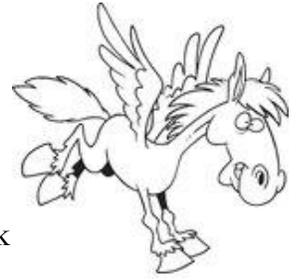


Name: _____

Period: _____

The Enchanted Equines of Enchancia

INSTRUCTIONS: Enchancia is a far-off land that has strong ties to agriculture. The founding fathers of the land brought horses with them when they settled the area over a thousand years ago. Over time, the people of Enchancia have bred beneficial mutations in to the horses to create animals that can be used for a number of purposes. While breeding these animals, they have also learned which traits are dominant and which traits are recessive. Complete the worksheet to unlock the genetic key of the horses of Enchancia.



Genetic Key	
Upper case letters represent _____ traits/alleles;	
Lower case letters represent _____ traits/alleles	
N = NORMAL NECK n = longer neck	E = BROWN EYES e = blue eyes
H = NORMAL HAIR h = longer hair	F = FEATHERING f = no feathering
B = FULL SIZE b = miniature	L = NORMAL TO LONG TAIL l = naturally docked
U = NO HORN u = uni-horn	M = HEAVILY MUSCLED m = normal muscles
T = ONE SOLID HOOF t = split hoof	W = NO WINGS w = wings
S = SPOTS s = no spots	X = sex chromosome Y = sex chromosome
(XX = female)	(XY = _____)

Using the key, answer the following questions.

1. What letters are used to represent eye color? _____
2. What letters are used to represent neck length? _____
3. The letter "T" is used to represent _____
4. The letter "e" is used to represent _____
5. List the genotypes and phenotypes of 4 dominant traits shown in the key. _____

6. List the genotypes and phenotypes of 4 recessive traits shown in the key. _____

INSTRUCTIONS: Using the key from the previous page as a reference, fill in the missing symbols for alleles (genotypes) or descriptions of physical appearance (phenotypes) in the table below.

Trait	_____type	Homozygous or Heterozygous?	_____type
Neck		Homozygous Dominant	Normal neck
Neck	Nn		
Neck			Longer neck
Eye Color			Blue eyes
Eye Color	EE		
Eye Color		Heterozygous	
Horn	uu		
Muscles	Mm		
Feathering?			No feathering
Feathering?		Heterozygous	
Wings		Homozygous Dominant	
Wings	ww		
Spots			No Spots
Hooves		Homozygous Dominant	
Hooves			Split Hoof
Tail length	Ll		
Tail Length			Docked Tail
Hair	hh		
Size		Homozygous Dominant	

If you were a farmer raising corn in Enchancia, give the genotype and phenotypes of three traits that you would want in your horse that you use for work on the farm and tell why

Genotype	Phenotype	Why This Trait?