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| *What will they be learning, why and in what order?* | | | | | |
|  | **Term 1**  **Inheritance, Variation and Evolution** | **Term 2**  **Ecology** | | | **Term 3**  **Revision** |
| **Bridge/ Foundation knowledge required** | Students have previously covered the basics of this topic in year 8 Genetics, and will be familiar with the basic structure of DNA.  Students will have previously used Punnett squares, but have not yet discussed inherited disorders.  Students will be familiar with the basic principles of natural selection. | Students have previously covered ecosystems in KS3 geography.  From 2024 onwards, they will have covered basic ecosystems content in Year 7. Students will be able to produce basic food chains and webs.  Students will be familiar with words such as habitat and ecosystems, but may not yet be familiar with principles such as interdependence and predator-prey relationships. | | | Students will use this time to revise all KS4 topics, starting from the beginning of year 10.  Students will complete exam questions and scientific skills activities each lesson, in preparation for exams. |
| **Key Learning Experience / Skills** | Students will learn how cells divide a reproduce, both sexually to give rise to variation, and asexually for growth and repair. Students will become more confident in defining key terms such as allele, dominant and heterozygous, and use this knowledge to complete basic inheritance calculations.  Students will learn how organisms are classified, selectively bred, genetically engineered and how they have evolved over time. They will also investigate extinction and fossilisation. | Students will define key terms such as biotic/abiotic, interdependence, ecosystems, communities etc.  Students will be able to build more complex food webs and describe how each organism is affected by population changes.  Students will carry out practical activities to investigate the abundance of species in different habitats. | | | **HT4**  Cells and Organisation  Infection and Response  **HT5**  Bioenergetics  Homeostasis  Students will recap their knowledge of the above topics, and focus on applying exam technique. |
| **Assessment**  How will you assess the impact of teaching? | Students will complete plenary assessment tasks in each lesson.  Students will complete a mid-topic test and an end-of-topic test for every topic. At this stage, it will largely comprise of exam questions and will focus on fine-tuning exam technique. | | | | |
| **CIAG Links** | Medicine, nursing, pharmacology, pharmacy, biotechnology, epidemiology, research, genetic counselling | Conservation biology, marine biology, zoology, environmental biology, botanist/plant scientist | | | Cells, Organisation and Infection/Response – medicine, pharmacy, pharmacology, nursing, healthcare, teaching  Bioenergetics – medicine, sport science, nursing, ecology, farming, teaching Homeostasis - medicine, sport science, pharmacy, pharmacology, nursing, healthcare, teaching |
| **British Values** | Democracy, rule of law – use of embryos in therapeutic cloning | Respect, tolerance – respecting the habitats of other organisms | | | Students will consider how scientific theories have not always been immediately accepted, and are impacted by the improper use of tolerance, respect and democracy.  Students will consider how rule of law and liberty play a role in the implementation of new scientific theories in areas such as medicine. |
| **Cross Curricular Link Numeracy** | HT1 - Calculating probability in the form of fractions, and converting to percentages.  HT2 - Calculating area of a space, and calculating abundance of a species within that space. Reading predator-prey relationship graphs. | | **Cross Curricular Link- Literacy** | Students will be introduced to more tier-3 vocabulary at this stage.  Students will be expected to keep a glossary of key terms for each topic.  Students will complete exam questions in every lesson, and will be taught to pull apart long-stem questions to achieve maximum marks. | |
| |  | | --- | | ***The Hub Vision – A School that provides all students with exciting opportunities that build confidence, develop social skills and promote academic achievement*** | | | | | | |