Question: Why do some traits exhibit a large number of phenotypes?

Complex Patters of Inheritance

Not all traits are as simple as Mendel thought….

Incomplete dominance: When neither the allele of the parents is completely dominant. The phenotype of heterozygous off spring is a mix of the parents.

Example: Red Snap Dragons x White snap Dragons = Pink Snapdragons

Codominance: Both Alleles show equally (new phenotype)

Example: Black Chicken x white chicken = speckled chicken

Multiple Alleles: There are more than 2 two alleles for a genetic trait.

Example: Rabbit Fur Colour – 4 possible fur colours.

Humans have 23 pairs of chromosomes. 22 pairs are **Homologous pairs** and are called autosomes. The 23d pairs is call the **sex chromosomes** which are indicated by X for famles and Y FOR MALES

XX = Female XY = Male

Sex-linked traits – traits controlled by genes located on the sex chromosomes.

Example: Colour Blindness

Polygenic inheritance: Inheritance pattern of a trait that is controlled by two or more genes.

Example: Skin colour and hieght

** Note: Nutrition, light, chemicals, and infectious agents such as bacteria, fungi, parasites and viruses can all influence how genes are expressed.