

Take a Class Survey

Some Basic Genetics:

- Animals typically have **two parts** of every gene (sometimes things go wrong).
- Each part is called an **allele**.
- You get one *allele* from your biological mother, and one from your biological father.
- Your **genotype** is the “type-o-gene” that you have (made up of alleles).
- Your **phenotype** is what we see – the **physical presentation** and **appearance** (even if we have to look really, really closely to see it).
- Sometimes an *allele* is **dominant**. Sometimes an *allele* is **recessive**.
- If a *dominant allele* is paired with a *recessive allele*, generally the dominant gene is expressed
- Generally, the only way to see a *recessive* trait is if both *alleles* are *recessive alleles*.

Goal: Gather data on an *observable* trait of you and your classmates; develop hypotheses (testable ideas) about what data you will see/hear.

The Problem: The ability to taste PTC is a dominant trait. Will that dominant trait be observed more frequently than the recessive trait (inability to taste PTC)?

Materials:

- A partner or partners
- PTC Paper
- A mint/hard candy
- Hand wipes
- Kleenex

The Question: Is the ability to taste PTC more common than not being able to taste it?

The Hypothesis: (our testable idea) Choose one of the two statements as your hypothesis:

- There will be more students who can taste PTC, than students who cannot.
- There will be more students who cannot taste PTC, than students who can.

Procedure:

1. Clean your hands with the hand wipe provided by your teacher.
2. Place the entire strip of PTC-saturated paper in your mouth. Wait 5-10 seconds... then carefully spit the paper into the tissue provided for you.
3. Use the mint/hard candy if the PTC taste is really horrible.
→ *Never taste any substance in a lab unless directed to by your teacher!*
4. Make a note on Data Table 1 whether or not you tasted the PTC (trust me, you’ll know!)
5. Count the number of students in your class who have the dominant trait (**can** taste PTC).
6. Count the number of students in your class who **cannot** taste the PTC (recessive trait).
7. Did anyone have an **EXTREME** reaction? These folks are the supertasters.
8. Add these results to Data Table 1.

**Data
Table 1**

PTC	Non-Taster	Taster	Super-Taster
You			
Class			

Let's talk about ratio and proportion

How many students are there in your class? _____

How many could taste the PTC? _____

How many could not taste the PTC? _____

How many were supertasters? _____

What is the ratio of kids who can taste PTC? _____

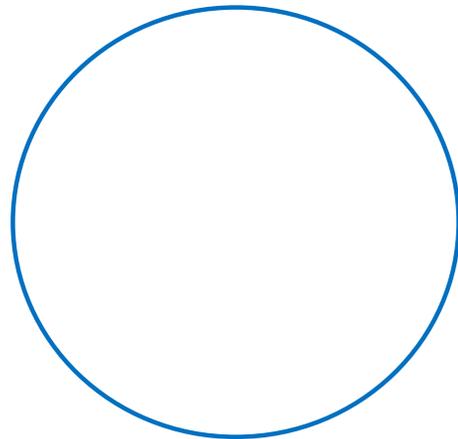
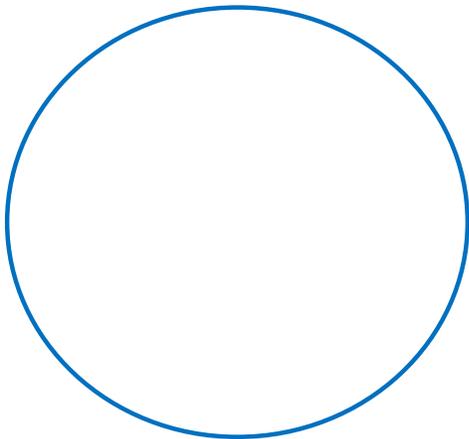
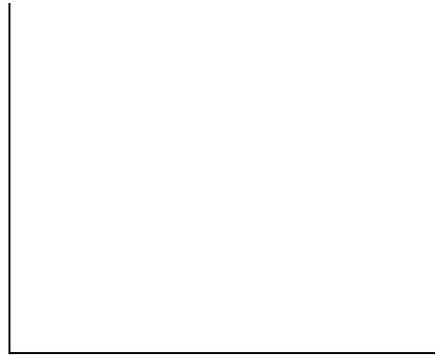
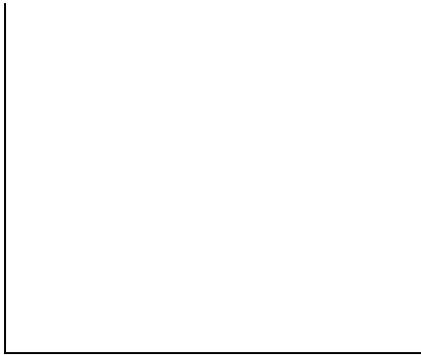
What is the percentage of kids who cannot? _____

If you divide the total number of students in the class by the number of students who have/don't have a trait, you can get a ratio or percentage.

So, if 7 kids taste PTC and you have 21 kids in class, then $\frac{7}{21}$ is your ratio of kids who can taste PTC, which is 33.3%

Can you make a graph?

There are a lot of ways to share data (like how many kids in your class can taste PTC). You can do it in words, you can use numbers and percentages. You can draw a table (like the one on the previous page), or a graph. What kind of graph do you want to draw? A bar graph? A pie chart? A line graph? Try one!



Do your findings support or refute your hypothesis? _____

Do you think your findings are accurate? _____ Why/Why not? _____

If you were going to run this experiment again, what would you do differently, and why?

I'd do...

Because...
