Human Traits Survey

Name_____

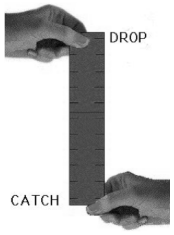
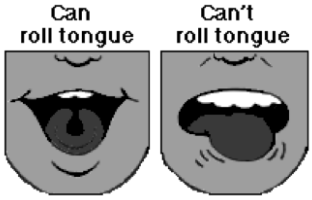
BA.1 - Illustrate, explain and predict the pattern of inheritance of traits using pedigrees and apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population. **(**HS-LS3-3)

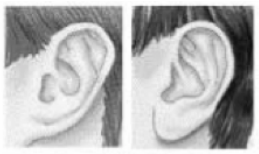
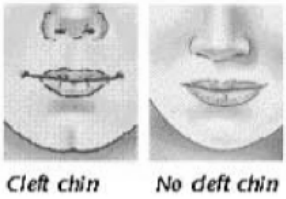
Level 3	Use the concepts of statistics and probabilities to explain the variation of expressed traits in a population.
Level 4	Use the concepts of statistics and probabilities to explain and predict the variation of expressed traits in a population.

Directions:

1. Find a partner from your table group.
2. Complete each measurement with your partner to complete the in Data Table 1.
3. Add your data to the following form for the following measurements: Hand Span, Reaction Time, Reach, Broad Jump. (Ask teacher where the computer is with the form to add your data)
4. Use the Hand Span Graph and select **one of the graphs** on the spreadsheet and analyze by answering the analysis questions below. (see Mr. Schmid's Biology Website)

Table 1: ***Trait values for self and partner***

Trait	Picture:	Self:	Partner:
Hand Span: Distance from tip of pinkie to tip of thumb when hand is fully stretched (cm)			
Reaction Time: Number of centimeters that passes before you can catch a falling ruler (best out of 3)...have your partner hold the ruler while you catch.			
Reach: How far up a wall you can touch with your fingertips when standing on tip toe (cm)			
Eye Color: What color are your eyes: Brown, blue, green, hazel			
Tongue Rolling: Can you roll your tongue into a tube			

Dimples: Do you have dimples on your cheeks?			
Earlobe Attachment: Are your earlobes attached to the side of your face?			
Widow's Peak: Do you have a widow's peak?			
Cleft Chin: Do you have a cleft chin?			
Hair Color: What color is your hair? Black, brown, blond, red			

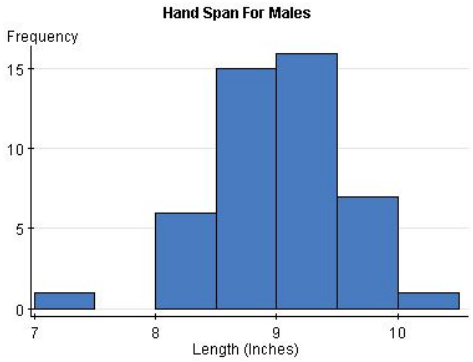
Analysis Questions:

Hand Span Graph

1. What are the graph's independent and dependent variables?

2. What do you notice about the relationship between the trait of hand span and the frequency (number of students) per measurement value. What does the data show you? Explain using data.

Questions 3 & 4 use the following graph below titled “Hand Span for Males”



3. For the graph, estimate how many individuals were sampled?

4. Explain how the hand span graph might be different if the sample size (number of people measured) was smaller or larger.

Select one of the other graphs (Reach or Reaction Time) to analyze and answer the following questions:

5. What are the graph’s variables (what is measured)?

6. Explain the relationship between the trait (reaction time, hand span, etc) and the frequency (number of students) per measurement value?

7. Explain how the graphs you analyzed would be different if the sample size (number of people measured) was smaller or larger.

8. If all of the other traits that you listed above were put into charts, which charts would look similar to the hand span or reaction time?

9. If all of the other traits that you listed above were put into charts, which charts would look differently than hand span or reaction time?

10. Why would they look differently?