

Dragon Genetics

#1
Mom

neck
n

eye color
E

horn
h

#1
dad

neck
N

eye color
E

horn
h

#2
Mom

tail
t

wing color
w

claws
C

#2
Dad

tail
t

wing color
w

claws
c

#3
Mom

breath
F

body color
b

spike
s

#3
Dad

breath
F

body color
B

spike
s

Name _____

Dragon Genetics

Procedure:

1. Remove the yellow and green strips of paper from the envelope. Use the numbers found on each to pair them up, creating three sets.

What do these strips of paper represent? _____

2. Use Table 1 to record the three traits found on each pair of paper strips. For example, for the pair number 1, write in *neck*, *eyecolor*, and *horn* under the "Trait" column. Fill in the traits for each of the three pairs.

3. In the next column, record the letter under each trait. Be sure to indicate whether it is a capital letter or a lower-case letter. This is the genotype for each trait.

What do these letters represent? _____

What does an uppercase letter represent? _____

What does a lowercase letter represent? _____

4. In the next column, record whether your dragon will exhibit the dominant trait or the recessive trait.

How do you know? _____

5. Next, determine the phenotype of your dragon using the "Key to dragon trait alleles" provided under Table 1 and record this information in the space provided in Table 1.

6. In the last column, indicate whether your dragon is heterozygous or homozygous for each trait.

What does heterozygous mean? Give an example. _____

What does homozygous mean? Give an example. _____

7. Now that you have determined which traits your dragon will exhibit, ~~draw~~ ^{draw} the appropriate body parts. ~~Use Figure 9, draw the back of this dragon, and color them accordingly.~~
 on a separate sheet of paper

8. Finally, write your conclusion. You should answer the three questions: What did you do? What did you find? What does this mean?

TABLE 1.

| Chromosome pair number | Trait | Genotype | Dominant/ Recessive | Phenotype | Homozygous/ Heterozygous |
|------------------------|-------|----------|---------------------|-----------|--------------------------|
| 1 | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Chromosome pair number | Trait | Genotype | Dominant/ Recessive | Phenotype | Homozygous/ Heterozygous |
| 2 | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Chromosome pair number | Trait | Genotype | Dominant/ Recessive | Phenotype | Homozygous/ Heterozygous |
| 3 | | | | | |
| | | | | | |
| | | | | | |

Key to dragon trait alleles

| | | |
|---------------------------|----------------|---------------|
| N—long neck | E—red eyes | H—horn |
| n—short neck | e—white eyes | h—no horn |
| F—fire breathing | B—green body | T—long tail |
| f—does not breath fire | b—grey body | t—short tail |
| S—spike at end of tail | W—red wings | C—three claws |
| s—no spike at end of tail | w—yellow wings | c—four claws |