Mendel's Legacy

In 1865, Mendel presented his findings in two lectures to the Natural Science Society in Brno. After his presentations, Mendel's work was published as *Experiments on Plant Hybrids* in the Natural Science Society's journal. Although Mendel presented and published his work, it was not fully understood during his lifetime and did not attract much attention. Many thought Mendel demonstrated what was already known about hybrid offspring reverting to their previous traits. Scientists, including Mendel, also did not understand how the experiments with pea plants could be applied to other organisms.

Gregor Mendel died in 1884 at the age of 61 without seeing his work gain recognition. In fact, Mendel's ideas remained mostly unread for nearly thirty-five years after their publication. In the early 1900s three independent scientists each rediscovered Mendel's published article and work. The work of these geneticists, botanists, and biologists built on Mendel's work, some even replicated Mendel's experiments and gathered data consistent with Mendel's data. Eventually Mendel's conclusions were referred to as Mendel's Laws. Scientists have identified a number of traits that follow the pattern of Mendelian inheritance, but not all genetics are as simple as the traits described by Mendel. Even so, Mendel's work is the foundation of understanding genetics and the reason Mendel is viewed as the father of modern genetics.

Summary of Gregor Mendel and Genetics
By: (Student Name)
Period 2

What have I learned about Gregor Mendel?

Gregor Mendel struggled in his life. He was poor, spoke a different language at school, and his father got hurt and died. I have struggles too, like sometimes failing tests in math. Gregor failed tests, too. He kept trying.

What have I learned about "doing science"?

Gregor Mendel took a lot of classes in science. He wanted to know something that others couldn't explain. He decided to use peas to see why peas from plants are different. He wrote down characteristics like if plants were short or tall, round or angled seeds, or green or yellow pods. Gregor grew many pea plants to try to see how the plants had characteristics. He had to take time to grow the plants and care for them so they could grow and make peas. This is science to grow plants. He had to take his time and collect all of the data. Gregor had to know about the peas, then he needed to use math, like ratios, to figure out the pattern in the results.

What did Mendel teach us?

Mendel taught us that there are two things that make characteristics. We call these two possibilities alleles. One part (allele) comes from the father and one part (allele) comes from the mother. Sometimes one allele is hidden because it is recessive and the dominant allele is seen. In the data I looked at, there were more dominant plants than recessive ones. Punnett squares can help us organize the father and mother to see what the children could be. This helps me to predict what could be, but doesn't tell me what will be.

When I crossed my pea plant and flipped the coin, I saw that traits happened randomly. The parent had to have that allele, though. If a parent had two dominant parts, then it could not pass on a recessive allele. The class data for the pea plants showed that different traits had ratios similar to Mendel's data, ranging from 2.4:1 to 2.7:1. [Teacher note: The class shared data and determined ratios for the traits based on the crosses from the plants in the class.] Our data in the class supports Mendel's legacy. I think if we tried as many plants as he did, then our results would be like his. We could also try growing plants instead of using ones we created.

Mendel studied plants, but we tried using goats. The data from our goats worked, too. The traits we used for the goats had two alleles or parts, one from each parent. The Punnett square helped us predict what the kids would look like. Mendel learned from plants, but we can use it for animals, too.

What else do you want to know?

I want to know if all characteristics work the same way. Also, I want to know how the children get one allele from each parent.