

Genetics

Glossary 1

- **Genetics:** The study of heredity.
- **Heredity:** The passing of traits from parents to offspring.
- **Offspring:** A child or children.
- **Trait:** The property or characteristic of an organism.

- **Dominate trait:** A trait that will appear in the offspring if one of the parents contributes it.
- **Recessive trait:** A trait that will appear in the offspring if both parents contribute it.

- **Sperm:** Male sex cell or gamete
- **Egg:** Female sex cell or gamete
- **DNA:** Deoxyribonucleic Acid
- **Gene:** DNA segments

The Beginning

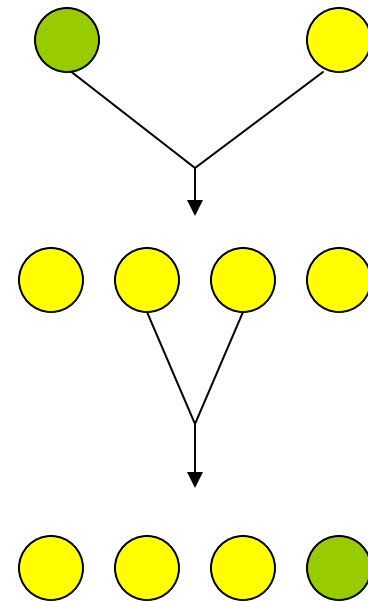
- Gregor Mendel (1866) an Austrian monk and plant breeder.
- The Father of Genetics
- Used pea plants to study genetics.

- **Allele:** an alternative form that a single gene may have for a particular trait.
- **Homozygous dominant:** an organism with the same two dominant alleles for a trait. (YY)
- **Homozygous recessive:** an organism with the same two recessive alleles for a trait. (yy)
- **Heterozygous:** an organism with two different alleles for a trait. (Yy)

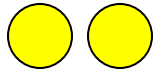
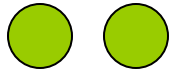
- **Phenotype:** observable characteristics or outward expression of an allele pair.
- **Genotype:** the alleles that are present but not necessarily observed.
- **Monohybrid Cross:** crossing one trait
- **Dihybrid Cross:** crossing two traits
- **The Law of Independent Assortment:**
Random assortment of alleles in gametes.

Mendel's Pea Experiment

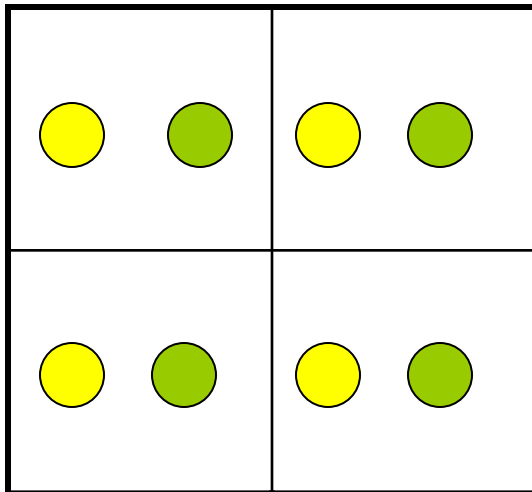
- Parental (P) generation (pure-breeding)
- First filial generation (F1)
- Second filial generation (F2)



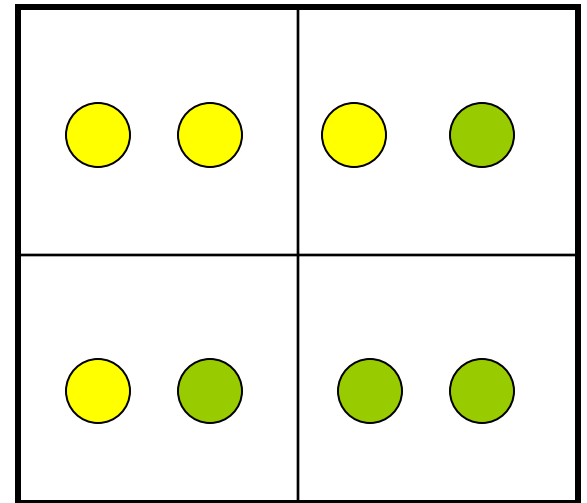
Punnett Squares

P generation  & 

F1



F2



Punnett Squares

P generation YY (male) & yy (Female)

F1

	Y	Y
y	Yy	Yy
y	Yy	Yy

F2

YY	Yy
Yy	yy