

Scheme of Learning: Non Exam Assessment

Topic Sequence: Year 11 Non Exam Assessment (NEA)

1	2	3	4	5
Identifying and investigating design possibilities (AO1)	Developing a design brief and specification(AO1)	Generating and developing design ideas (AO2)	Manufacturing a prototype (AO2)	Analysing and evaluating design decisions and prototypes (AO3)

Topic Overview:

This stage of the NEA take students from a list of requirements (design specification) to a final, fully resolved design idea, ready for manufacturing.

Students must generate a large range of varied initial design ideas, before applying an iterative design process to continually evaluate and develop their designs. User feedback throughout is an essential part of meeting the assessment objectives. Students must also consider the social, moral and economic factors affecting their design development.

Students must draw upon the knowledge of materials and construction developed through both KS3 and the earlier stages of KS4. Students must explore their design thinking, using computer aided design (CAD). Building on their foundation skills and developing them further to communicate their design ideas skilfully.

Lesson Sequence:

The lesson sequence is designed to enable students to meet the requirements of each Assessment Objective (each is presented as a "topic" at the top of this document). As such, the lessons will lead students through the full design and manufacture process, starting with the design contexts presented on the exam paper.

Students begin the design idea generation through applying a wide range of design strategies, using mood boards, scruffitti and morphological analysis to help produce ideas that are more than just "typical responses". Ideas must be sketched and annotated to make clear their function, and if relevant any material choices, making any links to social, moral and economic (SME) factors that may affect their design and manufacturing.

Evaluation is expected throughout the project, but after producing a wide range of design ideas, students formally evaluate their designs against the most important aspects of the design specification. Students need to summarise the findings of their evaluation, acknowledging which designs are the most successful and any areas they will need to develop further to fully meet the requirements of the specification and user.

Students may choose to sketch and develop their designs further throughout this section of the project, but it is also helpful to model in three dimensions, using both card and computer aided design (CAD).

The card modelling stage allows students to gain an understanding of the form of their most successful design, whilst also exploring how it could be manufactured, using primarily sheet material and timber. Once again, card modelling is evaluated, against the specification and through seeking the opinions of any stakeholders.

Finally CAD is used to refine the overall form and fully resolve the construction of the design. Alongside this element of design development, students will complete research into relevant materials that can be readily sourced and easily used in the workshop facilities. Students will research common methods of construction, which can then be incorporated into the design development. Documenting the process of development, with reasoning for the decisions taken in relation to both user needs and SME factors.

Students will be ready to move to the manufacturing stage of the project once they have a fully resolved final design, materials and finishes. Exploded view detailing the size and shape of each part. Annotation to explain the planned assemble methods.

Sequence of Lessons:

1	Design Strategies – Morphological Analysis
2	Design Strategies – Scruffiti
3	Design Strategies – Mood board inspired design
4	Social, Moral and Economic Factors in Design – ongoing commentary
5	Design Ideas Evaluation and user feedback
6	Card Modelling
7	Card Modelling
8	Card Modelling Evaluation and user feedback
9	Design Development - Sketching
10	Design Development - CAD
11	Design Development - CAD
12	Materials/finishes Research
13	Construction Methods Research
14	Exploded/Assembled Final Design

Topic Resources:

Knowledge Map:	NEA Marksheet Document	Prescribed Sources:	None
-----------------------	------------------------	----------------------------	------

Assessment:

Knowledge:	NEA Assessment Objectives
Application of Knowledge:	NEA Folder and manufactured prototype

Supportive Reading:

Technology Student	technologystudent.com
Focus Education	Via the Design & Technology Curriculum Zone on the school website.