

Mendel Studies Garden Peas

Mendel's father **bred** fruit trees. Mendel helped his father when he was young. That interest stayed with him. He wasn't allowed to teach biology. But he could do research.

It was not possible for Mendel to study fruit trees. So he studied other plants. He decided to research the common pea. He grew them in his garden. They were easy to raise. They had a short breeding time. *Breeding* is another word for reproduction. Best of all, the peas could be **cross-pollinated**. That means that one variety could be bred with another.

Mendel bought seeds from people who lived in the area. Peas were a popular vegetable at that time. Many types were available. Mendel is said to have started with 34 different varieties of pea plants. Over time, he grew and tested at least 28,000 pea plants in his gardens.

Interesting to See

An illustration from the Album Benary (1876–1893) shows some of the characteristics of pea plants that Mendel studied.



Eugenics

Many people oversimplified Mendel's findings. They thought it would be easy to change people's traits. Many countries wanted to improve the majority race that lived in them. They thought they could breed out traits they didn't like. This is called **eugenics** (yoo-JEN-iks). Nazi Germany killed more than 200,000 people with disabilities. Some of these people were in mental institutions. Others had birth defects. In the end, it didn't work. Genetics is very complicated. It cannot be controlled so easily.

Mendel's Laws of Heredity

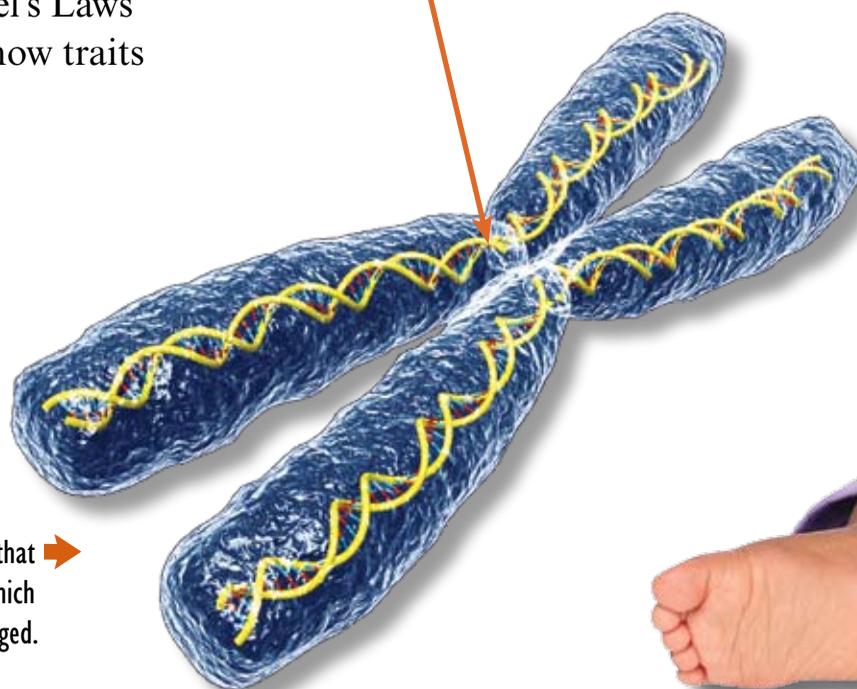
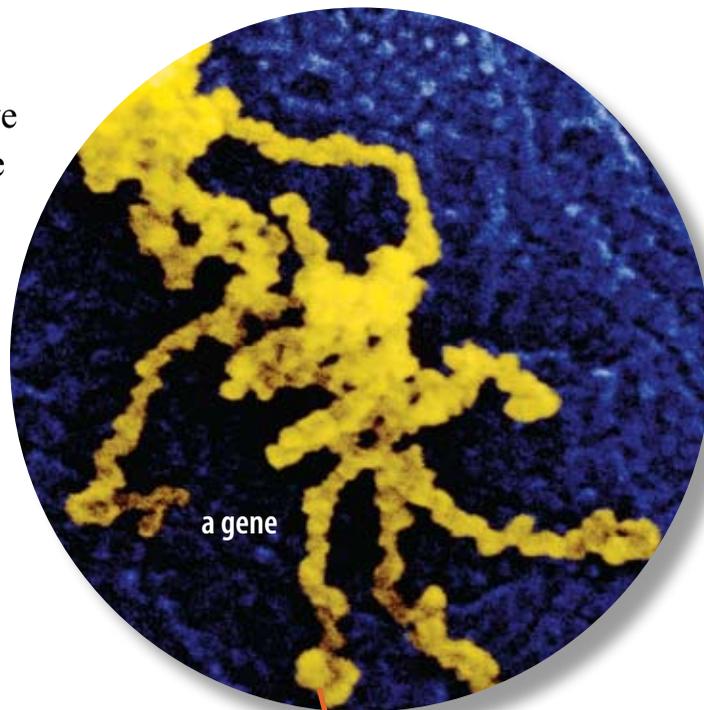
Before Mendel, many people believed in the **theory of blending**. They thought **offspring** would have traits somewhere in between those of their parents. So, if a mother had blue eyes and a father had green eyes, their children would have blue-green eyes. This theory did not explain variations. It also could not explain the differences that occur between species.

Mendel **crossbred**, or mixed, thousands of pea plants. This allowed him to make predictions. These are now called Mendel's Laws of **Heredity**. They explain how traits are passed from generation to generation.

Peas and People

Mendel studied garden peas. Scientists began to see that the concepts he described could be seen in people, too.

This is a chromosome that contains DNA strands on which genes are arranged. →



Eye Color

Eye color is a physical trait. Some parents like to guess what their baby's eye color will be. Eye color is partly determined by the amount of something called *melanin*. It is in the iris of the eye. Brown eyes have a lot of melanin. Blue eyes have very little. Genes control the amount of melanin.



Most of the world's people have dark eyes, ranging from brown to nearly black.



Blue eyes only occur when neither parent gives the baby a brown gene.