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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 usedRecycle: refers to the product and its end of lifeRethink: refers to how a designer considers the materialsReuse: refers to how a product can be reused to another productRepair: refers to how a product has been made to be repairedRefuse: 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 lightDeforestation: 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? |