Subject	Design and Technology	Year Group	9
	Half of Carousel rotation - Approx 6-7 weeks	**Half of Carousel rotation - Approx 6-7 weeks**	
Scheme title	**D&T Materials - Using metals and timbers to make a pewter cast and decorative box**	**D&T Textiles & Graphics - Using fibres to make a branded draw string bag**	
Purpose of scheme	For this scheme pupils will learn about using metal as a material and learn about its raw form and how it can be processed through a range of manufacturing methods. Pupils will learn some of the more generic information about metals, including raw form, the difference between ferrous and non ferrous metal and whate defines and alloy. The purpose of this is to introduce pupils to one of the main resistant materials, ,which satisfies the requirements of the national curriculum and also underpins the material knowledge required at GCSE for the core techincal principles.	For this scheme pupils will learn about the developments in textile fibres and the benefits and impacts that technical textiles have on modern life. Pupils will learn some of the more generic information about textiles, including raw form, The purpose of this is to introduce pupils to one of the main modern materials, which satisfies the requirements of the national curriculum and also underpins the material knowledge required at GCSE for the core techincal principles.	
Knowledge in sequence	Pupils will begin by learning about biomimicry and how this will be the source of inspiration for the client brief. Pupils will learn how pewter casting is done in the classroom and will quicklly begin to make mould used CAD/ CAM and further develop[ing their understanding of using the laser cutter. Pupils will learn about what pewter is and what type of metal category it comes under. Pupils will learn about the raw form for metal and how it is extracted. They will also be able to explain the difference between ferrous and non ferrous metals and why some metals are alloyed.	Pupils will begin by learning about the developments in technical textiles and how they are applied to every day life including the use of Kavlar, Rhovyl & Gortex. Pupils will then recieve a design brief where they need to think about the clients wants and need, after some inital research pupils will begin to design a logo using CAD/ CAM and further developing their understanding of using the sublimation printer. Once printed onto sublimation paper & heat pressed onto fabric, the pupils are able to attach their logo onto their Non-rip nylon fabric and stiched into position. Pupils are able to recap their manufcaturing skills in order to produce a pocket, the channel for the rope and then the main bag contruction. The pupils will be able to critique their outcome and redesign inclusding any modifiactions.	
Skills	This project his heavily focussed on skills as pupils will not only manufacture a pewter keyring, but they will also construct a small wooden box using complex wood joints. Pupils will further develop their skills using hand tools to carve out the finger joints on thier box as well as machines needed to smooth and shape the box to achieve a high quality finish. The pewter cast also requires cutting, shaping and smoothing to achieve maximum shine. The tools include Tri squares, tenon saws, coping saws, files and smoothing paper for metal and timber. Pupils will also use the laser cutter and band facer. For moulding the metal, pupils will learn what the correct PPE is for moulding metal as this is a high risk practical activity. Pupils will learn how to melt pewter using a blow torch safely and how to handle the metled pewter in a very hot state. For the pewter cast pupils will also develop their skills on the laser cutter by learn how to source images from the internet to both trace and vectorise, helping them to become more independent using our CAD/CAM facilities.	This project has a focus on modern technical develpments in textile fibres. The pupils will be able to develop their skills in useing CAD packages such as Google Draw or Photoshop to produce a logo. The pupils also learn about how the sublimation printer and heat press process enables ink to penitrate multiple types of materials through the convertion of solid to gas. Pupils learn new construction techniques through the manufacture of their drawstring sports bag by inserting pockets & fastenings etc.	
Key words	Pewter, Casting, Mould, Laser cutter, 2D design, Gauntlets, Ladle, Hacksaw Junior Hacksaw, Pillar drill, Wet and dry, CAD/CAM	Technical Textiles, Sublimation, Water resistance. Brand Identity CAD/CAM, Heat press Bondaweb. Applique, Channel, Ancor.	

End point	By the end of this project, pupils will be able to use the laser cutter more independently and have a further understanding of it's potential when manufacturing. Pupils will know where metal comes from and which stock forms it can be purchased in. Pupils will know how to mould pewter and this will become and additional manufacturing method they can take into GCSE. They will know what a finger joint is and how to construct one and their skills with the hand tools will become so much more accurate. The level of practical required for this project and the quality of the finished product will hopefully help pupils develop a positive perspctive of D&T as a subject and consider taking it as a GCSE subject.	By the end of this project, pupils will be able to use the Sublimation printer and heat press independently and have a further understanding of it's potential when manufacturing. Pupils will know how to insert pockets and fastenings, an additional manufacturing method they can take into GCSE. Their skills with the sewing machine will become so much more accurate. The level of practical required for this project and the quality of the finished product will hopefully help pupils develop a positive perspctive of D&T as a subject and consider taking it as a GCSE subject.	
Assessment Methods	Key assessment pieces includes **design, manufacturing**, literacy (Usually in the form or **evaluation** or analysis) and **technical** assessment (Socrative online assessment assessing theoretical understanding of the chosen materials and its processes.)	Key assessment pieces includes **design, manufacturing**, literacy (Usually in the form or **evaluation** or analysis) and **technical** assessment (Socrative online assessment assessing theoretical understanding of the chosen materials and its processes.)	