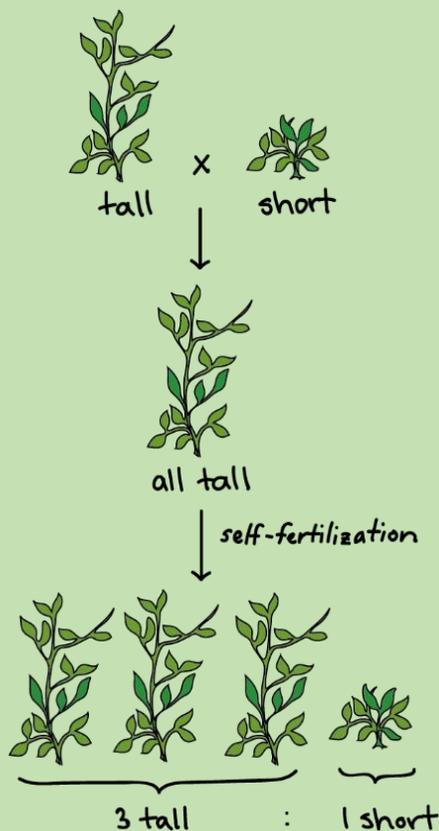


Gregor Mendel's Pea Plant Experiment

WHAT WAS THE EXPERIMENT?

In this famous experiment, Mendel purposefully cross-pollinated pea plants based on their different features to make important discoveries on how traits are inherited between generations. Seven traits were used by Mendel, including smooth or wrinkled ripe seeds, yellow or green seed albumen, purple or white flower, tall or dwarf stem length, and others.



HOW DID HE PERFORM THE EXPERIMENT?

His first step was to establish pea plant populations with two different features, such as tall vs. short height, breeding them until they always produced offspring identical to the parent. After this, he then bred them with each other to observe how the offspring inherited the traits.

This first generation found that all the offspring shared one feature, which he called the dominant trait, and did not display the other type, the recessive trait. In this example, they were all tall.

His next step in his experiment was to allow this generation that displayed only the dominant trait to self-fertilize, creating a new generation that displayed the hidden trait.

The second generation that came from the first-generation self-fertilizing had the recessive trait reappear in about 1 in 4 of the plants, with there being a 3:1 ratio for plants that showed the dominant trait for every plant that showed the recessive trait.

WHAT WERE THE FINDINGS?

Over the course of his experiments, Mendel made three important discoveries:

1. The Law of Segregation: offspring acquire one hereditary factor from each parent
2. The Law of Independent Assortment: different traits have an equal opportunity of occurring together (this was later shown to not entirely be true)
3. The Law of Dominance: offspring will inherit the dominant trait, and can only inherit the recessive trait if they inherit both recessive factors