A TRAIT ACCOMPLI LAB

## Materials

* Students • Sodium Benzoate Test Paper
* PTC Test Paper • Thiourea Test Paper
* Graph 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 2nd 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%

1. How many of your traits were a part of the majority and how many were part of the minority?

Answer as a percentage.

1. Write two different hypotheses which could have been formed based on the information from this lab.
2. Are the results for your class data going to be the same as the data from another class? Justify your answer.
3. Name three different conclusions that you could draw based on the information from this lab.

10. Why do organisms look the way they do?

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TOTAL STUDENTS IN CLASS \_\_\_\_\_\_\_\_\_\_ # of FEMALES \_\_\_\_\_\_\_**

**# of MALES \_\_\_\_\_\_\_\_\_**

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

DATA