

Skills Worksheet

Reinforcement

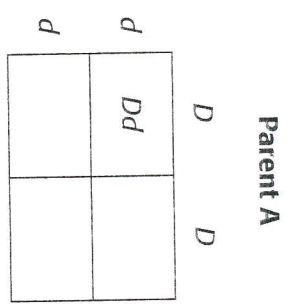
Dimples and DNA

Complete this worksheet after you finish reading the section "Traits and Inheritance."

In humans, dimpled cheeks are a dominant trait, with a genotype of DD or Dd . Nondimpled cheeks are a recessive trait, with a genotype of dd .

1. Imagine that Parent A, with the genotype DD , has dimpled cheeks. Parent B has the genotype dd and does not have dimpled cheeks.

The Punnett square below diagrams the cross between Parent A and Parent B. Complete the Punnett square. The first square has been done for you.

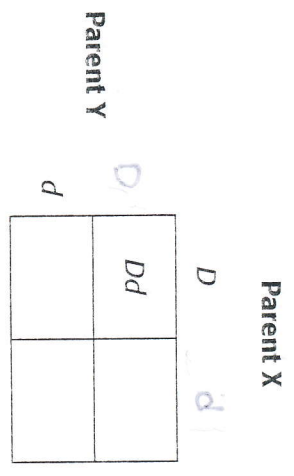


2. A Punnett square shows what genotypes are possible for the offspring of a certain cross. What genotypes are possible for the offspring of Parent A and Parent B?

3. Each of the four squares of a Punnett square represents a 25 percent probability that the offspring will have that particular genotype. What is the probability that the offspring of Parent A and Parent B will have dimpled cheeks?

Reinforcement continued

4. Parent X, with the genotype Dd , has dimpled cheeks. Parent Y also has the genotype Dd and has dimpled cheeks as well. To find out what their offspring might look like, complete the Punnett square below.



5. What is the probability that the offspring of Parent X and Parent Y will have each of the following genotypes?

DD : _____

Dd : _____

dd : _____

6. What is the probability that the offspring of Parent X and Parent Y will have nondimpled cheeks?

7. What is the probability that the offspring of Parent X and Parent Y will have dimpled cheeks? (Remember that there are two genotypes that can produce dimpled cheeks.)
