



# Gregor Mendel

## The Father of Genetics

Gregor Mendel was a monk who lived in a region of Austria that is now part of the Czech Republic. He was interested in mathematics and science, but had a passion for gardening. Mendel grew pea plants and through his observation and cross fertilization of these plants he discovered that certain traits, such as seed color, seed shape, flower color and plant height were inherited in specific patterns. He was able to cross plants with specific traits by transferring pollen from the stamen of one plant to the stigma of another. In this manner he could observe and record the traits of the offspring from a specific cross.



Gregor Mendel

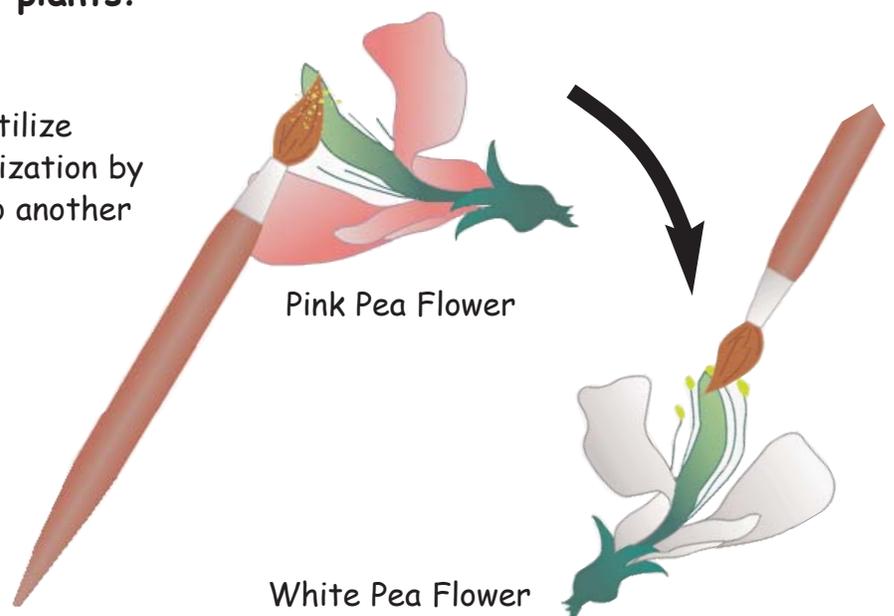
Mendel observed that when he crossed two plants with different traits, the next generation of plants expressed one trait more readily than another. He called these plants hybrids. In hybrids, the trait that is expressed is called a **dominant trait**. The trait that is not expressed is called the **recessive trait**.



The pollen of the pea plant contains the male genes; the egg cells of the plant, located in the ovary, contain the female genes. When pollen lands on the stigma, the pollen tube connects it to an egg. The nucleus of the pollen cell then travels down the tube until it fertilizes the egg to form a zygote. The zygote grows into a new plant, with a full set of DNA from each parent plant.

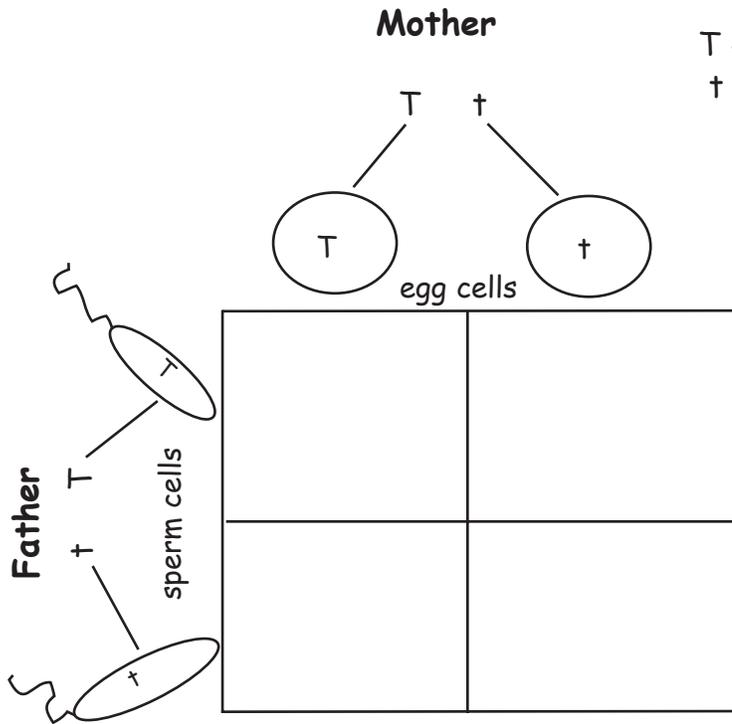
## How did Mendel cross his pea plants?

Instead of letting his pea plants fertilize themselves, Mendel controlled fertilization by transferring pollen from one plant to another using a brush.



# Mendelian Inheritance

Using Punnett Squares to Explore How Genes are Inherited



T - Tongue Roller  
t - Unable to Roll Tongue

Will the children of these people be able to roll their tongues?

