



Overview:

In Year 10, students develop skills and knowledge through four design and make projects: baseline modelling, ice scraper, wooden box and speaker. The quality and complexity of the products made is increased from Key Stage 3 and students learn more about the materials and tools available to them. The ability to plan and think logically is more important in Year 10, with students taking more responsibility for designing, planning and making their products. In June the exam board issues a list of 'contexts' for the NEA (Non-Exam Assessment). Students need to decide on one to design and make a product into Year 11.

Careers in the Curriculum:

The topics covered will highlight links to careers in model making, acoustic engineering, musical instrument making, packaging design, graphic design and quantity surveying.

Term	Topic	Assessment
Aut1	Baseline assessment project: <ul style="list-style-type: none"> • Specific design companies, papers and boards particularly corrugated card • Designing and enhancement techniques Ice scraper project including investigation, design brief and specification, design ideas, development models, prototype manufacture, evaluation and testing: <ul style="list-style-type: none"> • Ergonomics and anthropometrics, existing product analysis ACCESSFMM 	<ul style="list-style-type: none"> • Assessment of design and make portfolio • Baseline multiple choice exam questions
Aut2	Ice scraper project continued: <ul style="list-style-type: none"> • Plastics, CAD/CAM and 2D design and laser cutting • Testing and prototype development, plastics shaping joining and finishing Box project: <ul style="list-style-type: none"> • Isometric drawing and enhancement • Woods and wood joints 	<ul style="list-style-type: none"> • Assessment of design and make portfolio • End of project test using GCSE exam questions on the subjects covered
Spr1	Box project continued: <ul style="list-style-type: none"> • Quality control • One point and two point perspective 	<ul style="list-style-type: none"> • Assessment of design and make portfolio • End of project test using GCSE exam questions on the subjects covered
Spr2	Speaker project using the NEA format: <ul style="list-style-type: none"> • Electronics and soldering • NEA practice revisiting research, design briefs, specifications, design ideas • Third angle orthographic projections • Tinkercad 3D modelling 	<ul style="list-style-type: none"> • Assessment of design and make portfolio
Sum1	Speaker project continued: <ul style="list-style-type: none"> • Marking out and wood working skills paying attention to quality control • NEA practice revisiting cutting list, plan for making, work diary, testing and evaluation 	<ul style="list-style-type: none"> • Assessment of design and make portfolio
Sum2	<ul style="list-style-type: none"> • NEA Section A - Identifying and investigation design possibilities • NEA Section B - Producing a design brief and specification 	<ul style="list-style-type: none"> • Year 10 PPE • Assessment of NEA portfolio sections A and B

Overview:

In Year 11, students continue work on the 50% NEA and work on exam technique. In the NEA, students are assessed on their ability to research, use clients, use a range of design and development techniques, evaluate based on their knowledge of tools, materials and processes and create a final prototype. 20% of the NEA is awarded for 'making' so the demand for students to complete a well-presented, detailed and well-structured portfolio is very high. Using the knowledge gained in Years 7-10 and the independent learning schedule, students will also work through theory sessions and exam questions in preparation for the end of year written paper (50%). The paper includes questions about 'core' principles (including some textiles questions), technical principles and design and make principles.

Careers in the Curriculum:

The topics covered will highlight links to careers in prop making, town planning, property developing and toolmaking.

Term	Topic	Assessment
Aut1	NEA Section C - Generating design ideas: <ul style="list-style-type: none"> Explore a range of possible ideas linking to the contextual challenge selected Use a variety of techniques to communicate the range of design ideas and assess them against the design criteria Revisit a range of topics and past exam questions in preparation for the GCSE exam in June.	<ul style="list-style-type: none"> Assessment of NEA portfolio sections A - C
Aut2	NEA Section D - Developing design ideas: <ul style="list-style-type: none"> Develop and refine design ideas using formal and informal 2D/3D drawing including CAD, systems and schematic diagrams, models and schedules Develop at least one model, select suitable materials and components communicating their decisions throughout the development process Produce a manufacturing specification including a plan for making and cutting list Revisit a range of topics and past exam questions in preparation for the GCSE exam in June.	<ul style="list-style-type: none"> Assessment of NEA portfolio sections A - D
Spr1	NEA Section E - Realising design ideas: <ul style="list-style-type: none"> Work with a range of appropriate materials/components to produce prototypes that are accurate and within close tolerances. The prototypes will be constructed through a range of techniques appropriate to the product which may include CAD/CAM, shaping, fabrication, construction and assembly Revisit a range of topics and past exam questions in preparation for the GCSE exam in June.	<ul style="list-style-type: none"> Assessment of NEA portfolio section A- E PPE
Spr2	NEA Section F - Analysing and evaluating <ul style="list-style-type: none"> Final prototypes will undergo testing on which the final evaluation will be formulated. This will include market testing and a detailed analysis of the prototype Revisit a range of topics and past exam questions in preparation for the GCSE exam in June.	<ul style="list-style-type: none"> Assessment of completed NEA portfolio and product
Sum1	Revision and exam preparation using past papers in preparation for the GCSE exam in June.	<ul style="list-style-type: none"> Final assessment of NEA portfolio and product
Sum2	Revision and exam preparation using past papers in preparation for the GCSE exam in June.	<ul style="list-style-type: none"> GCSE Examination