

Name:
Partner Name:

Date:



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CHARACTER GENETICS PROJECT

Choose two characters (cartoons, superheroes, etc.) to genetically cross and make a character baby. You will determine the phenotypes and genotypes of your male and female characters and use Punnett squares to predict potentially what their offspring would look like if they were to reproduce.

1. Pick 5 **traits** (Ex: hair color, eye color, invisibility, strength, speed, etc.) for your characters and fill in the first column of Chart 1.
2. Next, determine the possible **alleles** (forms of the **gene/the letters**) for each trait and place these in the 2nd column of Chart 1. Place all the forms of the **genotypes and phenotypes** in the 3rd column of Chart 1. Put Chart 1 in your packet!!!

Allele Examples: Possible alleles are R=red, r=black.

Phenotype/Genotype Examples: RR = red, Rr = red, rr = black

3. In your packet, you will make a chart listing the genotypes and phenotypes of your male and female characters. You will have to choose names of your characters for your Chart 2. Place this chart in your packet!!!

For the genotype, you will just have to decide if your character will be heterozygous, homozygous dominant, or homozygous recessive.

4. You may either draw and color your male and female character or print out a colored picture of each and put them in your packet.

Leave room for Step 5!!!

5. Next, neatly draw 5 Punnett Squares in your packet for your 5 traits. You will be crossing your male and female characters, so use his and her genotypes as the parents in your crosses. **Below each Punnett square, list the possible phenotype and genotype probabilities for your characters' offspring.**

Phenotype Probability: 75 % Red, 25% White

Genotype Probability: 25% RR, 50% Rr, 25% rr

NOW FOR THE CHARACTER OFFSPRING!!!

6. Flip one coin to determine the sex of the baby character. The one coin will be used to determine the allele for the male parent. Heads=X, Tails=Y and Female=XX, Male=XY

7. Flip two coins for each of the 5 traits. One coin is the female **gamete (egg)** and one coin is the male **gamete (sperm)**. **Heads is dominant and tails is recessive**. Record your results (trait, phenotype, genotype) in Chart 3 for the baby and put this chart in the front of your packet along with a drawing (colored as well) of your baby character. The baby has to be designed (hand drawn/computer) and colored – **no exceptions!!!**

Character Genetics

NAME _____

Chart 1

Character Trait	Alleles		All Possible Genotypes and Phenotypes
	Dominant	Recessive	
Example: Hair Color	R-red	r-white	RR-red, Rr - red, rr-white

Chart 2

	FEMALE		MALE	
Name of Character				
Trait	Phenotype	Genotype	Phenotype	Genotype

Chart 3

Character Baby		
Name of Offspring		
Trait	Phenotype	Genotype

Essay Requirements:

Write an essay of the life of the character baby.

Include: How the parents of the baby met. (make it up using the parent’s background)

Where they live with their new baby. (describe it: it can be a pretend or real place)

When was the baby born and where.

What was the baby’s childhood and life like growing up. It’s tough to be a character sometimes or it was great...tell me about it!

Physical description of the baby.(use the traits to help- add this into the story as you go-you don’t need a whole section for this)

What did he/she do with the inherited power/ what are the powers (if any)?

Write an exciting adventure that your character is in that involves using his/her traits. Be sure to work as many of the baby’s traits as possible throughout the story.

The Essay must be at least two pages. Be sure the essay is well written with few spelling errors, well formed paragraphs and sentences, great word choice and it should be an interesting story.

Use this as a checklist before handing in your project to be sure your project is complete and done well.

1. Cover:

- a. Majority of traits are shown in cover _____
- b. Cover is neat and colorful _____
- c. Students Name is on cover _____
- d. Student class is on cover _____
- e. Character Baby Name is on cover _____

2. Trait Lists:

- a. Parents names are listed _____
- b. Parents traits are listed neatly in packet _____
- c. Baby traits are listed neatly in packet _____

3. Punnett Squares

- a. All punnett squares and percentages are correct. _____
- b. The punnett squares are neat and easy to read. _____
- c. The trait that has the highest probability is circled and used. _____
- d. If a 50/50 chance, you chose the trait and circled it.