8th Grade Heredity

Cells Review Notes

* There are two main types of cells
  + Prokaryotic – do not have a nucleus
  + Eukaryotic – does have a nucleus
* Each gene has two versions (Allele – different versions of a gene)
  + Dominant – represented by a capital letter
  + Recessive – represented by lowercase letter
    - * Example
        + BB

Two dominant alleles for the same gene

-homozygous dominant

* + - * + bb

Two recessive alleles for the same gene

-homozygous recessive

* + - * + Bb

Two different alleles for the same gene

-heterozygous

* Punnett Squares – a way to predict possible genotype and phenotype of the offspring
  + Genotype – genetic makeup, alleles
  + Phenotype – physical expression of the genes (looks)
    - Example
      * BB x BB

|  |  |  |
| --- | --- | --- |
|  | **B** | **B** |
| **B** | BB | BB |
| **B** | BB | BB |

100% homozygous dominant, all offspring will show the dominant trait of blue flowers

* + - * Bb x Bb

|  |  |  |
| --- | --- | --- |
|  | **B** | **b** |
| **B** | BB | BB |
| **b** | Bb | Bb |

Genotypic ratio

* + - * + 1:2:1
        + Homozygous dominant : heterozygous : homozygous recessive

Phenotypic ratio

* + - * + 3:1
        + Dominant : recessive