**Biology Notes Practice**

**Monohybrid cross**

One parent – Blue – BB Second parent – Red – bb

Brake apart the BB and bb and place them next to the square

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What is the phenotype of all of the offspring? What is the genotype of the offspring?

Now preform another monohybrid cross using one of the offspring. (Bb)

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What are the phenotypes now? Ratio? What is the genotype now? Ratio?

**Dihybrid cross**

One parent – Tall and Purple (TtPp) Second Parent – Tall and Purple (TtPp)

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What are the phenotypes? What are the genotypes

11-2 Applying Mendels Priciples

Probability and Punnett Squares

* After identifying that there was a 3:1 ratio of characteristics, Mendel identified that can be taken into effect when determining traits
* Flipping a coin – H or T?
* Flipping two heads in a row
* ½ x ½ =
* Flipping 4 heads in a row?
* ½ x ½ x ½ x ½ =

Using Segregation

* In the F1 generation, the trait showed through but carried the trait
* So the hybrid contained one dominate allele and one recessive allele
  + *Tall : ( ) Short : ( )*
* The only way to produce a short offspring in F2 is to have two recessive alleles
* In the same way, in order to produce a offspring, there would have to be a in the offspring
* If the offspring contains a TT or a tt, it is said to be , alleles
* If the offspring contains a Tt, it is said to be , alleles

Probabilities and Predictions

* The larger the number of , the closer the results of a predicted value
* are to show average outcome of a large number of events
* Flip coins – chances for two heads???
* 1 person –
* 1 row –
* Everyone -

Genotype and Phenotype

* During the crosses, Mendel identified the characteristics as a phenotype
  + *Height,*
* The genetic makeup, , could be different however depended on the in fertilization

Punnett Squares

* A square diagram used to show crosses and predict outcomes
* Step 1 –
* Step 2 –
* Step 3 –
* Step 4 –
* Step 5 –

Summary of Mendel’s Principles

* The inheritance of are determined by
* Where two or more forms of a trait exist, some alleles are
* In most reproducing organisms, each adult has of each , one from each parent
* Alleles for different genes of each other
* Look on page 318, summarize the last paragraph on Mendel’s Principle not just to plants