Name: _____
Due Date: _____

Genetics Project - Design a Species

Objective: Genetics follows certain rules, as illustrated by Punnett squares, principles of dominance and recessiveness, and rules related to the location of alleles on the chromosomes. In animals, such as mice, certain traits are expressed in predictable ways. In this project, you are going to design your own imaginary species, and create traits for the species that follow genetic rules that you have already studied.

The creature should have at least 5 genetic traits from the following list. You are free to create whatever traits you like (such as hair color, size, shape, or other features)

- 3 Single-allele traits
- 2 Codominant trait (or incomplete dominance)
- Extra Credit: 1 multiple allele or sex-linked trait

Your final project should have the following elements:

1. Describe or sketch each of the traits from the list, listing genotypes and phenotypes for each. Partial sketches are fine in this case.
2. Sketch two examples of your creature – one male and one female. The two examples must have different genotypes. Each sketch should have the genotype listed for all traits.
3. Create 5 practice problems, using any of the traits. These should be word problems. Do not just write Aa x Aa.

*Extra Credit: Use a single-allele trait to create a pedigree chart for the two organisms you drew. Include 3 generations with at least 2 offspring per couple. Each must have a name and a genotype.

Genetics Project Grading Rubric

	Unsatisfactory (3 pts)	**Satisfactory (4pts)**	**Excellent (5 pts)**
Traits and pictures	Some do not follow genetics “rules”, pictures not clear	Follows genetics rules, pictures are small or lacking in creativity or effort	Follows genetics rules, pictures are drawn large and clearly. Colored. Creative.
Creature examples	Genotype doesn’t follow phenotype, pictures not included or unclear	Genotype follows phenotype, all traits included, pictures somewhat unclear or not neat	Genotype follows phenotype, pictures drawn clearly, neatly and creatively, and colored
Practice problems	Less than 5 problems given, more than 1 is impossible to solve	5 problems given, somewhat unclear or unsolvable	All 5 problems are written well and can be solved
TOTAL			