Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

It’s All About Taste

Why do some people love the taste of licorice while others can’t stand it? How come some people finish their vegetables and ask for seconds (without globs of melted cheese on top) while the mere smell of brussle sprouts can make some wretch on the spot? Taste is more than just preference; it’s in your genes.

Phenylthiocarbamide (PTC from now on) is a synthetic chemical who’s bitter taste discovered in the 1930s by two lab techs while they were pouring the white powder into beakers. One complained of a bitter taste while the other claimed not to taste anything. Three quarters of a century later the tasting or not tasting of this compound has become one of the most studied human traits. It is particularly interesting to scientists because is seems to be controlled by a single gene with only two alleles; termed “taster” or “non-taster”. Most human traits, even simple ones, have multiple alleles or even many genes interacting.

We will be doing a small study of traits. First read the article from ScienceDaily and answer the following questions.

1. What is the advantage of being able to taste bitter things in plants?

2. Why would an allele such as not tasting bitter be kept in a population?

3. How does this gene suggest that people have different tastes (literally) in food?

Now we will do a small study of PTC tasting in our class and families. First we need to determine the inheritance patter of PTC tasting.

1. At each bench there is a vial of PTC test strips. Place one on your tongue and record the taste below.

2. Now place a control on your tongue and record your result below.

**Data:**

**Control Tasters Non-Tasters**

**PTC Tasters Non-Tasters**

3. From your data what can you conclude about the inheritance pattern of PTC tasting?

4. If a person can taste PTC should they have a parent that can taste it as well?

**Family Trait**

You will not produce a small pedigree of a trait in your family. You may select any trait you wish but I recommend you try PTC, you may take home some strips for testing. If you do not live with genetic relatives or your direct parents (you live with relatives, a guardian, etc.) investigate a trait that you know your parents possess or follow your guardian’s inheritance as if they were your genetic parents (my youngest brother is adopted and this is the way he does anything like this).

**Data**

**Relative Taster/Non-Taster**

**Construct a pedigree below using proper symbols and tracing the inheritance of the trait.**