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**Knowledge Rich Curriculum Plan**

SCIENCE- Biodiversity and human impacts



| **Lesson/Learning Sequence** | **Intended Knowledge:**  *Students will know that…* | **Prior Knowledge:**  *In order to know this, students need to already know that…* | **Working Scientifically** | **Tiered Vocabulary and Reading Activity** | **Assessment** | **Support** |
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| ***01***  ***Biodiversity*** | *Students will be able to state that biodiversity is made up of the diversity of ecosystems, the diversity of living organisms and the diversity of genetic information these organisms have. Students will able to describe the 4 categories of ecosystem services to be; supporting services (creation of habitat, cycling of essential substances, pollination), provisioning services (provision of food, materials, fuel, medicines), regulating services (decomposition of waste, control of climate, carbon storage, flood protection) and cultural services (enjoyment, recreation, tourism, education).* | *Students will know the definition of an ecosystem to be the interactions between abiotic and biotic factors.* | *Using descriptors to categorise information* | ***Ecosystem***  *An environment containing plants and animals all interacting with one another.*  ***Biodiversity***  *The number of different organisms all living and interacting in the same area.*  ***Diversity***  *The range of differences between individuals*  ***Provisioning***  *Supplying with food, drink or equipment*  ***Regulating***  *Control or maintain the rate of.*  ***Decomposition***  *Breaking down* | *Retrieval questions*  *Simple exam questions*  *End of topic test*  *Summative assessment 3* | *Knowledge organiser (provided on Teams and in class)*  [*https://www.bbc.co.uk/bitesize/guides/zwgbpbk/revision/8*](https://www.bbc.co.uk/bitesize/guides/zwgbpbk/revision/8)  [*https://education.nationalgeographic.org/resource/biodiversity*](https://education.nationalgeographic.org/resource/biodiversity) |
| ***02 Threats to Biodiversity*** | *Students will be able to recognise that major threats to biodiversity include; destruction of habitats, pollution, loss of genetic variation. Students will be able to describe the affects of reduced genetic diversity within the gene pool of a species to be; increased risk of extinction due to disease, genetic mutations due to inbreeding- less likely to adapt to changing conditions in the environment.* | *Students will know the definition of biodiversity and the evolution of species from learning about fossils. Students will already know about genetic and environmental variation within a species.* |  | ***Monoculture***  *Growing a single type of crop in an area.*  ***Variation***  *Differences between individuals of the same species.*  ***Evolution***  *The change in characteristics of a population over a period of time due to natural selection*  ***Deleterious***  *A negative effect*  ***Bioaccumulation***  *The build-up of chemicals within an organism over a period of time.* | *Retrieval questions*  *Simple exam questions*  *End of topic test*  *Summative assessment 3* | *Knowledge organiser (provided on Teams and in class)*  [*https://www.bbc.co.uk/bitesize/guides/zwgbpbk/revision/8*](https://www.bbc.co.uk/bitesize/guides/zwgbpbk/revision/8)  [*https://education.nationalgeographic.org/resource/biodiversity*](https://education.nationalgeographic.org/resource/biodiversity) |
| ***03 Positive human impacts – what can we do?*** | *Students will be able to identify how humans can interact positively with the environment to protect ecosystems. Examples include; conservation programmes, cleaning lakes/seas and using resources in a sustainable manner. Students will know that everyone has a personal responsibility to protect the environment.* | *Students will already know that humans can have a negative effect on the environment by deforestation, burning of fossil fuels etc.* |  | ***Conservation***  *The careful protection and preservation of something*  ***Interaction***  *An action or influence*  ***Sustainable***  *The ability to keep an action or process going continually.* | *Retrieval questions*  *Simple exam questions*  *End of topic test*  *Summative assessment 3* | *Knowledge organiser (provided on Teams and in class)*  [*https://www.bbc.co.uk/bitesize/guides/zt6sfg8/revision/1*](https://www.bbc.co.uk/bitesize/guides/zt6sfg8/revision/1) |