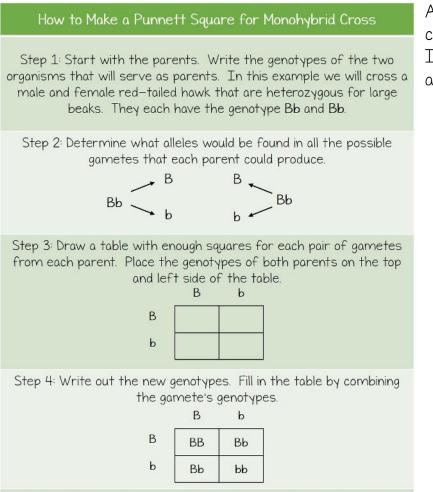
Genetics - The Science of Heredity

Section 3: Punnett Squares

Reginald Punnett created **Punnett squares** to predict the proportions of possible genotypes in offspring. Genotype refers to the genetic makeup of an organism. An organism's phenotype refers to its physical traits.

A Punnett square is a way to visually highlight the four possible combinations of gametes and their offspring in an F_2 generation. Organisms with identical alleles for a particular gene (TT, tt) are **homozygous**, whereas organisms with different alleles for the same gene (Tt) are **heterozygous**.



Step 5: Figure out the results by determining the genotype and phenotype of each offspring and calculate the percentage of each. In this example, 34 of the chicks would have large beaks, but only 1/2 would be heterozygous for this trait (Bb).

Review:

- 1. What is the purpose of a Punnett square?
- 2. Compare homozygous and heterozygous.

A Punnett square can also be created for **dihybrid** crosses. It would be four boxes wide and four boxes tall.