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**Knowledge Rich Curriculum Plan**

GCSE Design Core

Specialist Technical Principles - 2.3 Ecological and social footprint



| **GCSE Design Core** | **Specialist Technical Principles  2.3 Ecological and social footprint** |  |  |  |
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| **Lesson/Learning Sequence** | **Intended Knowledge:**  *Students will know that…* | **Tiered Vocabulary** | **Prior Knowledge:**  *In order to know this students, need to already know that…* | **Assessment** |
| **Lesson:**  **Ecological and social footprint** | * Students will know the global impact produced by product manufacture * Students will know the ways the globe can be impacted * Students will know how deforestation can impact the planet * Students will know that deforestation refers to the cutting down and destroying trees * Students will know how mining can impact the planet * Students will know that mining refers to digging into the earth and extracting metal ore * Students will know how drilling can impact the planet * Students will know that drilling refers to drilling into the earth to extract crude oil for plastics * Students will know how farming can impact the planet * Students will know that farming refers to the clearing of space to farm animals | Deforestation: the action of clearing a wide area of trees.  Mining: the process or industry of obtaining coal or other minerals from a mine.  Drilling: the action of making a hole in something by boring with a drill.  Farming: the activity or business of growing crops and raising livestock. | * ***Students need to already know different impacts on the globe*** * ***Students need to already know that the earth is affected by the manufacture of products*** * ***Students need to already know how wood is extracted*** * ***Students need to already know how metal is extracted*** * ***Students need to already know how crude oil is extracted*** | How does environmental impacts affect a designer’s materials choice?  What are the major differences between environmental issues |
| **Lesson:**  **The six Rs** | * Students will know how a designer can help design for sustainability * Students will know that the six Rs are used to help designers * Students will know that Reduce refers to the amount of energy and materials used in the manufacture of a product. This will help to protect valuable resources * Students will know that Recycle refers to take the product apart and separate into the same materials. Convert these materials into another product often by melting it down. * Students will know that Reuse refers to the product for something else so you don’t need to throw it away * Students will know that Rethink refers to products and how we use them. * Students will know that Repair refers to products rather than throwing them away * Students will know that Refuse refers to buy materials and products that are unsustainable | Reduce: refers to the amount of energy used  Recycle: refers to the product and its end of life  Rethink: refers to how a designer considers the materials  Reuse: refers to how a product can be reused to another product  Repair: refers to how a product has been made to be repaired  Refuse: refers to how a designer refuses to use materials unsuitable for the environment | * ***Students need to already know some of the six Rs*** * ***Students need to already know some aspects of how a designer can help be sustainable*** * ***Students need to already know examples of how a designer can be sustainable*** * ***Students need to already know the term recycle*** | Why would a designer use the 6 Rs when designing a product?  How do the 6 Rs help design a product? |
| **Lesson:**  **Deforestation** | * Students will know the further impacts of deforestation * Students will know how deforestation can impact people * Students will know that deforestation can affect people by increasing pollution, and destroying the ozone layer * Students will know how deforestation can impact animals * Students will know that deforestation can affect animals’ habitats | Ozone layer: a colourless unstable toxic gas with a pungent odour and powerful oxidizing properties, formed from oxygen by electrical discharges or ultraviolet light  Deforestation: the action of clearing a wide area of trees. | * ***Students need to already know the term deforestation*** * ***Students need to already know how deforestation can affect the planet*** * ***Students need to already know how designers can combat the effects of deforestation*** | How does deforestation cause issues for designers?  Can a designer help against deforestation? |