Comparing Phenotypes

How unique are you? This activity will compare your phenotypes to your classmates and determine the percentage of traits you have in common.

Making Predictions

Refer back to your table of single-gene human traits and make a prediction about how many of the eight traits you share with your classmates. For example, if you think there might be 2 people who share four out of eight traits with you, then your prediction for box four is 2. Note: Your predictions should add up to the total number of students in your classroom minus yourself.

Number of Shared Traits	8	7	6	5	4	3	2	1	0
Predicted Number of Classmates									

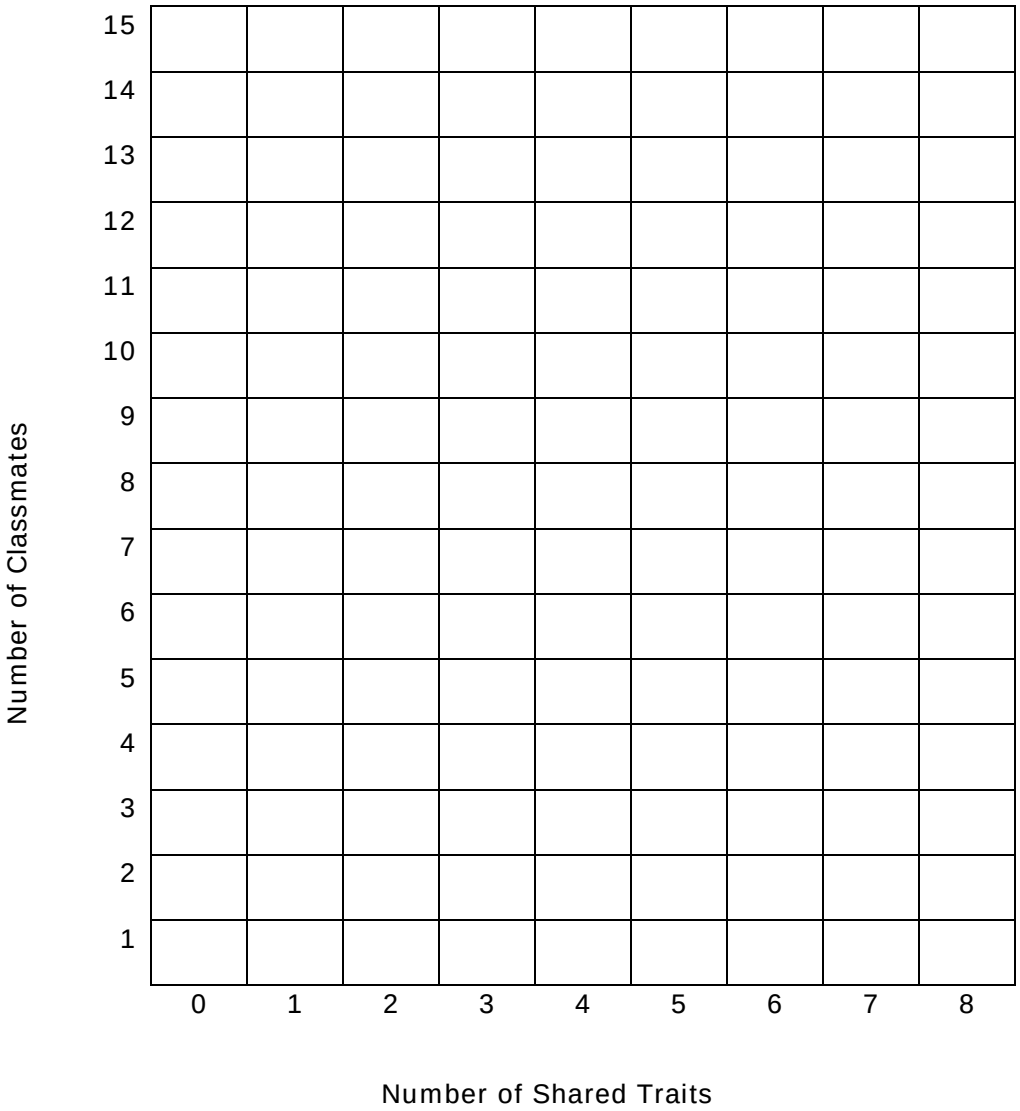
Collecting Data

Now compare your phenotypes with the phenotypes of each student in the class. For each student, place a tally mark next to the number of traits you both have in common. Then calculate the ratio and percentage of students who match you for each number of traits. Note: Your percentages should total 100%.

Number of Shared Traits	Tally Marks	Ratio Matches: Student Total	% of Classmates Who Match You
3 (example)	||||	*4:20 → 1:5*	*20% of my classmates have 3 traits in common with me*
0			
1			
2			
3			
4			
5			
6			
7			
8			

Interpreting Data

Using the data you collected above, create a bar graph and answer the questions that follow.



Discussion Questions

1. How many people in your class shared all 8 traits? _____
   Do these students look exactly alike? Explain:

   _____
   _____
   _____
   _____

2. How many people in your class shared zero traits? _____
   Do you think it is more common to share traits with another person or more common to *not* share traits? Explain:

   _____
   _____
   _____
   _____

3. Compare the actual results to your predictions. How well did you predict the number of classmates who matched your traits? Did any of the results surprise you?

   _____
   _____
   _____
   _____

4. In this investigation we compared only 8 traits. But did you know that each human being has over 100,000 traits? Based on this information and the results of your investigation, do you think that there could be another person in the school who has exactly the same traits as you? What about the entire world? Explain:

   _____
   _____
   _____
   _____

5. What conclusions can you make from this activity? What did you learn?

   _____
   _____
   _____
   _____