|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Letter | Trait | Dominant Phenotype | Recessive Phenotype | Genotype | Phenotype |
| A | # of eyes |  |  |  |  |
| B | Body Shape |  |  |  |  |
| C | # of arms |  |  |  |  |
| D | Shape of Antennae |  |  |  |  |
| E | Type of legs |  |  |  |  |
| F | Your choice |  |  |  |  |
| G | Your choice |  |  |  |  |

**Gene Alien Project (Academic Behavior Grade)**

Goals:

1. Model how DNA carries your genes by using different alleles to create offspring.

2. Using genotypes to decide phenotypes.

Essential Genetic Vocabulary

Allele – a different form of a trait (A or a)

Homozygous – the same alleles (AA or aa)

Heterozygous – different alleles (Aa)

Genotype – the gene pair (DNA) represented by the letters (AA, aa, or Aa)

Phenotype – the physical trait (brown hair, blue eyes)

Materials: Popsicle sticks, pencil, crayons, & paper

Directions:

1. Color two popsicle sticks the same. Color in rainbow order: red, orange, yellow, green, blue, purple, pink
2. Each color represents a gene. Using letters A to G, mark either a capital or lower case letter in each of the colored areas. Place an A on red and continue in order. YOU MAY NOT USE ALL CAPITALS. (at least 3-4 lower case)
3. Complete chart with the following gene alien characteristics (leave genotype and phenotype blank for now.) You will fill out two different options for each trait. Example: # of eyes – dominate 3 circles, recessive 1 bulgy. The more creative you are, the better your alien will turn out.

How to create your gene alien:

1. Exchange one of your sticks with a neighbor (this represents different genes from different parents).
2. Match alleles to decide genotype of monster.
3. Attach or draw a copy of your sticks with the alleles marked.
4. Write a final copy of your chart with the genotypes stated and the characteristics for each trait.
5. Draw your monster with the phenotypes depicted.