

Name _____ Date _____ Page _____

Traits Inventory Lab

Background: The characteristics, or *traits*, of a living organism are determined by its *genes*. *Genes* are the sections of DNA that are passed from a parent to its *offspring*, or child. This is true for all living organisms from ones as basic as bacteria to something as complex as a human. The combination of genes animals receive from their parents will determine which traits it shows. Some examples of some traits are shown below.

Problem: Which traits are most common in a classroom of 7th graders?

Observations: Determine whether your *phenotype*, or appearance, is dominant or recessive for each trait. Write the appropriate letters in the boxes provided.

<input type="checkbox"/>	Widow's Peak (i)		<input type="checkbox"/>	Bent Fingers (B)	
<input type="checkbox"/>	No Widow's Peak (I)		<input type="checkbox"/>	Parallel Fingers (b)	
<input type="checkbox"/>	Dimples (D)		<input type="checkbox"/>	Tongue Roller (T)	
<input type="checkbox"/>	No Dimples (d)		<input type="checkbox"/>	Non-tongue Roller (t)	
<input type="checkbox"/>	Freckles (F)		<input type="checkbox"/>	Hair on Fingers (H)	
<input type="checkbox"/>	No Freckles (f)		<input type="checkbox"/>	No Hair on Fingers (h)	
<input type="checkbox"/>	Nonred Hair (R)		<input type="checkbox"/>	Free Ear Lobe (E)	
<input type="checkbox"/>	Red Hair (r)		<input type="checkbox"/>	Attached Ear Lobe (e)	
<input type="checkbox"/>	Hand Cross Right Thumb on Top (R)		<input type="checkbox"/>	Cleft Chin (C)	
<input type="checkbox"/>	Hand Cross Left Thumb on Top (r)		<input type="checkbox"/>	No Cleft Chin (c)	

TT It.
tt
TT tt
homozygous,
purebreed
Tt-heterozygous
hybrid

Predictions: Make predictions about which four traits will be the most common in our class.

-
-
-
-

Explain why you picked the four that you listed.

Why do you think some traits are more common than others?

Data: Collect data from the class to show the breakdown in the different traits.

$$\frac{\# \text{ of PPI}}{\text{total}} \times 100$$

	Trait	Number of People in Class	Total Number of People in Class	Percent
Widow's Peak	Yes (i)	6	26	
	No (I)	20		
Dimples	Yes (D)	9		
	No (d)	17		
Freckles	Yes (F)	7		
	No (f)	19		
Red Hair	No (R)	2		
	Yes (r)	0		
Hand Cross	Right on Top (R)	11		
	Left on Top (r)	15		
Fingers	Bent (B)	10		
	Parallel (b)	16		
Tongue Roller	Yes (T)	22		
	No (t)	4		
Hair on Fingers	Yes (H)	17		
	No (h)	9		
Ear Lobes	Free (E)	15		
	Attached (e)	11		
Cleft Chin	Yes (C)	3		
	No (c)	23		

Analysis: Create a bar graph showing the frequency of each trait.

Conclusions: Based on your results, answer the following questions.

- Which four traits were most common?
 •
 •
- Were any of the most common traits considered *recessive* or weaker traits?
- What other traits does a person have besides the ones we can see on the outside? (Hint: What about you makes you different from every other person?)