Sci 9 **Genetic Diversity in the Classroom –**  Name:

Traits are physical characteristics you inherit from your parents. Does everyone look the same? In this investigation, you will take and inventory of some observable traits within class and notice that there is a huge diversity amongst your classmates.



1. Observe your traits and CIRCLE yours from the chart on the right.
2. Make a PREDICTION how many students in your class have the same **earlobe** trait as you. \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Make a PREDICTION of how many classmates will share **ALL** the same traits as you? \_\_\_\_\_\_\_\_\_\_\_.
4. Take inventory of your class using the attached class list. You must observe at least 16 classmates. Put a check mark in the spot representing each student’s trait.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Form 1 | Tally | PercentTally\_\_\_\_ x 100Total students  | Form 2 | Tally | Percent |
| Earlobe | Free |  |  | Attached |  |  |
| Dimples | Present |  |  | Absent |  |  |
| Chin | Cleft |  |  | No cleft |  |  |
| Hairline | Widows Peak |  |  | Straight |  |  |
| Finger Hair | Present |  |  | Absent |  |  |
| Thumb | Straight |  |  | Hitchhiker |  |  |

1. **Calculate the percent frequency** of each form of the trait for you class:

Percent Frequency = (number of students with trait/Total students checked ) x 100

1. Make a **bar graph** of your data. Put Traits on the x-axis, Frequency on the y-axis. Label your graph and give it an appropriate title.

 Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. For each trait, was there usually one trait more common than the other?
2. Why was your graph expressed as a percent?
3. Why do you think there are only two forms of these traits?
4. Do you think your sample of classmates would be representative of a larger population like the whole school? Explain your reasoning.

|  |  |
| --- | --- |
|  | Dominant or Recessive? |
| Earlobe |  |
| Dimples |  |
| Chin |  |
| Hairline |  |
| Finger Hair |  |
| Thumb |  |

1. Our traits are determined by our genes. We each get one set from a mother and one set from a father. For each trait there is a ***dominan****t* form and a ***recessive***form. The dominant form of the gene can *mask* the effect of the recessive gene for the trait. For the traits surveyed, list the form in the chart below that you think is dominant based on your data:
2. Imagine a mysterious virus spreads across the world killing everyone except people with attached earlobes and straight hairlines. Do you think this is enough people to repopulate the Earth?
3. Why do you think genetic diversity is important?

