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| **Year:** | | **10** | | **Unit:** | **Genetics** | |
| **Subject:** | | **SCIENCE** | | **Assessment:** | **Exam** | |
| **LG** | **LEARNING GOALS and SUCCESS CRITERIA** | | | | | **Where is this in my notebook?** |
| **1**  4  Lessons | **SC1** | | I can **define** the following terms: DNA, chromosome, gene, trait, heredity, karyotype | | |  |
| **SC2** | | I can **explain** the double helical structure of DNA and **construct** a model | | |  |
| **SC3** | | I can **describe** the role of DNA in living things in terms of a “blueprint” for life and inheritance of characteristics. | | |  |
| **LG1** | | ***Students will be able to describe the structure and role of DNA as the blueprint for controlling the characteristics of organisms*** | | |  |
| **2**  1  Lesson | **SC4** | | I can **define** the following terms: gametes, sex cells, sperm, ova, fertilisation, zygote, embryo, mitosis, meiosis | | |  |
| **SC5** | | I can **explain** the role of mitosis and meiosis and **describe** how genetic information is passed on to offspring from both parents by meiosis and fertilisation and how this results in variation in offspring | | |  |
| **LG2** | | ***Students will be able to recognise that genetic information passed on to offspring is from both parents by meiosis and fertilisation*** | | |  |
| **3**  5  Lessons | **SC6** | | I can **define** the following: punnet square, genotype, phenotype, recessive allele, dominant allele, offspring, homozygous, purebred, heterozygous, monohybrid | | |  |
| **SC7** | | I can **use** punnet squares for monohybrid crosses to **predict** genotypes and phenotypes of offspring | | |  |
| **SC8** | | I can **use** punnet squares for sex-linked crosses to **predict** genotypes and phenotypes of offspring | | |  |
| **SC9** | | I can **use** a pedigree chart to **represent** patterns of inheritance | | |  |
| **SC10** | | I can **analyse** inheritance patterns to **predict** genotypes and phenotypes of parents and offspring | | |  |
| **LG3** | | ***Students will be able to predict simple ratios and represent patterns of inheritance of a simple dominant/recessive characteristic and genes that are sex-linked*** | | |  |
| **4**  1  Lessons | **SC11** | | I can **define** mutation and **explain** the difference betweengermline and somatic mutations | | |  |
| **SC12** | | I can **outline** at least 2 factors that cause mutations and the effect these may have on living things | | |  |
| **LG4** | | ***Students will understand that mutations are changes in DNA or chromosomes and the factors that contribute to causing mutations*** | | |  |
| **5**  2  Lessons | **SC13** | | I can **define** the following: evolution, natural selection, species, variation, isolation, biodiversity | | |  |
| **SC14** | | I can **outline** processes involved in natural selection including variation, isolation and selection | | |  |
| **SC15** | | I can **describe** biodiversity as a function of evolution (natural selection) | | |  |
| **SC16** | | I can **describe** and **explain** evidence ofchanges in a particular population as a result of a specified selection pressure and natural selection in nature; and in artificial selection in breeding desired characteristics | | |  |
| **SC17** | | I can **explain** that genetic characteristics relate to survival and reproductive rates | | |  |
| **LG5** | | ***Students will understand the theory of evolution by natural selection explains the diversity of living things*** | | |  |
| **6**  2 Lessons | **SC18** | | I can **define** the following: evidence, fossil record, homologous, geographical distribution | | |  |
| **SC19** | | I can **interpret** and **analyse** evidence for evolution – including the fossil record, DNA profile, embryonic and anatomical similarities, and geographical distribution of species | | |  |
| **LG6** | | ***Students understand that evidence for evolution includes the fossil record, chemical and anatomical similarities, and geographical distribution of species*** | | |  |