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| **YEAR \_\_\_\_ 2023-2024\_\_\_\_\_ TERM: Spring 1/2 (Y11)**  **‘An ambitious curriculum that meets the needs of all’**  **Medium Term Planning - Topic: Classification and Evolution** | |
| **Curriculum Intent** | **In addition to working further on objectives from KS3 Evolution and KS4 Topics 3 Environment, 5 DNA & Inheritance, 6 Cell division, 8 Biodiversity, 12 Reproduction & Genetic Engineering, pupils will be taught, following National Curriculum guidelines, the following in this topic:**   * genetic variation in populations of a species * the process of natural selection leading to evolution * the evidence for evolution * developments in biology affecting classification * the importance of selective breeding of plants and animals in agriculture * the uses of modern biotechnology including gene technology; some of the practical and ethical considerations of modern biotechnology |
| **Skills/National Curriculum Links** |
| **Spiritual, moral, social, and cultural development** | **SMSC:** The theory of evolution by natural selection  **PSHE/British Values:**  The theory of evolution by natural selection, resistance to the development of evolutionary theory  **Skills Builder:** |
| **Numeracy** | Skills developed in this topic include order of magnitude calculations, interpretation of phylogenetic (evolutionary) trees, |
| **Literacy** | **Vocabulary Tier 2:** evolution, selection, selective breeding, bacteria, extinction, fossil  **Vocabulary Tier 3:** natural selection, mutation, extremophile, classification, kingdom, domain, antibiotic resistance, *Bio only: speciation,*  **Reading:** Students are given opportunity to develop their skills in specified tasks that develop disciplinary literacy. Throughout the GCSE Biology and Combined Science course they develop their understanding of the requirements of exam questions and the key terminology in questions. In addition, they read practical methodology and translate this to actions in laboratory tasks.  **Writing:** Students construct answers independently and through class teaching. Their answers range from single word answers to the planning and writing of 6-mark “extended writing” tasks that require linking of multiple concepts from a topic. These often develop students’ ability to construct written evaluations of contrasting situations, where the use of comparative connectives are required.  **Oracy:** Students are regularly given the opportunity to practice their scientific vocabulary in class discussion, through choral response and in giving instruction to others during practical activities. |
| **Becoming future ready** | **Careers/Employability:** Opportunity for development of communication, teamwork, and manual dexterity in the completion of practical activities |
| **Adaptation** | Throughout this topic, quality first teaching will provide differentiation:  **By product:** Assessments have opportunities for students to achieve all grades, with structured questions and opportunities for development of extended writing for all abilities.  **By resource:** Booklets are differentiated as appropriate, with ‘foundation’ booklets produced in conjunction with class teachers for students who would benefit from additional scaffolding of resources in order to achieve their potential.  **By Intervention**: by providing different levels of supervision and support, including the specific deployment of teaching assistants within lessons.  **By Progressive Questioning:** exploring pupils’ understanding through interactive dialogue.  **By Grouping:** according to prior attainment, gender, social preference.  **By Task:**Pupils should be involved in the identification of targets which are meaningful to them and in the selection of an appropriate task from the given range.  **By Offering Optional Activities:** In class or as homework, to extend learning.  This QFT/SEND provision will be explicit within the lesson-by-lesson schemes of work. |
| **QFT/SEND Provision** |
| **Implementation**  **Curriculum Delivery** | To be able to:  6.3.4.a I can describe some sources of evidence for evolution  6.3.5.a I can describe what fossils are, how they are formed and what we can learn from them  6.3.5.b I can explain why there are few traces of the early life forms, and the consequences of this in terms of our understanding of how life began  6.3.6.a I can describe some of the causes of extinction  6.3.7.a I can describe how antibiotic-resistant strains of bacteria can arise and spread  6.2.1.a I can describe what variation is and how it can be caused  6.2.1.b I can describe mutations and explain their influence on phenotype and changes in a species  6.2.2.a I can explain the theory of evolution by natural selection  6.2.2.b I can describe how new species can be formed  6.2.3.a I can describe what selective breeding is  6.2.3.b I can explain the process of selective breeding, including examples of desired characteristics and risks associated with selective breeding  6.3.7.b I can describe how the emergence of antibiotic-resistant bacteria can be reduced and controlled, to include the limitations of antibiotic development  6.4.1.a I can describe how organisms are named and classified in the Linnaean system  6.4.1.b I can explain how scientific advances have led to the proposal of new models of classification, including knowledge of the three-domain system  6.4.1.c I can describe and interpret evolutionary trees  7.1.4.b I can describe what an extremophile is  *6.3.1.a (biology only) I can describe the ideas proposed by Darwin in his theory of natural selection and explain why this theory was only gradually accepted*  *6.3.1.b (biology only) I can describe other inheritance-based theories that existed (apart from the theory of natural selection), and the problems with these theories*  *6.3.2.a (biology only) I can describe the work of Alfred Russel Wallace*  *6.3.2.b (biology only) I can explain how new species can be formed*  *6.3.3.a (biology only) I can describe how our understanding of genetics has developed over time, to include knowledge of Mendel*  Red denotes interleaving; aspects of knowledge covered previously. |
| **Learning Outcomes (Knowledge)** |
| **Current learning to be developed in the future within:** | Extensively at A Level |
| **Assessment** | Refer to assessment maps for formative and summative assessment opportunities. |
| **Impact** | Attainment and Progress – Refer to assessment results / data review documentation. |