Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I CAN explain how inherited traits are passed from generation to generation and how they are different than learned traits.

Period\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**PUNNETT SQUARES AND DIMPLES**

* Complete this worksheet after you have completed the

 Directed Reading CH 5 S. 1 numbers 20-27.

* 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. Image 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. You may want to refer to How to Make A Punnett square in your text.)

 **Parent A**

FIGURE 1



**Parent B**

**Dd**

**d**

**d**

**D D**

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% 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?\_\_\_\_\_\_\_\_\_

**Parent X**

FIGURE 2



**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.

**Parent Y**

**D**

**D d**

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 will have nondimpled cheeks?\_\_\_\_\_\_\_

7. Mary has the genotype Dd and Doug has the genotype dd. Complete the Punnett square below to find out what their offspring might look like.

**Mary**



FIGURE 3

**Doug**

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

 DD:\_\_\_\_\_\_\_\_\_\_\_\_, Dd: \_\_\_\_\_\_\_\_\_\_\_\_\_, dd: \_\_\_\_\_\_\_\_\_\_\_\_\_

8. What is the probability that the offspring will have dimpled cheeks? \_\_\_\_\_\_\_