

SECTION 3 - 2

REVIEW AND REINFORCE

Probability and Genetics

◆ Understanding Main Ideas

Complete the two Punnett squares below, and then answer the questions on a separate sheet of paper.

1. Punnett Square A:

	<i>B</i>	<i>b</i>
<i>B</i>		
<i>b</i>		

2. Punnett Square B:

	<i>Bb</i>	<i>bb</i>
	<i>Bb</i>	<i>bb</i>

- In the cross between two black guinea pigs shown in Punnett Square A, what is the probability that an offspring will be black? White?
- Is it possible that the cross between two black guinea pigs in Punnett Square A would not produce a white guinea pig? Explain.
- What color are the guinea pig parents in the cross shown in Punnett Square B?
- Which guinea pig parent(s) in Punnett Square B is homozygous? Which is heterozygous? Explain how you know.
- Calculate the probability that an offspring will be black in the cross in Punnett Square B. What is the probability that an offspring will be white?

◆ Building Vocabulary

Match each term with its definition by writing the letter of the correct definition on the line beside the term.

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| _____ 8. heterozygous | a. a chart that shows all the possible combinations of alleles that can result from a genetic cross |
| _____ 9. Punnett square | b. the likelihood that a particular event will occur |
| _____ 10. genotype | c. an organism that has two identical alleles for a trait |
| _____ 11. codominance | d. an organism's physical appearance |
| _____ 12. probability | e. an organism's genetic makeup, or allele combinations |
| _____ 13. homozygous | f. an organism that has two different alleles for a trait |
| _____ 14. phenotype | g. inheritance pattern in which the alleles are neither dominant nor recessive |