

1. Basic genetics and molecular biology

. Basic genetics

The laws of inheritance are investigated by genetics. The different nucleic acids (DNA and RNA) in the living organism play a central role in the inheritance of the different features. The information in the DNA molecule is inherited from one generation to the next generation through reproduction. It means that the hereditary material is the DNA (in some viruses the RNA), more exactly the genes which are the functional units which determine the nature of the features.

- **Mendelian inheritance**

The founder of the modern science of genetics was Johann **Gregor Mendel**. **Mendel's pea** plant experiments established many of the rules of heredity, now referred to as the laws of Mendelian inheritance.

Law of Segregation (the "First Law")

Law of Independent Assortment (the "Second Law")

Law of Dominance (the "Third Law")

- **The codominant inheritance**