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| **DNA** | |
| DNA | Deoxyribose nucleic acid. The chemical that all genetic material is made up from. |
| chromosome | Chromosomes are the long strands of DNA found in the nucleus of cells. |
| gene | A short section of DNA that codes for a protein and found on a chromosome. |
| allele | Different versions of the same gene. |
| genome | The entire set of genetic material in an organism. |

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| **Reproduction** | |
| gamete | These are the sex cells (e.g. sperm and egg in animals) produced by meiosis |
| sexual reproduction | Reproduction in which gametes from two parents combine. |
| asexual reproduction | The production of genetically identical offspring from a single parent. |
| fertilisation | Fusing of a male sex cell with a female sex cell. |
| meiosis | Cell division that produces gametes in sexually reproducing organisms |
| Stages in meiosis | * Genetic material is duplicated. * Chromosomes arranged in pairs in the centre of cell. * First division separates the pairs of chromosomes. * Chromosomes line up in the centre of the cell. * Second division pulls apart the chromosome arms. * 4 gametes produced, each with a single set of chromosomes. |
| Differences between mitosis and meiosis | * Meiosis produces 4 daughter cells not 2. * Meiosis produces genetically different daughter cells. * Meiosis produces daughter cells that half the amount of DNA compared to the parent cell. * Meiosis involves 2 divisions. |

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| **Sex determination** | |
| Sex chromosomes | XX in females  XY in males |

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| **Genetic diagrams** | |
| dominant | A dominant allele is the one that determines the phenotype even if there is only 1 copy present. |
| recessive | A recessive allele only affects the phenotype if 2 copies are present. |
| homozygous | Both alleles for a gene are the same. |
| heterozygous | The alleles for a gene are different. |
| genotype | The combination of alleles that you have. |
| phenotype | The characteristics that you have as a result of your genotype. |
| Punnett square | A genetic diagram used to show possible gamete combinations. |

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| **Genetic disorders** | |
| Cystic fibrosis | A genetic disorder caused by a recessive allele. Sufferers produce lots of thick, sticky mucus in air passages and the pancreas. |
| Polydactyly | A genetic disorder caused by a dominant allele. Sufferers have extra fingers or toes. |
| Embryo screening | A method of determining whether an embryo has genetic disorders. |
| Reasons for embryo screening | To prevent suffering.  Treating disorders costs money. |
| Reasons against embryo screening | It implies that people with genetic problems are 'undesirable'.  Screening is expensive.  It might lead to ‘designer babies’. |