



YEAR 10/11 CURRICULUM KNOWLEDGE MILESTONES: DESIGN TECHNOLOGY

Designing and Planning

- They will have an awareness of social moral, cultural and environmental issues and be able to discuss them and link them to their design work with reference to an LCA
- They will be able to identify and explore relevant information based on their given/chosen client/user needs. They will also be able to generate relevant questions to gather primary data which is also analysed
- They will be able to develop their own detailed design specification referencing the needs of their chosen client/user
- They will be able to independently research relevant information and related information and use them to inform their design decisions avoiding design fixation
- They will be able to sketch a variety of different designs using a range of sketching techniques that link to their research and client needs including detailed annotation exploring function, form, materials and construction methods
- They will understand the importance of innovation and experiment when designing as well as ensuring that the designs are both functional and appropriate for their purpose.
- They will have a broader use of annotations including links to ergonomics, anthropometric data and social and economic considerations where relevant
- They will be able to independently plan a sequence to allow them to manufacture products and prototypes including looking at alternative construction methods and materials
- They will be able to create a time plan to produce a healthy meal whilst considering timings, health and safety and checks for readiness.

Making and Developing

- They will be able to name and use a wide range of tools and equipment using them safely and with accuracy including CAM as appropriate. They will also be able to set up and use the Laser cutter as appropriate
- They will have a detailed understanding and experience of a wide range of processes and be able to use subject specific language when discussing them
- They will have a wide knowledge of materials, including both modern and smart materials as well as understanding their working properties and be able to select appropriate ones for specific situations including their use in industry.
- They will be accurate with an excellent quality finish, able to creatively solve problems and be more independent when making products selecting their own tools and processes as well as selecting materials as appropriate using quality control throughout the making process
- They will have a good understanding modern manufacturing including
- CAD/CAM, as well as CNC and CIM
- They will be able to use CAD and access CAM as appropriate when making their products
- They will actively work independently and adapt and experiment developing their ideas through iteration as well as collaboration and responding to the advice and opinions of a third party
- They will be aware of the local Ks5 progression opportunity's as well as possible future careers
- They will become more proficient in making high quality products using a broad range of processes and materials including bought in components that could be commercially viable ingredients and to further stretch those existing skills by planning and making a meal of their choosing.

Analysing and Evaluating

- They will actively use the work of others as well as unrelated images and themes when designing and making using products and images as vehicles to avoid design fixation
- They will be able to critically analyse/evaluate their work and the work of others against a design brief/ specification that they have developed in detail based on a given or chosen clients responses to questions
- They will know in detail what the responsibilities of designers and manufacturers are in relation to social, moral, cultural and environmental issues.
- They will be able to critically analyse/evaluate theirs and others work independently using an LCA
- They will be able to predict and identify common errors as well as problems they face when designing and making explaining what could go wrong or has gone wrong. They will then be able to problem solve independently using metacognition skills
- They will have a good level of conceptual understanding making links
- Frequently in unfamiliar situations helping them to plan and develop complex design solutions and products
- They will be able to explain what has gone well and what can be improved during their practical and set themselves targets for the following lesson as well as planning for developing their product over time.

Technical Language

- They will be able to use a broad range of technical language in unfamiliar situations fluently and articulately as well as being able to use the language in their NEA
- They will be able to recall and apply 5 stages of the Life Cycle Assessment to both their own and the work of others
- They will be secure in understanding what inclusive design is and be able to apply the knowledge in both familiar and unfamiliar situations including exam related questions
- They will have an excellent understanding of new and emerging technologies and use the knowledge as appropriate when analysing/ evaluating products including exam related questions
- They will further develop pupils' knowledge of healthy eating including understanding diet related diseases and how cooking methods can impact on nutritional value of foods.