Name: _____ Date: _____ HR: _____

You have learned about many different patterns of inheritance. Some are simple dominant or recessive, as in Mendelian traits. Some are more complex, such as incomplete dominant or codominant traits. In this lab you will investigate how a combination of these genes works to create an organism.

Part 1 Procedure:

1. Flip a coin **twice** to determine the **genotype** for each trait and record it in the data table. *Determine the **phenotype** resulting from the allele pair for each trait.*

2. Repeat steps 1-2 for each trait and complete the female monster's Table 1.

Table 1: Genotypes & Phenotypes for Female Monster

Trait	Heads	Tails	Genotype	Phenotype
Eye	Two small eyes (E)	One large eye (e)		
Eye Color (incomplete dominance)	Red (R)	White (R')		
Skin Color (codominant)	Green (G)	Blue (B)		
Tail Shape	Curly (C)	Straight (c)		
Tail Color	Purple (P)	Orange (p)		
Tail (epistasis)	Have tail (T)	No tail (t)		
Teeth	Sharp (S)	Round (s)		
Feet (incomplete dominance)	Four toes (F)	Two toes (F')		
Horn Color	Purple (W)	White (w)		
Ear shape	Pointy (Y)	Round (y)		
Ears (epistasis)	No ears (N)	Two ears (n)		
Claws	Long (L)	Short (l)		

Part 2 Procedure:

The female monster (described in Table 1) and a male monster (see Table 2 below) plan to have baby monsters. They are interested in finding out for each trait the probability that their offspring will have that trait.

1. Fill in the missing genetic information in the table for the male.

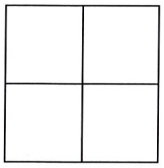
Table 2: Genotypes & Phenotypes for Male Monster

Trait	Genotype	Phenotype
Eyes	ee	
Eye Color (incomplete)		White
Skin Color (codominant)		Green
Tail Shape		Straight
Tail Color	Pp	
Tail (epistasis)		No tail
Teeth		Round
Feet (incomplete)	FF'	
Horn Color	ww	
Ear shape	yy	
Ears (epistasis)		Have 2 ears
Claws		Short

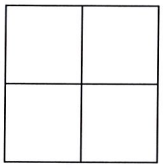
Part 3 Procedure:

Create Punnett squares to predict what traits would result from a cross between the two monsters for each trait, and answer the following questions:

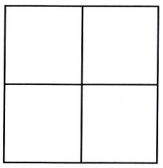
Eyes – What percent of offspring will have only one eye? _____



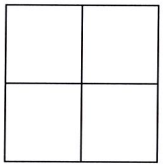
Feet – What percent of offspring will have three toes? _____



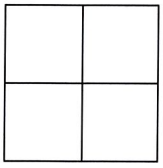
Eye Color – What percent of offspring will have red eyes? _____



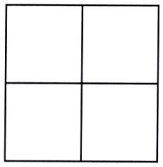
Horn Color – What percent of offspring will have purple horns? _____



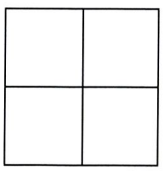
Skin Color – What percent of offspring will have green skin? _____



Ears – What percent of offspring will have ears? _____



Tail – What percent of offspring will have a tail? _____



Claws – What percent of offspring will have long claws? _____