The Ellesmere Port C of E College

Part of the Frank Field Education Trust

# Year 12 DT: Product Design A Level
# Learning Programme 2

The LORIC skill focus for his LP is: ORGANISATION
The Moral Virtues focus for this LP are: COMPASSION and HONESTY

Compassion - the quality of feeling pity and concern for the sufferings or misfortunes of others.
Honesty - the quality of being truthful.

**What will I be learning about in this Learning Programme?**
The source material (origin) and processing methods of a range of materials used in DT; the classification of material types, properties and uses, focusing on fibres, composites, modern and smart materials. The methods of gaining structural integrity in products. The methods of surface finishing materials. How to demonstrate timber wastage, assembly and finishing processes whilst manufacturing a chosen product.

**Where have I seen this learning before?**
At GCSE D&T you will have explored a range of different material types that are used to make products. You will have learnt about the more common materials of timbers, polymers and metals during LP1 of Year 12.

**What could I use it for?**
You will apply your knowledge in the A Level D&T examination and will utilise your design skills & understanding in the A Level NEA, the Iterative Design Project.

**Literacy:**
- Capital letters must be used at the start of sentences and for the first letter of proper nouns
- Full stops must be used at the end of a sentence
- Question marks must be used at the end of a question
- Apostrophes should only be used for possession or omission
- Days of the week and months must be spelled correctly
- Key words must be spelled correctly

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| **In LP2.1, I will know:** | **19/10/26 - (WK 2)** | **Key Vocabulary** | **Homework** |
| the origins of natural and synthetic fibres (3.2c), considering environmental impact (3.1a.v);<br>what requirements the product should meet to be successful;<br>how to present a wide range of original design ideas using suitable 2D and 3D drawing methods and labelling. | | Natural | Natural and synthetic fibres. |
| **In LP2.2, I will know:** | **02/11/26 - (WK 1)** | **Key Vocabulary** | **Homework** |
| the types of natural and synthetic fibres and their properties (5.2a.vi);<br>how to identify woven, non-woven and bonded textile fabrics and their uses (5.2a.vii). | | Synthetic | Develop a selected passive speaker idea using CAD. |
| **LP2 RLW, I will:** | **09/11/26 - (WK 2)** | | |
| review my learning, recalling and applying key knowledge, and focus on closing any gaps in my knowledge. | | Revision | Use revision techniques to prepare for the summative assessment. |
| **In LP2.3, I will know:** | **16/11/26 - (WK 1)** | **Key Vocabulary** | **Homework** |
| what a composite material is;<br>a range of composite materials, their working properties and uses (5.2a.viii);<br><br>Extended Task. | | Composites | Composite materials. |
| **In LP2.4, I will know:** | **23/11/26 - (WK 2)** | **Key Vocabulary** | **Homework** |
| my strengths and areas for development from my learning so far, by completing a summative assessment;<br>how to apply a range of workshop processes to mark out and cut the component parts of the product;<br>about a range of modern materials and their applications (5.2a.ix). | | Wastage process | Manufacturing diary to explain processes. |
| **In LP2.5, I will know:** | **30/11/26 - (WK 1)** | **Key Vocabulary** | **Homework** |
| about a range of smart materials and their applications (5.2a;x);<br>the design opportunities of using smart and modern technologies in products (6.3a). | | Smart materials | Smart and modern materials. |
| **In LP2.6, I will know:** | **07/12/26 - (WK 2)** | **Key Vocabulary** | **Homework** |
| how materials are reinforced or stiffened to fulfil structural integrity;<br>how surface finishes can enable products to function effectively within their surroundings (6.2a, 6.2b);<br>how to use specific tools and equipment to manufacture the product.<br><br>Extended Task. | | Structural integrity | Structural integrity. |
| **In LP2.7, I will know:** | **14/12/26 - (WK 1)** | **Key Vocabulary** | **Homework** |
| the different methods of finishing timbers and metals;<br>why polymers do not usually have surface finishes applied;<br>how to use specific tools and equipment to manufacture the passive speaker. | | Surface finishes | Surface finishes. |

PRT Task 1

PRT Task 2

**Resources to support learning:**
The following websites contain extensive revision material and information to increase design & technology subject knowledge:
Product design maker YouTube tutorials www.productdesignermaker.com;
Jude Pullen's Lockdown Lectures from Bangor University - YouTube.

**FFET Award Challenge for this Learning Programme:**
Produce detailed CAD drawings of your passive speaker, to include 3D rendered views, exploded view and orthographic projection.