

A TRAIT ACCOMPLI LAB

Materials

- Students
- PTC Test Paper
- Graph Paper
- Sodium Benzoate Test Paper
- Thiourea Test Paper
- Data Table

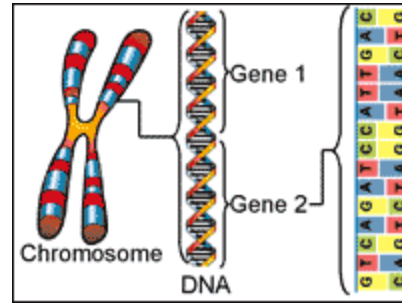
BACKGROUND INFORMATION:

The following are **TYPE A** traits among the human genome:

- | | | |
|--------------------------------|-----------------------------|-------------------------------------|
| Unattached Earlobes (EE, Ee) | Tongue Rolling (RR, Rr) | Widow's Peak (PP, Pp) |
| L Thumb on Top (TT, Tt) | Mid-digital Hair (HH, Hh) | Freckles Present (FF, Ff) |
| Dimpled Chin (DD, Dd) | Bent Little Finger (BB, Bb) | Longer 2 nd Toe (LL, Ll) |
| No Hitchhiker's Thumb (HH, Hh) | Taste PTC (PP, Pp) | Taste Thiourea (TT, Tt) |
| Taste Sodium Benzoate (TT, Tt) | | |

The following are **TYPE B** traits among the human genome:

- | | | |
|---------------------------------|-----------------------------|--------------------------|
| Attached Earlobes (ee) | No Tongue Rolling (rr) | No Widow's Peak (pp) |
| R Thumb on Top (tt) | No Mid-digital Hair (hh) | Freckles Absent (ff) |
| No Dimpled Chin (dd) | Straight Little Finger (bb) | Longer Big Toe (ll) |
| Hitchhiker's Thumb (hh) | Non-Taster PTC (pp) | Non-Taster Thiourea (tt) |
| Non-Taster Sodium Benzoate (tt) | | |



DIRECTIONS

1. Record your gender on the data table.
2. Record how many class members are participating in the lab (**Total** and by **Gender**).
3. Use the pictures from the PowerPoint (and your lab partner) to help you decide if you are the type A or Type B version of each trait.
4. Go through the data table and determine the traits you exhibit.
5. Graph 1 – Graph the percentages of the class for the Type A versus the Type B expressions of each trait.
6. Graph 2 – Graph the percentages for male versus female expressions for only the Type A traits.

ANALYSIS QUESTIONS:

1. Which trait for the class is most prevalent?
2. Which trait for the class is least prevalent?
3. Which trait for *each* gender is most prevalent?
4. Which trait for *each* gender is least prevalent?
5. How many of your traits were Type A and how many were Type B?
Answer this as a percentage. For example, 4 out of 13 = 30.8%
6. How many of your traits were a part of the majority and how many were part of the minority?
Answer as a percentage.
7. Write two different hypotheses which could have been formed based on the information from this lab.
8. Are the results for your class data going to be the same as the data from another class? Justify your answer.
9. Name three different conclusions that you could draw based on the information from this lab.
10. Why do organisms look the way they do?

DATA

Name _____

TOTAL STUDENTS IN CLASS _____ # of FEMALES _____

of MALES _____

ME	Trait	Genes	# Female	# Male	# Class	% Female	% Male	% Class
	UNATTACHED EARLOBES	EE, Ee						
	ATTACHED EARLOBES	ee						
	TONGUE ROLLING	RR, Rr						
	NO TONGUE ROLLING	rr						
	WIDOW'S PEAK	PP, Pp						
	NO WIDOW'S PEAK	pp						
	LEFT THUMB on TOP	TT, Tt						
	RIGHT THUMB on TOP	tt						
	MID-DIGITAL HAIR	HH, Hh						
	NO MID-DIGITAL HAIR	hh						
	FRECKLES	FF, Ff						
	NO FRECKLES	ff						
	DIMPLED CHIN	DD, Dd						
	NO DIMPLED CHIN	dd						
	BENT LITTLE FINGER	BB, Bb						
	STRAIGHT LITTLE FINGER	bb						
	2 ND TOE LONGEST	LL, Ll						
	BIG TOE LONGEST	ll						
	NO HITCHHIKER'S THUMB	HH, Hh						
	HITCHHIKER'S THUMB	hh						
	PTC TASTER	PP, Pp						
	NON-PTC TASTER	pp						
	THIOUREA TASTER	TT, Tt						
	NON-THIOUREA TASTER	tt						
	SODIUM BENZOATE TASTER	TT, Tt	SWEET					
SALTY								
BITTER								
OTHER								
	NON-SODIUM BENZOATE TASTER	tt						