

Mendel's Experiments**Three key choices:**

- Control over breeding
- Use of pure bred plants
- Observation of "either/or" traits that appeared in two forms

Pea plant characteristics:

- Pea Shape
- Pea Color
- Flower Color
- Pod Shape
- Pod Color
- Flower Position
- Plant Height

Cross: The mating of two organisms; Mendel mated purebred pea plants with purple flowers with pure bred plants.

- **P:** The parental generation; Mendel used purebred plants for the P generation; for example, he crossed purebred plants with purple flowers with purebred plants with white flowers
- **F₁:** The first generation of offspring resulting from the parental cross; for example, Mendel's F₁ plants all had purple flowers; Mendel allowed this generation to self-pollinate.
- **F₂:** The second generation; the result of the self-pollination of F₁ plants; for example, in Mendel's F₂ generation, 3/4 had purple flowers and 1/4 had white flowers

Results:

For all seven traits, Mendel found that approximately 3/4 of F₂ offspring had one trait and 1/4 of the offspring had the other trait

Conclusions:

- traits are inherited as discrete units (genes)

Law of Segregation

—inherit two copies of each gene, donate only one copy of each gene in gametes.