

# Gregor Johann Mendel

*Mendel, the father of genetics, did not receive credit for his discoveries until after his death. Today, Mendel is recognized as a pioneer for his insights into the mechanics of heredity.*

## Early Childhood



Gregor Mendel

Johann Mendel, the son of a farmer, was born in 1822 in Austria. Mendel loved nature. He worked alongside his father caring for plants in their fruit tree orchard and garden.

Mendel's mother hoped her young son would become a teacher or priest. His father anticipated he would take over the farm. The future would hold many careers for Mendel - teacher, priest, and scientist.

## Educating Mendel

Mendel learned a great deal both in and out of the classroom. Home provided a natural setting to understand plants and the value of hard work. However, Mendel also excelled in school. A teacher recommended that Mendel continue his education.

His father hesitated, but his mother supported the idea. So, eleven-year-old Mendel went to school nearly 13 miles away. Afterward, he went on to high school. Tuition was a strain. To save money, his parents rationed the food they sent him in order to pay for his schooling.

In 1838, Mendel's father was injured and unable to work. Mendel became a tutor to earn money to study at Olmutz Philosophical Institute. In 1841, Mendel's father sold the farm to his daughter's husband. The proceeds were divided among the children. Mendel's younger sister shared her portion to pay for his education.

Mendel met Professor Franz who was both a scientist and monk. After finishing his two years at Olmutz, Mendel wanted to attend the university. Professor Franz suggested joining a monastery in Brunn to help relieve Mendel's financial stress. In 1843, Johann joined the Augustinian monastery, became a priest, and took the name Gregor.

## Two Peas in a Pod

In a monastery setting, one would think that Mendel would be secluded from the outside world. However, monasteries were centers of learning. The monastery suited Mendel well. It was here that he conducted his famous pea experiments. Mendel's approach to explaining his results was unique. He used math to defend what occurred naturally. This was a novel approach in the field of biology.

He started his experiments in 1856 and grew over 24,000 plants during the next eight years. His garden was small to house so many plants and he was forced to hook them up onto anything he could find. He fondly referred to his plants as his "children."

Mendel discovered that traits do not blend, but rather there are dominant and recessive features. His tireless work led to the creation of two important principles—the Law of Segregation and The Law of Independent Assortment.

Mendel's paper was published in 1866, but most ignored it. It was not until 1900 that his work gained respect, as scientists used microscopes to understand cells and chromosomes.

## A kind Mendel

In addition to conducting experiments, Mendel was a teacher. He was unable to become a permanent teacher after failing the teacher's exam several times, but remained a temporary high school teacher for many years.

In 1867, he was elected abbot. As monastery demands increased, he was forced to give up teaching. He gave his last month's teaching pay to the three poorest boys in his class. With an abbot's salary, he also repaid his younger sister by paying for his nephews' education including medical school for two of the boys.

Mendel, an avid weather lover, later became a weather watcher and record keeper. Mendel died in 1884 at the age of 61. The Mendel Museum of Genetics at the Abbey of St. Thomas in Brno in the Czech Republic is a tribute to Mendel and his scientific achievements.

## Reading reflection

1. Why did Mendel join the monastery and how did he benefit from this decision?
2. **Research:** A punnett square is a graphical tool showing all possible combinations of alleles from the parents. Who is responsible for developing the punnett square?
3. **Research:** Mendel was always fascinated by the weather. Even before becoming an abbot, he kept weather records. As a weather watcher he studied temperature, air pressure, wind speed, air moisture, rainfall, and snowfall. He made graphs and charts to study the weather and patterns. Technology has improved greatly since Mendel's time. What types of technology are available today that help meteorologists study and forecast the weather?
4. **Research:** Mendel studied seven traits when performing his pea experiments. List the seven traits he studied.
5. What was unique about Mendel's approach to explain his pea experiment results?