

Name: _____

Animal Genetics Reference Sheet

Use this sheet as a reference if you come across terminology you do not recognize.

Allele:

One of one or more possible forms of a gene, each affecting the inherited trait somewhat differently.

Autosomal:

Of or relating to any chromosome other than the sex chromosomes; a characteristic inherited on any gene pair other than the sex chromosomes.

Chromosome Pair (Homologous pair):

A pair of chromosomes that are similar in form and function, but may vary in genetic composition due to allelic differences at matching loci on the pair; typically have the same genes but may have different alleles for those genes.

Dominant:

A genetic factor that will be expressed in the phenotype even when only one copy is present (heterozygous or single-factor). e.g. 'A' is dominant over 'a' because the phenotypes of AA and Aa are the same.

Double-Factor:

Two identical "copies" for a gene are present in the gene pair (one copy per chromosome); abbreviated as DF or DBF and sometimes used interchangeably with "homozygous" when referring to autosomal traits or sex-linked traits in a male bird since male birds are ZZ.

Genotype:

The genetic makeup of an organism, including those traits which are not physically expressed (such as a finch who is split for white breast or split for blue). Letter symbols are used for genotypes like AA, Aa, or aa.

Heterozygous:

Having two different alleles for a given trait at corresponding loci on a chromosome pair. See also "split"

Homozygous:

Having identical genes at the corresponding loci on a chromosome pair. Usually applied to autosomal chromosomes, but can also be used to describe the sex-linked inheritance in male birds. Usually interchangeable with "double-factor."

Incomplete dominance:

A genetic factor that will be "partially expressed" due to the sharing of its controlling influence over the phenotypic trait with the other genetic factors which are present. e.g. In flowers, red is incompletely dominant with white, so any flower containing alleles for both red and white will appear neither red nor white, but a shade of pink.

Locus (*pl.* loci):

The position of a particular gene (or its allele) on a chromosome; chromosomal pairs have matching loci (plural of locus).

Phenotype:

The expression of a genotype in the appearance of an organism; the observed physical trait like color.

Recessive:

A genetic character or factor that will only be phenotypically expressed when present on both loci of a homologous pair (homozygous or double factor) when no dominant is present. e.g. 'a' is recessive to 'A' because the phenotype for Aa is like AA and not like aa.

Sex-linked:

Those genetic characteristics that are present on a sex chromosome; in this case, the male's Z chromosome (female's W chromosome determines sex only and not color). May be inherited as single or double factor in males, and only single factor in females.

Single-factor:

Only one gene is present for a particular characteristic in a homologous pair. Abbreviated SF and occasionally used interchangeably with heterozygous with reference to autosomal traits.

Split:

Usually used to describe those traits which are "hidden" (recessive) in a heterozygous situation. Abbreviated as "/" and usually used to refer to autosomal traits.

NOTE: Male birds have a ZZ sex chromosome pair (similar to female humans that have XX) and female birds have a ZW pair (similar to male humans that have XY). Like the X, the Z does not carry the same genes as the W. There are no alleles for color on the W.

