**Inherited Change**

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|  | Term | Explanation |
| 1 | Gene | Section of DNA on a chromosome that controls a feature by coding for formation of one or more specific polypeptides or a functional RNA (including rRNA and tRNA). |
| 2 | Locus | The specific linear position of a particular gene on a certain chromosome |
| 3 | Alleles | Alternative forms of a particular gene with different base sequences, and therefore different codes |
| 4 | Homozygous | Situation or organism in which paired alleles are the same |
| 5 | Heterozygous | Situation of organism in which paired alleles are different |
| 6 | Dominant | An allele that expresses itself in the phenotype in heterozygous organisms |
| 7 | Recessive | An allele that does not express itself in the phenotype in heterozygous organisms |
| 8 | Co-dominant | Alleles which both contribute to the phenotype (i.e. produce a blended effect) in the heterozygous condition |
| 9 | Multiple alleles | If there are more than two alleles for each gene in the gene pool. NB. Only 2 chromosomes in a homologous pair so only 2 of the three or more alleles can be present in a single organism |
| 10 | Pure-breeding strain | Group of organisms in which a certain characteristic is unaltered for generations, indicating that organisms are homozygous for that feature |
| 11 | Monohybrid | Inheritance of a single pair of alleles |
| 12 | Dihybrid | Inheritance of two pairs of alleles |
| 13 | Haploid (n) | Cell or nucleus containing single, unpaired chromosomes |
| 14 | Diploid (2n) | Cell or nucleus containing pairs of homologous chromosomes |
| 15 | Phenotype | The observable or biochemical characteristics of an organism, resulting from both its genotype and the effects of the environment |
| 16 | Genotype | The combination of alleles present within the cells of an organism |
| 17 | Heritable | Features determined by genes (rather than the environment) and therefore passed on to offspring |
| 18 | Homologous chromosomes | A pair of chromosomes, one maternal and one paternal, that have the same gene loci and therefore determine the same features. They are not necessarily identical as may have different alleles. They are capable of pairing during meiosis. |
| 19 | Ratio | A measure of the relative size of two classes that is expressed as a proportion. |
| 20 | Sex linked | Any gene that is carried on either the X or Y chromosome. |
| 21 | Autosomal linkage | The situation where two or more genes are carried on the same autosome. |
| 22 | Autosome | A chromosome which is not a sex chromosome |
| 23 | Epistasis | This arises when the allele of one gene affects or masks the expression of another in the phenotype. |

**Evolution within populations**

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| 24 | Hardy Weinberg Principle | The principle predicts that the proportion of dominant and recessive alleles of any gene in a population remains the same from one generation to next provided five conditions: No mutations, population is isolated, no natural selection (alleles are equally likely to be passed on), large population, mating is random |
| 25 | Gene Pool | all the different *alleles* of all the genes of all the individuals in a population at any one time |
| 26 | Allelic frequency | the number of times an allele occurs within the gene pool in a population, relative to all others at same locus |
| 27 | Discontinuous variation | Distinct forms with no intermediate types. |
| 28 | Continuous variation | No distinct categories – likely to obtain a bell-shaped curve known as a normal distribution curve. |
| 29 | Natural selection | Darwin’s theory to explain the mechanism of evolution. The process by which organisms better adapted to their environment survive and reproduce and pass on their advantageous alleles to the their offspring, whilst those less well adapted fail to do so. |
| 30 | Directional selection | Favours one extreme of the range of characteristics and the other extreme is selected against – shift in population curve |
| 31 | Stabilising selection | Favours the mean of the distribution because the extremes are at a selective disadvantage – frequency of mean phenotype increases |
| 32 | Disruptive selection | Favours both extremes of a distribution, selection occurs against the mean – results in bimodal distribution. |
| 33 | Genetic Drift | Causes random changes in allele frequencies in a population due solely to chance factors. |
| 34 | Genetic bottleneck | Severe reduction in population size |
| 35 | Founder effect | Isolation of a small group of individuals by migration or a physical barrier. |
| 36 | Speciation | Evolution of new species from existing ones. Process by which reproductive isolation occurs between two populations so that they evolve along their own separate paths into 2 separate species with different allele frequencies. |
| 37 | Species | A group of organisms that have a common ancestry and so share the same genes and are capable of breeding together to produce fertile offspring - are reproductively separated from other species. |
| 38 | Allopatric speciation | occurs when populations occupy different environments – they are geographically separated. |
| 39 | Sympatric speciation | occurs when populations are reproductively isolated within the same environment. |

**Populations**

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| 40 | Ecosystem | Self-contained unit made up of the biotic and abiotic factors in an area |
| 41 | Population | A group of organisms of the same species occupying a particular space at a particular time that can potentially interbreed. |
| 42 | Community | The organisms of all species that live in the same area |
| 43 | Habitat | The place where an organism normally lives |
| 44 | Niche | All the conditions and resources required for an organism to survive and reproduce (its ‘role’) |
| 45 | Random Sampling | Sampling a population to eliminate bias e.g. grid square and co-ordinates |
| 46 | Systematic Sampling | Regular sampling across an area e.g. along a straight line transect |
| 47 | Mark-Release-Recapture | Method of estimating population size of animals (number in first sample x number in second sample) / marked animals in second sample |
| 48 | Abiotic Factors | Concerned with the non-living part of the environment |
| 49 | Biotic Factors | Concerned with the living organisms in the environment |
| 50 | Interspecific Competition | Competition between organisms of different species |
| 51 | Intraspecific Competition | Competition between organisms of the same species |
| 52 | Succession | The changes in an ecosystem, over time, of the species that occupy it |
| 53 | Pioneer Species | A species that can colonise bare rock or ground |
| 54 | Climax Community | The stable, final, community that exists in a balanced equilibrium that makes up the final stage of succession. Abiotic factors are more or less constant over time. |
| 55 | Conservation | Management of the Earth’s natural resources in such a way that maximum use can be made of them in the future |