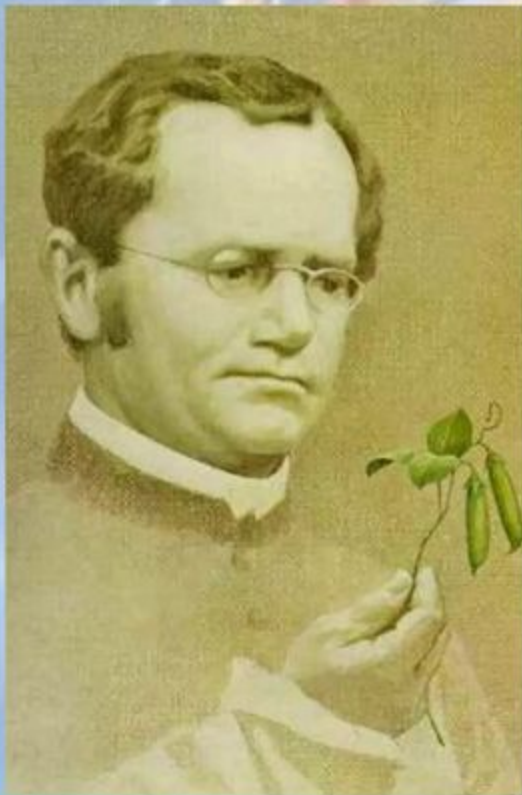


# Basic concepts of Genetics

\* WHAT IS GENETICS?

\* Genetics refers to the study of genes, heredity & genetic variation in the living organism.

\* Gregor Mendel is called as  
“Father of Genetics”.



In the mid-1800s, the rules underlying patterns of inheritance were uncovered in a series of experiments performed by an Austrian monk named Gregor Mendel.



## \* Genes

- \* A gene: DNA sequence that is needed to encode amino acid sequence of a protein
- \* They contain the hereditary information encoded in their chemical structure for transmission from generation to generation.



\* **Inheritance** is how traits, or characteristics, are passed on from generation to generation.

\* **Dominant** traits- traits that are expressed.

\* **Recessive** traits- traits that are covered up.

\* **Alleles**- the different genes for the same trait.

\* **Genotype**- the types of genes (Alleles) present.



The background of the slide features a light blue gradient with several semi-transparent, overlapping images of DNA double helix structures. One DNA structure is prominently visible in the upper right, while others are scattered across the frame. In the lower left, there is a faint image of a cell with internal organelles. The text is overlaid on this background in a bold, dark blue font.

\* **Phenotype**- physical appearance resulting from gene make up.

\* **Locus** – location of a *gene/marker* on the chromosome.

\* **Homozygous**- two of the same alleles.

\* **Heterozygous**- two different alleles.