

Name \_\_\_\_\_

Date \_\_\_\_\_

## Dragon Genetics

Section LE

Lab #

### Objective:

After completing this activity, students should be able to explain how offspring inherit traits from their parents.

### Important Vocabulary:

Inherit	Heredity	Genetics	Gene
Dominant	Recessive	Purebred (homozygous)	Allele
Phenotype	Genotype	Hybrid (heterozygous)	

### Materials:

1. Envelope with 3 chromosomes from Mom (Pink) and 3 chromosomes from Dad (blue)
2. Tape or glue
3. Scissors
4. Colored pencils, markers, or crayons

### Procedure:

1. Remove all 6 chromosomes from your envelope. 3 chromosomes are from the mother dragon (pink) and 3 are from the father dragon (blue).
2. Pair each chromosome from Mom to the matching chromosome from Dad. (Remember that chromosomes match up according to size and shape)
3. Once the chromosomes are matched, you will begin filling in Table 1. The first column has been completed for you. You will notice that the 3 traits that are found on each chromosome are listed.
4. In the next column, record the Genotypes for each trait. These are found on the chromosomes in parentheses below each trait. The Genotype is made up of two letters. One letter will come from the pink chromosome (mom) and the other will come from the blue chromosome (dad).

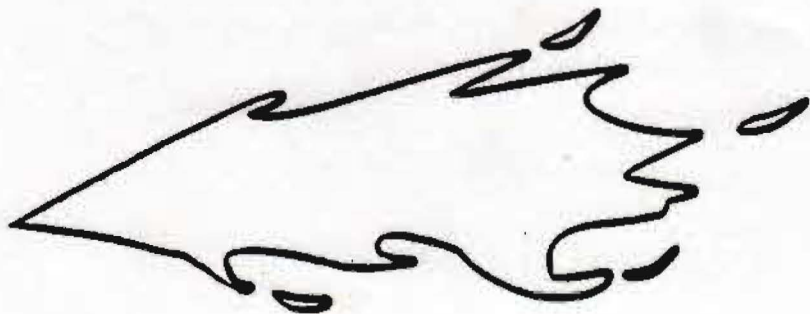
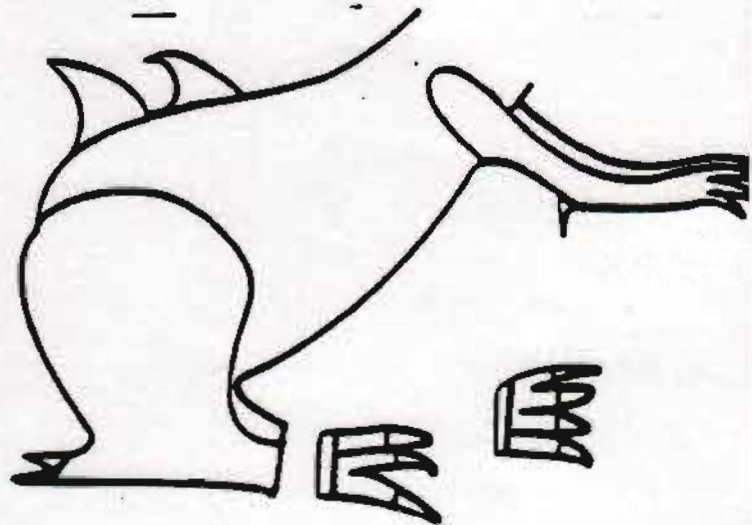
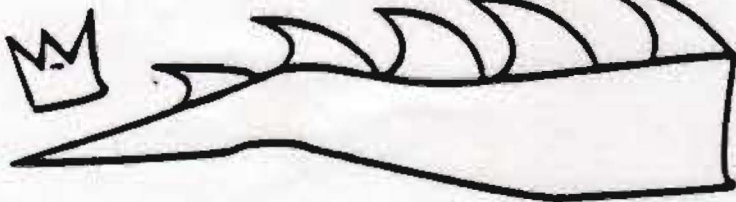
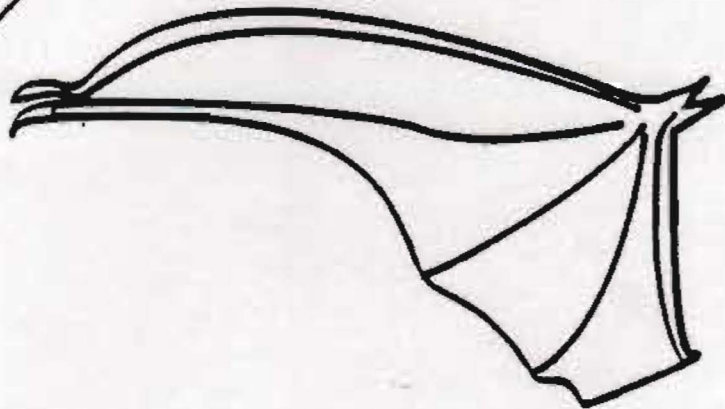
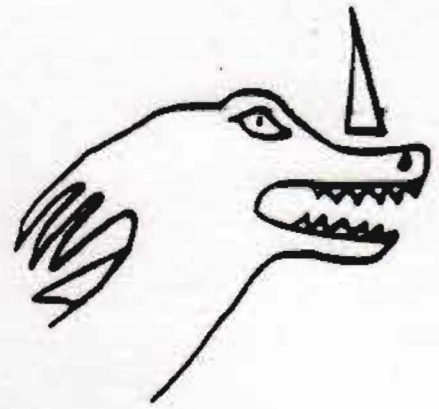
**HINT:** Pay close attention to each letter. Capital letters indicate Dominant traits and lowercase letters indicate Recessive traits.

**TABLE 1:**

Chromosome Pair	Trait	Genotype	Dominant or Recessive	Phenotype	Purebred or Hybrid
Oval	neck length				
	eye color				
	horn				
Triangle	tail length				
	body color				
	ability to breathe fire				
Rectangle	tail spike				
	wing color				
	number of claws				

**Table 2: Key to Dragon Traits**

Oval Chromosome	Triangle Chromosome	Rectangle Chromosome
N - long neck n - short neck	T - long tail t - short tail	I - Spike at end of tail i - no spike at end of tail
E - red eyes e - white eyes	G - green body g - grey body	W - red wings w - yellow wings
H - horn h - no horn	B - fire breathing b - does not breathe fire	F - three claws f - four claws





**Conclusion Questions:**

Determine an appropriate name for Table 1 and record your answer below and on the page with Table 1.

2. Compare and contrast your dragon with a classmate's dragon. List all of the similarities and differences in traits between the two dragons.

Similarities	Differences

3. a) Design a 4<sup>th</sup> set of chromosomes for your dragon. This 4<sup>th</sup> set of chromosomes should be a different size or shape from the other chromosomes. It should carry at least 2 new traits for the baby dragon.

b) Draw the new chromosomes in the space below.

c) List the genotype and phenotype for the new traits from chromosome #4.

d) Make body parts for the new traits and add them to your offspring dragon.

Draw chromosomes here

List genotypes and phenotypes here

