

DRAGON GENETICS

Problem: To determine the traits of a dragon based on the combination of alleles inherited from the parents.

Materials: colored pencils, gene strips, white paper, pencil, Data Table 1

Procedure:

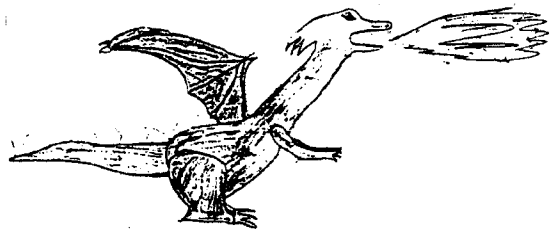
1. Match the numbers on the gene strips creating three sets of chromosomes.
2. Use table 1 and the column called "Traits" to record the three traits found on each pair of chromosomes. Fill in traits for each of the three pairs of chromosomes.
(Example: For chromosome pair #1, write *neck*, *eye color*, and *horn*.)
3. In the "Genotype" column, write the combination of alleles from your gene strips. (Example: Nn, Ee, cc)
4. In the "Dominant/Recessive" column, indicate if the alleles are dominant or recessive using a "D" or an "R". (Example: Nn = D/R)
5. Describe the phenotype in the appropriate column for each trait. Use the " Key to Dragon Trait Alleles " box to determine the phenotype.
6. In the last column, indicate if the genotype is homozygous or heterozygous.
7. Draw a diagram of your dragon on a white sheet of paper and give your dragon a name.

Some Notes to Review:

Dragon inheritance facts

Unit factors occur in pairs.

- A pair of unit factors may be homozygous (both the same) or heterozygous (different). When a pair is heterozygous, the dominant trait is expressed.
- Unit factors, now called alleles, lie linearly along chromosomes.
- A phenotype refers to how a gene looks or the gene trait it produces; a genotype refers to the specific alleles constituting the trait.
- Dominant/recessive inheritance is but one of a multitude of inheritance patterns.



NAME _____

CLASS _____ DATE _____

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