Genetics Part V

- The combination of genes that an organism inherits makes them show specific traits
    - The specific combination of alleles is called the **genotype**
        - TT is a **genotype** for a tall pea plant
    - The physical trait that is shown in the organism is called the **phenotype**
        - Being **tall** is the phenotype
- Dominant alleles will always show up in the phenotype if they are present
    - Both TT and Tt will grow a tall pea plant
- Recessive alleles will only show up in the phenotype if the dominant is not there
    - Only tt will grow short pea plants
- When studying a family, scientists use special terms for each generation
    - The parent generation (the first one studied) are called **'P'**
    - The first set of offspring are called the "**F1**"
    - The offspring from the F1 are called the "**F2**"
    - The offspring from the F2 are called the "**F3**"
- Scientists use special terms to describe what types of offspring an organism will produce
    - **Purebred-**organisms will always produce offspring with the same phenotype as the parents
    - **Hybrid-**organisms will have offspring that may have a different phenotype as the parents
- Not all traits are strictly dominant and recessive and there are 3 specific types of this:
    - **Co-Dominance-**these traits have different forms of alleles that are both dominant
        - Blood Type- A and B are dominant, O is recessive
    - **Incomplete Dominance-**neither trait is dominant and the result is an average phenotype
        - The alleles for the flowers of snapdragons are Red or White
        - If a plant has both a Red and a White allele, the plant will have Pink flowers
    - **Sex-Linked**
        - Gender in humans is determined by the combination of 23rd chromosome pair
        - Girls have 2 X chromosomes and boys have 1 X and 1 Y chromosome
        - Sex-linked traits are recessive alleles found on the X chromosome. The phenotypes appear more often in boys than in girls.
            - Hemophilia and Colorblindness are examples of sex-linked traits