Genetics Project: Design a Species

Create an imaginary creature. The creature must have at least 5 genetic traits from the following list:

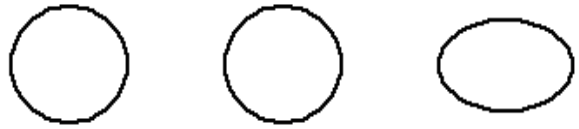
2 Double Allele Traits
1 Incomplete Dominance Trait
1 Multiple Allele Trait
1 Sex Linked Trait

1. Describe and Sketch each of the traits on the list, showing genotypes and phenotypes for each. (see sample)
2. Sketch two examples of your creature. The two examples must have different genotypes, with one male and one female.
3. Pick one of your single allele traits and and create a sample pedigree for your creature which includes at least 4 generations
4. Show 2 monohybrid crosses using your of your single allele traits (Ex: Aa x Aa) for the example you made. Show the Punnet square and the ratios produced.

GENETICS PROJECT SAMPLE

Smileyface abnormalus

Double Allele Trait (shape of head)



RR (round) **Rr (round)** **rr (oval)**

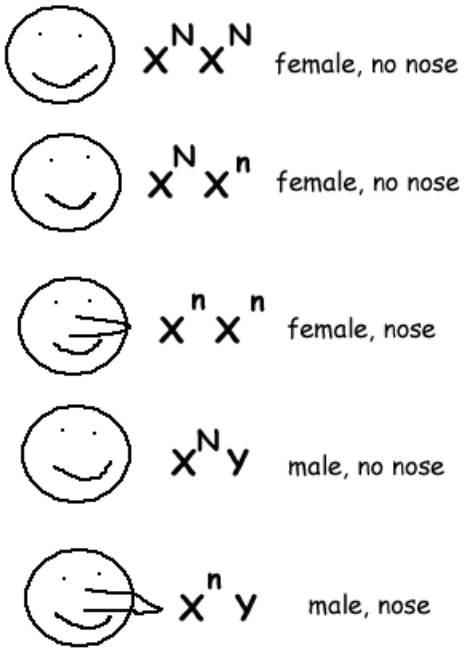
Double Allele Trait (hair)

HH (curly) **Hh (curly)** **hh (straight)**

Incomplete Dominance Trait (mouth shape)

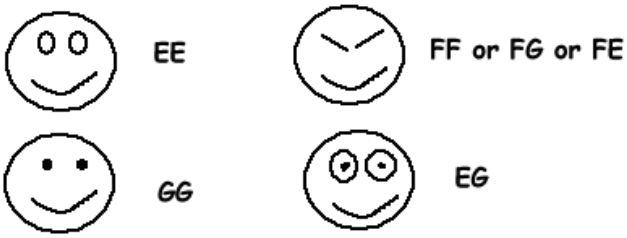
MM (smiley) **MM' (straight)** **M'M' (frowny)**

Sex-linked Trait (nose)



Multiple Allele Trait (eye shape)

E = circle eyes **F = slant eyes**
G = dot eyes **EG = circle dot**
(slant eyes are dominant, circle and dot are codominant)



Genotype **Phenotype**

RrhhM'M'GG$X^N X^n$

SAMPLE 1

DRAW THE DIFFERENT MEMBERS OF *Smileyface abnormalus* and INDICATE GENDER

1. _____ RRHHM'M'GGX^NX^N

2. _____ rrhhMMFGX^NX^N

3. _____ RRhhM'M'EGX^nX^n

4. _____ rrHhMMFFX^NX^N

5. _____ RrHHMM'EEX^nX^n

Rubric

Item	Description	Possible Points	Grade Yourself	Actual Grade
Double allele trait 1st	Described, sketched, genotype & phenotype given	10		
Double allele trait 2nd	Described, sketched, genotype & phenotype given	10		
Incomplete Dominance trait	Described, sketched, genotype & phenotype given	10		
Multiple allele trait	Described, sketched, genotype & phenotype given	10		
Sex-linked trait	Described, sketched, genotype & phenotype given	10		
Example 1	Sketch and genotype given	10		
Example 2	Sketch and genotype given	10		
Pedigree	Sketch a pedigree showing 4 generations	10		
Monohybrid Crosses	Punnett square and ratios given	20		