punnett Squares and Probability

Period:

Use Chapter 6, Section 2 of your textbook to answer the questions below.

Punnett Squares (p.181)

1. A Punnett square is used to predict possible _____ for a particular cross.
2. Offspring get one _____ from each parent.

Use the Punnett square below to answer questions 3 and 4.

	<i>P</i>	<i>P</i>
<i>P</i>	<i>Pp</i>	<i>Pp</i>
<i>P</i>	<i>Pp</i>	<i>Pp</i>

- _____ 3. Look at the Punnett square above. What color will the offspring of the purple (PP) and white (pp) flowers be?
- a. purple
 - b. white
 - c. same number of purple and white
 - d. a blend of white and purple

- _____ 4. Look at the Punnett square above. How many of the offspring from this cross will have the same genotype?
- a. all the offspring
 - b. half of the offspring
 - c. one-fourth of the offspring
 - d. none of the offspring

More Evidence for Inheritance (p.182)

Use the Punnett square below to answer questions 5 and 6.

	<i>P</i>	<i>p</i>
<i>P</i>	<i>PP</i>	<i>Pp</i>
<i>p</i>	<i>pP</i>	<i>pp</i>

- _____ 5. Look at the Punnett square above. What are the possible genotypes of the offspring of this cross?
- a. PP, Pp, PP, pp
 - b. Pp, pp, PP, pp
 - c. pp, Pp, pP, pp
 - d. PP, Pp, pP, pp
- _____ 6. Look at the Punnett square above. Which two genotypes are exactly the same?
- a. PP and Pp
 - b. Pp and pP
 - c. pp and Pp
 - d. PP and pp

turn over the page for more questions

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What Are the Chances? (p.182)

7. How many alleles does each parent have for a gene? _____

8. The chance of an offspring getting one allele or another is _____.

Probability

9. _____ is the mathematical chance that something will happen.

_____ 10. When you toss a coin, what is the probability of tossing tails?

- a. 1/1 b. 1/4 c. 1/2 d. 2/1

Calculating Probabilities

_____ 11. How would you calculate the probability of tossing a coin and having the coin land heads up twice in a row?

- a. $2 \times 2 = 4$ b. $1 \times 2 = 2$ c. $1/2 \times 2 = 1$ d. $1/2 \times 1/2 = 1/4$

Genotype Probability

_____ 12. In a pea plant, what chance does offspring of a $Pp \times Pp$ cross have to receive two p alleles?

- a. $1/2 \times 1/4 = 1/8$ b. $1/2 \times 1/2 = 1/4$ c. $1 \times 2 = 2$ d. $1/2 \times 1 = 1/2$

_____ 13. How many choices were there for each pea plant trait Mendel examined?

- a. 1 b. 2 c. 3 d. 4

