LONG TERM PLANS
Year 9 (2015-16)

Nobel
Excellence in Everything

ADT Faculty – carousel delivery model – order may change

YEAR 2015-2016

Autumn term

Half term 1	Half term 2
Project Title: Design and Build an electric driven cam operated toy (COT) Pupils will develop an understanding of how to convert rotary motion into linear motion by experimenting and designing levers and followers that are operated by cams with different profiles. They will use their electrical knowledge from Year 7 and 8 to construct a motorised control circuit operated by a Push To Make (PTM) switch. The importance of 'input' and 'output' processes will be discussed as well as calculations related to gear ratios and resistor values. The Pupils will continue to develop and improve their hand-eye coordination skills and fine motor skills whilst manipulating small components in order to make their 'Cam Operated Toy'. Pupils will have the opportunity to design, build and decorate their own COT having developed a 'specification' for the Project using ACCESS FM design criteria. ***Key Assessment Activity:*** The Pupils will be asked to reflect on the making of their Project as part of their final assessment activity and to complete an End of Module test to confirm understanding and to identify the Pupils attainment.	**Project Title:** Design and Build an electric driven cam operated toy (COT) The Pupils will develop and realise the importance of accurate marking out and soldering skills as well as the importance of aligning axles, cams, followers and the frame components for maximum efficiency during the production process. They will be introduced to a wide selection of specialist vocabulary as used in Industry and by Designers and Engineers. Pupils will develop their Personal Learning and Thinking Skills, e.g. - by carrying out Independent Research for Homework tasks and by working both as individuals and in teams in the classroom when carrying out practical activities. ***Key Assessment Activity:*** Cross curricular links: (English) Spelling and correct use of language and terminology is vital for accurate work and transmission of ideas. (Maths) – Calculations regarding wheel speed using Driven over Driver calculations, resistor value calculations. Accurate marking out and use of materials - dimensions / measuring needed to make the COT. (Science) – Forces; shapes of cams and material science e.g. working properties / resistance to forces.

Spring term

Half term 1	Half term 2
Project Title: It's in the Box Project **Overview:** Pupils develop their understanding of Resistant Materials, making use of Pine and Ply wood to manufacture a Box container. Students will explore different tools and equipment commonly used to work with Resistant Materials, and understand the properties and differences between these materials. Students will learn different drawing techniques used to present their ideas and further develop their skills in 2D Design. ***Key Assessment Activity:*** The Pupils will be asked to reflect on the making of their Project as part of their final assessment activity and to complete an End of Module test to confirm understanding and to identify the Pupils attainment.	**Project Title:** It's in the Box Project The lid of the container will be a self-designed sketch, then 2D designed reproduced image, incorporating the laser cutter for engraving and/or cutting acrylic designs. ***Key Assessment Activity:*** Cross curricular links: (Literacy) specific terminology and key words and meanings discussed. (Maths) calculating material requirements for the box and measuring and marking out accurately using steel rules, try-squares marking gauges. (ICT) using 2D computer software to design image and then CAM process to get the laser cutter to produce the finished article.

Summer term

Half term 1	Half term 2
Project Title: Foods from around the world **Overview:** Design process, traditional food products from around the world, the presentation and quality of work both practical and written. Key Experiences: Analysis of the brief, research, design ideas, development of design idea; to make a ragu based sauce product; to make a product which requires the making of a flour based sauce ***Key Assessment Activity:*** To prepare and produce a variety of food dishes.	**Project Title:** Foods from around the world Key Experiences: to make a product in a wok, to make a design idea which the student has chosen and modified; to make a dessert; to make a cake based product. ***Key Assessment Activity:*** Cross curricular links: Literacy: Use of dictionaries to define key words in the brief. Effective presentation of work. Analysis of brief and research. Numeracy: Weighing and measuring. Nutritional analysis ICT: Use of PowerPoint to present their work. Internet for researching