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| **YEAR \_\_\_\_ 2023-2024 \_\_\_\_\_ TERM: Summer 1/2**  **‘An ambitious curriculum that meets the needs of all’**  **Medium Term Planning - Topic: Biodiversity** | |
| **Curriculum Intent** | **In addition to working further on objectives from KS3 Ecology and KS4 Topic 3 Environment, pupils will be taught, following National Curriculum guidelines, the following in this topic:**   * the importance of biodiversity * methods of identifying species and measuring distribution, frequency, and abundance of species within a habitat * positive and negative human interactions with ecosystems. |
| **Skills/National Curriculum Links** |
| **Spiritual, moral, social, and cultural development** | **SMSC:** Care for the environment, human impact on the environment  **PSHE/British Values:**  Caring for community & our planet  **Skills Builder:** Teamwork, practical working, working safely outdoors |
| **Numeracy** | Calculations required in the topic include calculation of mean, mode and median, area. Estimations of numbers of organisms in a given area from mean and area calculations.  Graph skills including drawing graphs, making calculations from a graph, interpreting data |
| **Literacy** | **Vocabulary Tier 2:** waste, population, pollution, atmosphere, global warming, habitat, acid rain, renewable, non-renewable, carbon dioxide, oxygen  **Vocabulary Tier 3:**  biodiversity, quadrat, transect, deforestation, eutrophication, bioaccumulation, peat bog  **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 (Required Practicals in ecosystem sampling).  In addition, students analyse data and draw conclusions |
| **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 ‘Core’ 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:  7.3.1.a I can describe what biodiversity is, why it is important, and how human activities affect it  7.3.2.a I can describe the impact of human population growth and increased living standards on resource use and waste production  7.3.2.b I can explain how pollution can occur, and the impacts of pollution  7.3.3.a I can describe how humans reduce the amount of land available for other animals and plants  7.2.1.b I can explain how and why ecologists use quadrats and transects  7.3.3.b I can explain the consequences of peat bog destruction  7.3.4.a I can describe what deforestation is and why it has occurred in tropical areas  7.3.4.b I can explain the consequences of deforestation  7.3.5.a I can describe how the composition of the atmosphere is changing, and the impact of this on global warming  7.3.5.b I can describe some biological consequences of global warming  7.3.6.a I can describe programmes that aim to reduce the negative effects on ecosystems and biodiversity  RP 9 I can investigate the population size of a common species in a habitat  Red denotes interleaving; aspects of knowledge covered previously. |
| **Learning Outcomes (Knowledge)** |
| **Current learning to be developed in the future within:** | GCSE Chemistry/Combined Chemistry - Atmosphere |
| **Assessment** | Refer to assessment maps for formative and summative assessment opportunities. |
| **Impact** | Attainment and Progress – Refer to assessment results / data review documentation. |