

Name _____
Date _____
Period _____

**Lab Activity Report:
Mendelian Genetics - PTC Testing**

Background: PTC testing is a method used to test for a genetic trait. People who are dominant taste PTC (phenylthiocarbamide), and people who are recessive do not taste PTC. This trait is passed genetically from parents to their children, so that if a person has the trait, then at least one of their parents had the trait as well.

Purpose: In this activity, you will taste a piece of PTC paper to see if you are dominant or recessive for the trait. You will use this information to predict the possible genotypes and phenotypes for your parents.

Biology Content Standard:

2e. *Students know* why approximately half of an individual's DNA sequence comes from each parent.

Hypothesis:

Do you think you will be a Taster or a Non-Taster?

Pre-lab Questions:

1. What is a genotype?

2. What is a phenotype?

3. What is a dominant trait?

4. What is a recessive trait?

Procedure:

1. Remove all gum and candy from your mouth.
2. Place the end of a piece of PTC testing paper into your mouth.
3. Write down what the paper tastes like: _____
4. If you tasted something, you are a Taster (dominant). If you did not taste anything, you are a Non-Taster (recessive). Which one are you? _____
5. What letters will be used to represent Tasters and Non-tasters?
 - a. Taster: _____
 - b. Non-Taster: _____

Conclusions:

1. How many students in the class are tasters? _____
2. How many students in the class are non-tasters? _____
3. Do you think that the gene for being a Taster is very common in the population? Why? _____
4. Draw a Punnett Square for the following parents: They are both heterozygous for the trait.

5. What genotypes of children are possible?

6. What is the ratio of genotypes?

7. What phenotypes of children are possible?

8. What is the ratio of phenotypes?

9. What is your phenotype?

Additional Questions:

10. What is your genotype? (Remember: You cannot assume homozygous dominant if you are dominant. For dominant students, use T_ to indicate that the second allele is unknown.

11. What genotypes are possible for your parents?

12. What phenotypes are possible for your parents?

13. If you are dominant for the trait, does one of your parents have to have the trait? Explain.

14. If you are recessive for the trait, does one of your parents have to have the trait? Explain.

