Week 1	**Specialist technical principles** Students should be able to: • Effectively communicate design ideas using different sketching and modelling ideas	**Practical phase – NEA style project.** Pupils should demonstrate the ability to: • Be able to use appropriate measuring and marking tools	**Practical phase – NEA style project.** Pupils should demonstrate the ability to: • Recognise and apply key points of Health and Safety when working in the workshop

Week 2	**Specialist technical principles** Students should be able to understand and describe: • The six Rs (Reduce, Refuse, Re-use, Repair, Recycle and Rethink) • The ecological issues involved in design and manufacture	**Practical phase – NEA style project.** Pupils should demonstrate the ability to: • Be able to use a range of cutting and abrading tools when working with a range of materials	**Practical phase – NEA style project.** Pupils should demonstrate the ability to: • name and use commercially available types and sizes of resistant materials

Week 3	**Specialist technical principles** Students should be able to understand and describe: • Basic material properties • Specific physical and working properties such as density, fusibility, strength and hardness • How to modify properties for a specific purpose	**Practical phase – NEA style project.** Pupils should demonstrate the ability to: • name and apply suitable processes for working with resistant materials	**Practical phase – NEA style project.** Pupils should demonstrate the ability to: • demonstrate appropriate initial preparation techniques when finishing resistant materials Opportunities to visit maths links – Calculation of material costs.
Week 4	**Specialist technical principles** Students should be able to understand and describe: • The commercially available types and sizes of materials • The stock forms available The process of converting primary sources into stock forms	**Practical phase – NEA style project.** Pupils should demonstrate the ability to: • Describe and implement the methods for materials to be cut shaped and formed to a tolerance	**Practical phase – NEA style project.** Pupils should demonstrate the ability to: • choose abrasive papers of different grit sizes appropriate to the task • use the correct techniques and procedures to achieve a high quality finish with the abrasive papers

Week 5	**Specialist technical principles** Students should be able to understand and describe: • The correct use of Manufacturing specifications and working drawings The importance of the process of quality control	**Practical phase – NEA style project.** Pupils should demonstrate the ability to: • Understand the importance of applying an undercoat for a finish on a resistant material • Demonstrate the correct technique when applying undercoat layers to a material	**Practical phase – NEA style project.** Pupils should demonstrate the ability to: • describe the different ways products can be tested both physically and virtually
Week 6	**Specialist technical principles** Students should be able to understand and describe: • The importance of the process of quality control • The different quality control techniques used in manufacturing environments	**Practical phase – NEA style project.** Pupils should demonstrate the ability to: • describe and use appropriate heat-based techniques for shaping materials such as plastics	**Practical phase – NEA style project.** Pupils should demonstrate the ability to: • describe specific Health and Safety issues when drilling or cutting different materials in the workshop Opportunities to visit maths links – Calculation of material costs.