

Mendel's Work

- ▶ **Gregor Mendel** was a Austrian **monk** who trained in mathematics and natural history at the University of Vienna.
- ▶ He first began to track patterns of **inheritance** in **pea plants** in the mid 19th century. He published his results and they become a foundation for further genetic investigations.

Mendel's Experiment

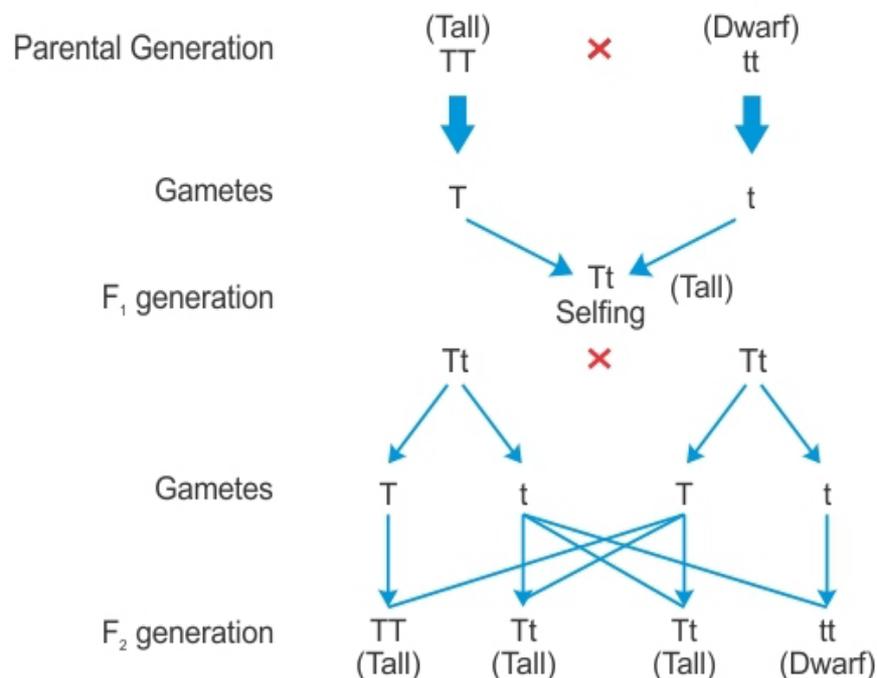
- ▶ Mendel's selected pea plant for his experiment to show the genetic variation between generation
- ▶ Mendel's did a Monohybrid cross (**one** characteristic controlled by **one** gene with **two** alleles).
- ▶ One of his investigations looked at the **inheritance of height**.

Gene: Plant height

Alleles: Tall = T And Small = t

- ▶ He crossed a **tall pea plant (TT)** with a dwarf pea plant (tt)
- ▶ He found that all the offspring of **F1 Generation** were **tall (Tt)**.
- ▶ In **F2 generation** in which he did **self cross Tt with Tt** the phenotypic ratio of obtained is **3:1 (3 tall : 1short)**.

Whereas, the **genotypic ratio is 1:2:1 (1TT : 2Tt: 1tt)**. As shown in diagram



Conclusion:

- He concluded that **height** is determined by '**hereditary units**' passed on from the parents and that the unit for **tall** plants was **dominant** over the unit for **dwarf** plants.

Took time for understanding Mendel's Work

- **Scientists** of the day struggled to understand **Mendel's** work because it was very **new** and they had no knowledge of the subject. It wasn't until after his death that his work was recognised.
- At the start of the 20th century, scientists noticed that **chromosomes** behaved in a similar way to **Mendel's 'hereditary units'**. This led to the conclusion that **Mendel's 'hereditary units'** (which we now call **genes**) are found on the **chromosomes**.
- In the mid 20th century, scientists determined the structure of **DNA** which further expanded our knowledge of how **genes** work.