Mendelian Genetics

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Introduction

People have always wondered since the beginning of time how traits are passed from one generation to the next. Scientists, philosophers, and even lay people have noticed that some physical traits are transferred from the parrent to its offspring, while other traits seem to disappear. Gregor Mendel also noticed and observed these mysteries, but unlike others, he added his love of mathematics and science. Through his experiments, he found patterns to the traits in the parents and the offspring. This experiment is designed to use and test the rules and patterns that Mendel established and that modern day biologists accept as fact.

Mendel conducted his experiments by keeping tables recording the traits observed of all the pea plants he used in his experiment. Mendel wanted to be able to control which plants bred with each other, but since pea plants would self pollinate and change his results, he had to stop them from doing so. He accomplished this by removing the male portions of some plants and the female portions of the other plants. By making each plant unable to self pollinate, he removed the error that he could not control which plants bread togeather. Then, he cross pollinated plants that had opposite traits (green vs. yellow seeds, axis vs terminal stems). What Mendel found and recorded was that all of one trait disappeared in the F1 generation (first generation of offspring), leaving only the other trait shown. Mendel did not just stop there, but he also cross pollinated the F1 generation, giving the F2 generation, to see if the traits were destroyed, or if they were still in the plants.

When Gregor Mendel cross pollinated the F1 generation to produce the F2 generation, he discovered that the traits that had appeared to be gone had returned. After many trials of cross pollination and planting over a span of eight years, Mendel established the Principles of Dominance, Segregation, and Probability.

The only way that all of the plants in the F1 generation could have the same *phenotype*, or physical characteristic shown without any sign of the other possible trait requires the understanding of *alleles*. Alleles are different forms of a gene. When two alleles are mixed togeather, as in the case of Mendel's F1 generation, one allele become dominant over the other. This dominant gene is used to create the trait that the plant shows. This is the reason why in the F1 generation, only one

of the traits was observed; the dominant trait.

When the plants were

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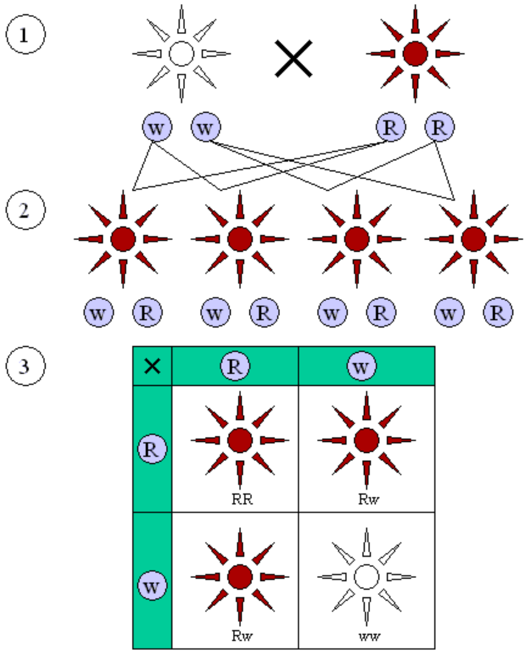
Random Text. Random Text.



Methods

Random Text. Random Text.

Results