Alternative forms of a gene	Form of producing offspring without involving sex producing identical offspring	Area where chromatids remain joined until nuclear division	Involved in cell division, in animals it produces spindle fibres
Allele	**Asexual**	**Centromere**	**Centriole**
The points on chromatids where the homologous chromosomes cross	The two strands of a replicated chromosome	Thread-like structure within a cell nucleus made of DNA that contains genes	Exchanging of parts of chromatids during meiosis
Chiasmata	**Chromatids**	**Chromosomes**	**Crossing-over**
Cell containing double set of chromosomes (2n)	Deoxyribonucleic acid, makes up chromosomes and codes for proteins	An allele that if present is always expressed phenotypically	The change in the allele frequency of a population
Diploid	**DNA**	**Dominant**	**Evolution**
Change in allele frequencies when a new population arises from only a few colonising individuals	Sex cells – egg or sperm	The unit of inheritance, a length of DNA that codes for a protein	Loss or change in the frequency of an allele in a small population due to chance alone
Founder effect	**Gametes**	**Gene**	**Genetic drift**

Altering the genetic make-up of an organism	Genetic make-up of an individual eg. Bb	Having only one set of chromosomes, all chromosomes different (n)	Having different forms of an allele eg. Bb
Genetic engineering	**Genotype**	**Haploid**	**Heterozygous**
Pairs of chromosomes having the same genes	Having the same alleles eg. BB or bb	Each homologous pair of chromosomes are sorted independently of the other pairs during meiosis which greatly increases variation	Cell division that produces sex cells
Homologous pairs	**Homozygous**	**Independent assortment**	**Meiosis**
Cell division that produces cells exactly the same as the original cell	Alternation of the sequence of bases on the DNA. This produces new genetic information and maybe new phenotypes	Building blocks of DNA, made up of a phosphate, sugar and base	Physical expressing of gene or genes
Mitosis	**Mutation**	**Nucleotide**	**Phenotype**
If present the gene/allele is only expressed phenotypically when homozygous	The gametes produced as a result of crossing-over	Chromosomes involved in the determination of sex of the organism	Genes that are located on the sex chromosome, usually the X
Recessive	**Recombinant**	**Sex chromosomes**	**Sex linked**

Mating involving an unknown genotype with the homozygous recessive eg hh	Fertilised egg	During cell division chromosomes are not pulled correctly to the poles resulting in incorrect chromosome numbers	A map of sorted chromosomes used to detect non disjunction or sex of the child
Test cross	**Zygote**	**Non disjunction**	**karyogram**
The total alleles within a population	The separation or segregation of the homologous pairs during metaphase I, so the gametes only have one of each pair	The selection of individuals based on their fitness to survive and then breed	A sex linked disease where the blood cells are unable to clot
Gene pool	**Chromosome segregation**	**Natural selection**	**Haemophilia**
Offspring show a genotype where neither allele is dominant eg. Pink flowers	The passing on of genetic information from one generation to the next	Offspring show a genotype where both alleles are expressed eg. Roan cattle	A gene that if lacking results in the organism not existing. Ratio of punnet square is 2:1 not the normal 3:1
Incomplete dominance	**Inheritance**	**Co-dominance**	**Lethal gene**
An allele where more than two forms can fit at a locus on a chromosome eg A, B,AB and O blood types	In humans XX = female XY = male	Another word for a genetic feature	Recovery of population after a catastrophic event. After squashing through bottleneck the population has less variation
Multiple alleles	**Sex determination**	**Trait**	**Bottleneck effect**