Year 8 Design & Technology Carousel

Metal based materials		
Lesson 1	Lesson 2	Lesson 3
Introduction to the project Pewter and wood key ring fob. Explanation of basic principles of Design Technology. How to show shape and form using shading techniques Pupils will complete a worksheet about shape and form in design technology.	**Research and materials in Design Technology.** The difference between ferrous metal and non – ferrous metal. Pupils to complete questions in work book related to properties of metals. Introduction to typography and fonts as a theme for the project. Pupils to complete a worksheet related to font design as homework.	**Design brief and Initial ideas.** What is a design brief and why do we use them in design technology? Discuss the correct method of producing initial ideas: • 3D sketches • Colour • Annotation Pupils to complete 3 initial ideas with accompanying annotation.
Modelling in Technology / using CADCAM Why do we use models in Technology? The role of computer modelling and testing. How will CAD CAM be used to produce the hand held puzzle? Pupils will produce a card model at 1:1 scale of their design.	**Workshop rules / Health and Safety** The importance of Health and Safety in the workshop. What kind of accidents could occur in the workshop? Understanding how to use the machines safely - guards, PPE, floor tape, emergency stops, correct clothing and emergency procedures. Workshop rules. Pupils will complete a worksheet about workshop safety and design a safety poster of their own. Distribute materials.	**Practical Lesson–Measuring and marking** Materials distributed to pupils. Teacher demo on the correct way to mark and measure the material • Use of rulers – using mm • Using Tri squares • Indicating the waste. • How to use an engineer's square and scribing tool Pupils to proceed with practical, show awareness of Health and Safety and follow the rules of the workshop

Practical lesson. Continuation of practical lessons. Recap important Health and Safety issues from last lesson and discuss good examples of work.	**Practical Lesson- Cutting tools and techniques.** Teacher demo on the correct way to use cutting and shaping tools such as saws, drills and files. • Correct techniques – how to begin a cut, sawing in a straight line, where to place hands • Common mistakes – using the tool incorrectly, using the wrong tool for the job • Correct methods of drilling – stepping up, work piece holding using hand vices and using correct technical terms. Pupils to proceed with practical, show awareness of Health and Safety and follow the rules of the workshop.	**Practical lesson – CADCAM** Demo the pewter casting hearth and CAD router machine. Reinforce health and safety rules when using the machines. Pupils to use both machines to produce a mould and cast a letter from pewter. • Follow correct procedure • Be aware of specific safety rules when using the machines • Be able to apply basic quality control checks after both processes are finished
Practical lesson –Cleaning the materials/ Adding a finish Pupils will clean up their materials using sandpaper, wire wool and metal polish. Discussion about finishes : • Why are they used • Different types for different materials Pupils will be shown how to apply a clear polyurethane finish to seal in their material once it is completed Pupils to proceed with practical, show awareness of Health and Safety and follow the rules of the workshop	**Practical – Final assembly** Final assembly lesson for all aspects of the project to be completed. Reminder about Quality Control – Modifications that may have occurred need to be noted and justified if they have deviated from the design brief	**Evaluation** Review the project with the pupils. Class discussion with all the completed projects on view. Good examples and why. What improvements could others have made? All pupils to complete an evaluation work sheet to review their product and their own performance during the rotation