

Alien Genetics-Draft

In this activity you will design two aliens and determine the genotype and phenotype of their offspring.

1. As a group decide on a visible trait that an alien would possess and choose which phenotype would be dominant and which would be recessive. Use letters to represent the alleles.

Table 1

Trait	Dominant Allele	Recessive Allele
A.		
B.		
C.		
D.		

2. Determine the genotype of each parent for each trait listed above. Flip a coin to select the alleles. Heads represents the dominant allele and tails represents the recessive allele.

Table 2.

Mother's Genotype(need to flip twice)	Father's Genotype(need to flip twice)
A.	
B.	
C.	
D.	

3. For each trait use a Punnett Square and predict the possible genotypes of each cross. State the genotypic and phenotypic ratio for each trait.

Trait: _____

Genotypic Ratio:

Phenotypic Ratio:

Trait: _____

Genotypic Ratio:

Phenotypic Ratio:

Trait: _____

Genotypic Ratio:

Phenotypic Ratio:

Trait: _____

Genotypic Ratio:

Phenotypic Ratio:

4. Let's mate our aliens and determine the offspring's genotype for each trait. Using the information from Table 2 fill-in the mother's and father's genotype in the table below. If the parents are homozygous for a trait, then there is no choice of what allele goes to the offspring. If a parent is heterozygous for a trait then you will have to flip a coin to determine which allele is passed on to the offspring. Heads is the dominant allele and tails is the recessive.

Table 3.

Trait	Mother's Genotype	Father's Genotype	Offspring's Genotype
A.			
B.			
C.			
D.			

Create a visual of your alien family (parents and offspring) in the space below to show its phenotype. Be able to explain the evolutionary advantages or disadvantages of the traits. Be prepared to present your results to the class for peer and instructor evaluation.

Needs peer evaluation and instructor evaluation rubrics