|  |
| --- |
|  |
| **Year:** | **10** | **Unit:**  | **Genetics** |
| **Subject:** | **SCIENCE** | **Assessment:**  | **Exam** |
| **LG** | **LEARNING GOALS and SUCCESS CRITERIA** | **Where is this in my notebook?** |
| **1**4Lessons | **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**1Lesson | **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**5Lessons | **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**1Lessons | **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**2Lessons | **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*** |  |