

Genetic Code	
Chromosomes	structures made of DNA molecules that contain the genes.
Genes	sections of chromosomes/DNA that code for our characteristics
Alleles	alternatives forms of a gene
Trait	a genetically determined characteristic or condition
Homologous Pair	a pair of 2 chromosomes: 1 from the mother and 1 from the father
Organism	an individual animal, plant, or single-celled life form.
Genotype	the combination of alleles that an organism has
Phenotypes	the characteristic produced by the genotype
Dominant Allele	always expressed (shows the trait) if present (eg. B)
Recessive Allele	only expressed when the dominant allele is absent (eg. b)
Homozygous	having two identical alleles (eg. bb)
Heterozygous	having two different alleles (eg. Bb)

DNA carries the genetic information in a cell. A gene and an allele are both made of DNA. A gene is a length of DNA that codes for a particular characteristic, whereas an allele is the alternative form of a gene containing a different base sequence. A gene for a characteristic consists of two alleles.

DNA Structure	
DNA	genetic material stored in the nucleus of cells
Nucleus	contains the chromosomes
DNA Structure	double helix which consists of nucleotide subunits
See diagram of DNA structure here:	https://en.wikipedia.org/wiki/File:DNA-structure-and-bases.png
Complementary Base Pairing	there are four bases, two pairs:
Adenine (A)	Thymine (T)
Guanine (G)	Cytosine (C)
Remember adenine pairs with thymine as 'Apples grow on Trees'.	
Remember guanine pairs with cytosine as 'Carrots grow in the Ground'.	

Variation	
Why is variation important?	
-Variation increases the chance of survival of a species if there is a change in the environmental pressure.	
-Without variation in a species any sudden environmental change can mean that no individual has a phenotype that allows it to survive, causing the species to become extinct.	

Pure Breeding	
An organism that always passes down certain phenotypic traits to its offspring of many generations. The organisms's parents and ancestors all belong to the same breed.	
Pure bred genotypes are always homozygous.	
genotype of parent 1: PP, genotype of parent 2: PP	

Pure Breeding (cont)	
genotypic ratio of the offspring: 4PP, 0pp, 0Pp	
phenotypic ratio of the offspring: 4purple, 0white	
In pigs, curly tails are dominant. To work out if a curly-tailed pig is homozygous dominant or heterozygous for this trait, mate the curly-tailed pig with a straight-tailed pig. We know the straight-tailed pig's genotype is tt. If any offspring have straight tails we know the curly-tailed pig is heterozygous because they must be carrying the recessive allele for a recessive offspring to be produced. If no offspring have straight tails it is likely that the curly-tailed pig is TT.	

Meiosis	
Haploid	a cell that contains a single set of chromosomes.
Meiosis	a type of cell division that produces 4 gametes (sex cells-sperm and egg) each with only half the number of chromosomes (23).
There are two main ways meiosis produces variation:	
1. Crossing Over	
2. Independent Assortment	
These steps are important because they mix up allele combinations, causing variation.	

