Name _____

Gregor Mendel: The Father of Modern Genetics

Gregor Mendel, an Austrian scientist and Augustinian friar, is often regarded as the Father of Modern Genetics. His pioneering work in the 19th century laid the foundation for our understanding of how traits are inherited from one generation to the next.

Gregor Mendel was born on July 20, 1822, in Heinzendorf, Austria (now Hynčice, Czech Republic). Growing up in a farming family, he developed a keen interest in plants and their characteristics. At the age of 21, Mendel joined the St. Thomas Monastery in Brno, Czech Republic, where he pursued his education and scientific interests.

Experiments with Pea Plants

Mendel's groundbreaking experiments involved pea plants. He carefully selected pea varieties with distinct traits, such as flower color, seed shape, and pod color. Mendel crossbred these plants, studying how these traits were inherited in the offspring. He meticulously recorded his observations and data.

Mendel's Laws of Inheritance

Through years of experimentation, Mendel formulated three fundamental laws of inheritance:

- **The Law of Segregation:** Mendel proposed that individuals have two alleles (gene variants) for each trait, one inherited from each parent. These alleles segregate (separate) during the formation of reproductive cells, ensuring that each offspring inherits one allele from each parent.
- **The Law of Independent Assortment:** Mendel observed that the inheritance of one trait (e.g., flower color) was independent of the inheritance of another trait (e.g., seed shape). This law explained how traits are inherited independently of each other.
- **The Law of Dominance:** Mendel discovered that some alleles are dominant and others are recessive. Dominant alleles mask the expression of recessive alleles in heterozygous individuals (those with two different alleles for a trait).

Initial Lack of Recognition

Although Mendel's work was groundbreaking, it initially received little recognition. His research was published in the journal Proceedings of the Natural History Society of Brünn but went largely unnoticed by the scientific community. It wasn't until decades later that scientists rediscovered Mendel's work and recognized its significance.

Legacy and Impact

Gregor Mendel's legacy is immense. His laws of inheritance laid the foundation for the field of genetics, providing a framework for understanding how traits are passed from one generation to another. Mendel's work also bridged the gap between the study of inheritance and the emerging field of modern genetics, including the discovery of DNA's structure and the development of the field of molecular biology.