

CHAPTER REVIEW

Chapter 14

Heredity

I. Vocabulary Review

In the blank, write the word or words that best complete the sentence.

1. To diagram the history of a trait from one generation to the next, you could make a(n) _____.
2. To diagram the possible combinations of gene pairs, you could use a(n) _____.
3. Specific characteristics and features are called _____.
4. If nothing causes one trait to appear more often than another, that trait occurs _____.
5. Through his work, _____ concluded that traits occur in family pedigrees according to certain patterns of inheritance.
6. An illness transmitted through inheritance is classified as a(n) _____ disease.
7. An organism with one dominant gene and one recessive gene for a trait is called a(n) _____.
8. Sickle-cell anemia is a disease that follows a pattern of _____ dominance.
9. Each of the four DNA chemical compounds is categorized as a(n) _____.
10. The chromosomes are located in the _____ of the cell.

II. Concept Review

Answer the following questions in the spaces provided.

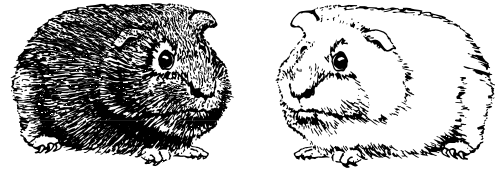
11. Explain the location of a gene relative to chromosomes and DNA. _____

12. Why might an individual with sickle-cell trait show some symptoms of sickle-cell anemia?

13. Figure 1 shows two guinea pigs that were bred. In guinea pigs, dark fur is dominant over white fur. Assume that a pure dominant male was bred with a pure recessive female. Use the letter F to represent the trait. Complete the Punnett square for this breeding.

Chapter Review 14 (continued)

14. How many of the guinea pigs born to the parents shown in Figure 1 would have dark fur? _____



15. Two guinea pigs, both heterozygotes with dark fur, are bred. If four guinea pigs are born in their litter, predict how many will be white. _____

16. If the first guinea pig born to these two heterozygous parents has white fur, what are the chances that the second guinea pig in the litter will have white fur? _____

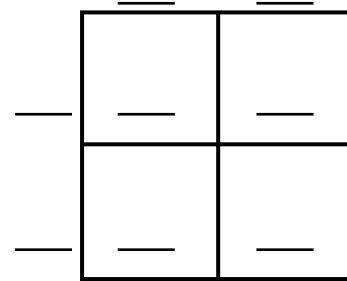


FIGURE 1

III. Skills/Process Review

Answer the following questions in the spaces provided.

- 17. Use a penny to represent a gene pair from a female. Use a nickel to represent a gene pair from a male. Each side of the coin represents one gene. How many genes does each parent contribute to an offspring? _____
- 18. The flip of the coin represents meiosis. How many genes does each coin contribute when it lands? _____
- 19. Let H represent heads and h represent tails. What are the four possible “gene pairs” that could result from the sorting of the coins? If you wish, use a Punnett square to help make this determination. _____
- 20. If you flipped the penny and nickel repeatedly, what are the chances that both would land on tails? _____
- 21. If you built a model of DNA from construction paper and used a different color for each base, how many colors of paper would you have used to represent the bases? _____

IV. EYV Review

22. **Art Connection: Craig Schaffer—Sculptor** Craig Schaffer, a sculptor, used a DNA chain as inspiration for a piece of art he created. Describe some features of DNA that you would find interesting or inspiring. _____