****

**Knowledge Rich Curriculum Plan**

GCSE Design Core

Core Technical Principles - 1.1 New and emerging technologies



| **GCSE Design Core** | **Core Technical Principles**  **1.1 New and emerging technologies** |  |  |  |
| --- | --- | --- | --- | --- |
| **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:**  **Industry** | * Students will know how automations is used during the manufacture of products * Students will know that manufacture means to make (something) on a large-scale using machinery. * Students will know how industry is used to manufacture products * Students will know that industry means processing of raw materials and manufacture of goods in factories. * Students will know the advantages and disadvantages of automation * Advantage: Faster, More accurate * Disadvantages: Costly, reduces human productivity, can break down * Students will know that automation means the use or introduction of automatic equipment in a manufacturing or other process or facility. | Industry: economic activity concerned with the processing of raw materials and manufacture of goods in factories.  Automation: the use or introduction of automatic equipment in a manufacturing or other process or facility. | * ***Students need to already know about robotics*** * ***Students need to already know the term ‘production'*** * ***Students need to already know the term ‘innovation’*** | How can the use of robotics affect the manufacture of a product?  Compare the effectiveness of workshop manufacture to that of industrial manufacture  Using an example, how can industrial manufacture aid production? |
| **Lesson:**  **Sustainability** | * Students will know how finite resources are used * Finite: having definite or definable limits * Students will know how non-finite resources are used * Non-finite: resources that can be reused * Students will know the term ‘sustainability’ * Sustainability: avoidance of the depletion of natural resources in order to maintain an ecological balance. | Finite: having definite or definable limits  Non-finite: resources that can be reused  Sustainability: avoidance of the depletion of natural resources in order to maintain an ecological balance | * ***Students need to already know the term renewable*** * ***Students need to already know the term non-renewable*** * ***Students need to already know the term finite*** * ***Students need to already know the term non-finite*** | How does the use of sustainable materials aid the product?  What are the concerns consumers could have with sustainable materials?  How does the sourcing of non-sustainable materials affect the consumer? |
| **Lesson:**  **Market pull** | * Students will know the term market pull * Market pull: a scenario in which the market demands a product (or service) type, or defines a problem * Students will know how market pull can develop a product * Students will know why products develop | Product: an article or substance that is manufactured or refined for sale.  Demand: an insistent and peremptory request, made as of right.  Market pull: a scenario in which the market demands a product (or service) type, or defines a problem | * ***Students need to already know that products change*** * ***Students need to already know the term consumer*** * ***Students need to already know the term development*** | Why does the interest of the market affect the products manufacture?  How can the market help develop a product? |
| **Lesson:**  **Technology push** | * Students will know how products change due to technology developments * Technology: machinery and equipment developed from the application of scientific knowledge. * Students will know the term technology push * Technology push: Research and development in science and industry can lead to new discoveries, which can be used to improve existing products or develop new ones. * Students will know about consumer choice * Consumer: a person who purchases goods and services for personal use. | Consumer: a person who purchases goods and services for personal use.  Technology push: Research and development in science and industry can lead to new discoveries, which can be used to improve existing products or develop new ones. | * ***Students need to already know how technology has developed over the years*** * ***Students need to already know the differences in technology*** * ***Students need to already know the term ‘technology’*** | Does the development of technology really change a product?  Compare the market to technology, which development affects the product the most? |