

Name: My Data

Class Section: _____

Designing Your Offspring Genetics Project

This project requires you to observe and record certain traits in another person, analyze the data, determine the genotype and phenotype and design what your progeny would look like based on the data collected.

Outcomes:

- S1-1-11: Observe, collect, and analyze class data of single trait inheritance. 1 2 3 4
- S1-1-12: Differentiate between dominant and recessive genes. 1 2 3 4
- S1-1-5c: Record, organize, and display data using an appropriate format. 1 2 3 4
- S1-0-6a: Interpret patterns and trends in data and infer and explain their relationships. 1 2 3 4

Procedure:

1. Get into groups of 2.
2. Using the information in table 1 to observe your partner and record your observations in table #2.
3. Using the information from table #2, create a Punnett square for each trait in order to determine the probability of have a child with that trait.
4. Record the probability of displaying each trait.
5. Draw a picture of 2 of your offspring, one female and one male based on the most probably genetic trait.
6. Hand in the entire project including completed tables, and 2 pictures of your offspring.

1. Table #1 Dominant and Recessive Traits

	Observable Trait	Dominant	Recessive
A	Eye Color (B,b)	Brown/Hazel	Blue
B	Hair Color (H,h)	Dark Hair	Light Hair (red/blond)
C	Type of Hair (Q,q)	Curly	Straight
D	Hairline (Pointed/Smooth)(N,n)	Widows Peak	Straight
E	Lip Shape (L,l)	Broad	Thin
F	Eye Size (E,e)	Large	Small
G	Eye Shape (A,a)	Almond shaped	Round shape
H	Nose Shape (R,r)	Broad	Narrow
I	Earlobe (G,g)	Detached	Attached
J	Chin Shape (I,i)	Cleft	Smooth
K	Dimples (D,d)	Present	Not Present
L	Freckles (F,f)	Present	Not Present
M	Eyelashes (Y,y)	Long eyelashes	Short Eyelashes
N	Eyebrows (T,t)	Bushy Eyebrows	Fine eyebrows

2. Table #2 - Observable traits and associated genotypes/phenotypes

RANDOM

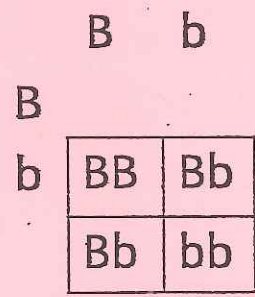
Observable Trait	Partner 1's Phenotype	Partner 1's Genotype	Partner 2's Phenotype	Partner 2's Genotype
Eye Colour			Brown	Bb
Hair Colour			Brown	Hh
Type of Hair			straight	gg
Hairline			widow's peak	NN
Lip Shape			thin	ll
Eye Size			small	ee
Eye Shape			almond	AA
Nose Shape			narrow	rr
Earlobe			detached	Gg
Chin Shape			cleft	Ii
Dimples			present	DD
Freckles			not present	ff
Eyelashes			long lashes	Yy
Eyebrows			fine	tt

3. Punnett Squares

On a separate sheet of loose-leaf, draw a Punnett square for each of the 14 traits. Write down the probability of getting each genotype (Homozygous dominant, heterozygous dominant, and recessive).

Eg.

Partner 1: Bb Bb= 50%
 Partner 2: Bb BB= 25%



bb- 25%

4. Drawings

Using your Punnett squares and the probability listings you have created, make 2 drawings, one of a female child and one of a male child. Drawing must accurately represent each of the 14 traits, must be colored, and visually pleasing.

- Drawing #1: Draw this child using all dominant characteristics.
 Drawing #2: Draw this child using all recessive characteristics.

Dominant

Recessive

Traits	Baby #1		Baby #2	
	Genotype	Phenotype	Genotype	Phenotype
Eye Colour				
Hair Colour				
Type of Hair				
Hairline				
Lip Shape				
Eye Size				
Eye Shape				
Nose Shape				
Earlobe				
Chin Shape				
Dimples				
Freckles				
Eyelashes				
Eyebrows				

Marking Rubric

- Table #2 (1 mark per trait): 14 marks _____
 Full Genotype per partner (0.5 per partner)
- Punnett Squares (2 marks each): 28 marks _____
 Punnett square drawn, completely filled in accurately (1), probabilities included (1)
- Drawings: (5 marks each): 10 marks _____
 Drawing included (1), all traits represented accurately (2), colored (1), visually pleasing (1)

Total **52 marks** _____