DESIGN AND TECHNOLOGY TIMBER

GCSE

Why Design and Technology?

GCSE Design and Technology encourages you to be inventive and prepared to take design risks.
You explore the creative, engineering and manufacturing industries, as well as the importance of high-quality technology and design.

IN GCSE DESIGN AND TECHNOLOGY, YOU WILL:

GET TO CREATE YOUR OWN PRODUCT, DESIGNING A SOLUTION TO AN ISSUE.

GET TO LEARN ABOUT AND WORK WITH TOOLS AND MACHINES.

USE GRAPHICS AND OTHER DIGITAL DESIGN METHODS TO COMMUNICATE YOUR IDEAS.

DEVELOP YOUR TECHNICAL DRAWING SKILLS.

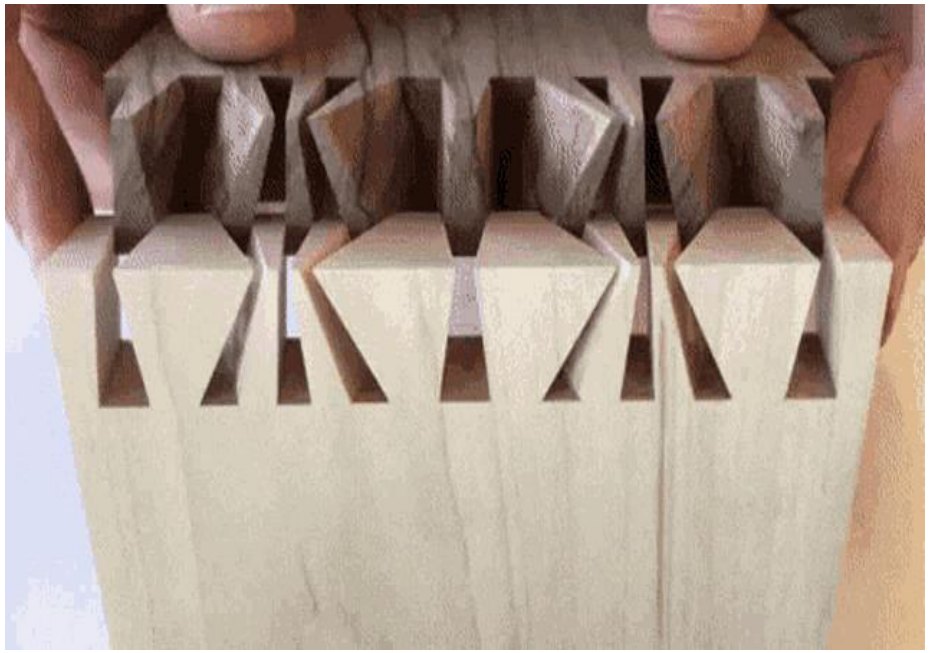
DEVELOP YOUR DECISION MAKING, ANALYTICAL AND RESEARCH SKILLS.

GAIN INSIGHT INTO SECTORS SUCH AS MANUFACTURING AND ENGINEERING.

The Course Content

50%written exam- 2 hours

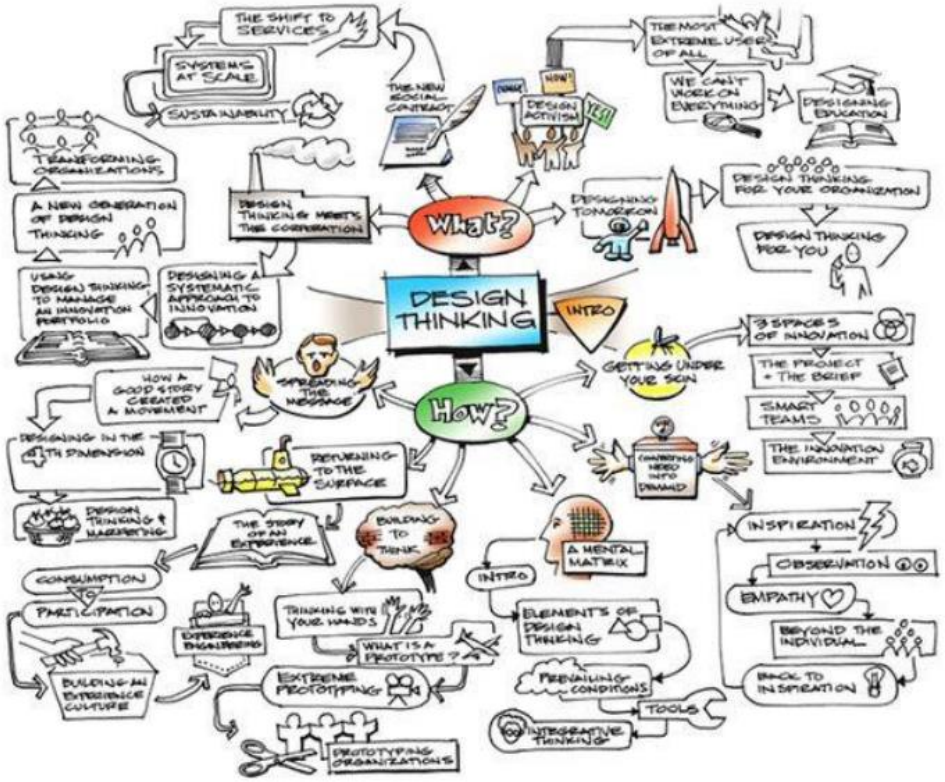
50%NEA (coursework)- written and practical.



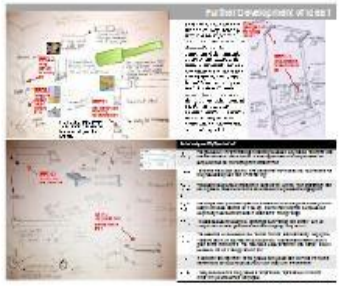
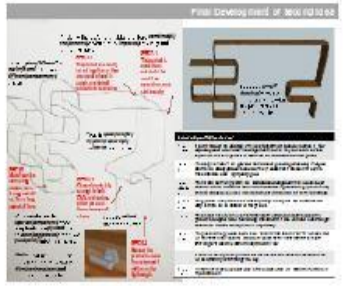
Design and Technology in the 21st Century **50%**	**Written exam** **2 hours**	Analyse existing products. Demonstrate applied mathematical skills. Demonstrate and apply their in-depth technical knowledge of working with materials, systems and manufacturing processes and techniques.
Design and Make Task **50%**	NEA- Non exam assessment Approx. 40 hours	Explore- analyse and research a given brief to identify the needs of the user. Create- design and create a solution to those needs. Evaluate- evaluations of whether the needs have been met.

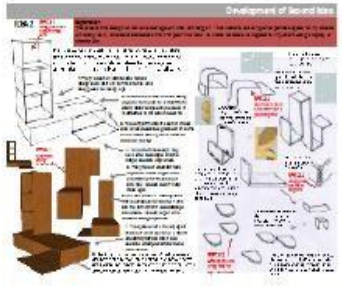
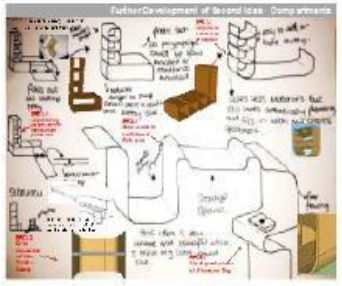
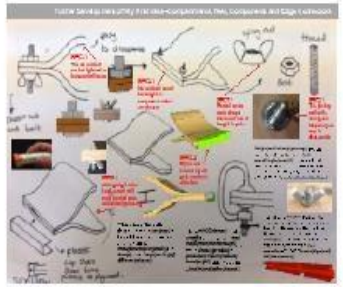
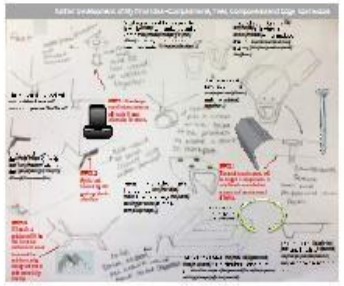
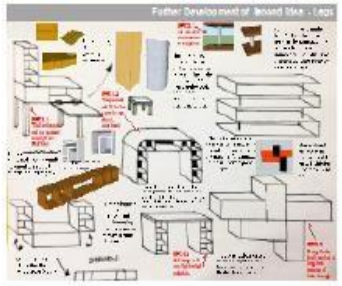
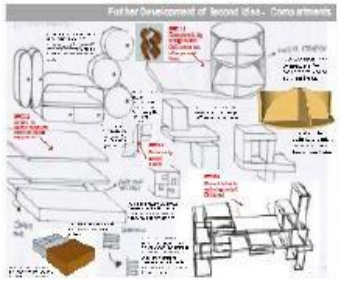
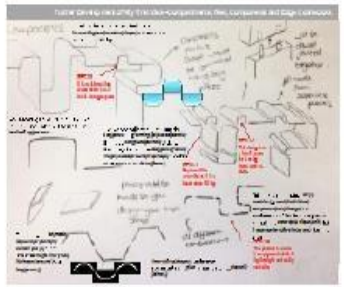
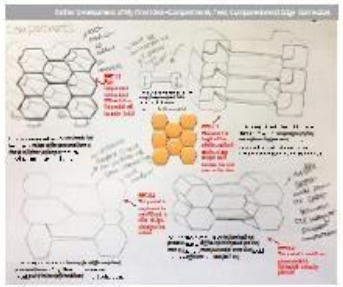
Essential skills to achieve in D&T.

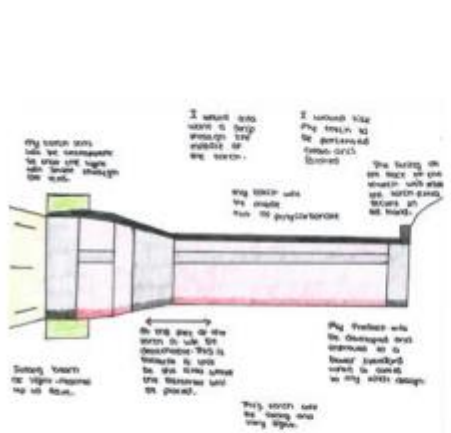
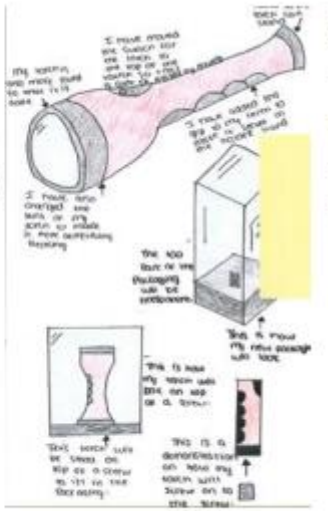
- Excellent creative thinking- able to design creative solutions to problems.
- Good maths skills- essential for both practical work and exam/theory work.
- Research, planning and analytical skills.
- Interest in the subject- interest in the theory of Design and Technology e.g. pros and cons of materials, new and emerging technologies and opportunities and constraints that influence design and making.
- Being independent, self motivated and managing your workload to meet deadlines.



Example NEA Project

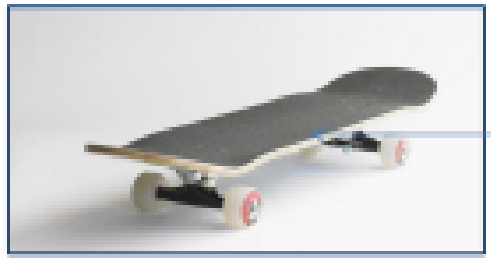



The final prototype is a neatly constructed vacuum formed HIPS shell. The learner has used a wood turning lathe to create the former from layered mdf. There is a laser cut acrylic base so that the HIPS shell fits perfectly and tightly. The bottom layer of acrylic has again been laser cut, with CAMM 1 vinyl used to create two eyes for the ladybird. Inside, the pcb is of a very high quality. It has been developed accurately and constructed well with high level skills. There are no burn marks or defects. There is a battery pack holder which has been cut from a HIPS sheet, heated using a line bender, and set at the desired angle. There are three LEDs equally spaced and neatly positioned using a pillar drill to create the holes, with LED holders mounting the LEDs in place. There is a series of holes drilled with a pcb drill to act as a speaker vent. The on/off toggle switch is located at the back of the product. The LDR is mounted onto the surface of the ladybird and each leg fits through a small pcb drilled hole. CAMM 1 vinyl spots are used to create the spots for the ladybird. The device is fully programmed, works perfectly, to complete a high quality pre-production prototype.

Example Exam Questions

Analysing products and their designs.

(c) Study the skateboard pictured below.



Skateboard deck

(i) Discuss the properties of plywood that make it suitable for use as a skateboard deck. [3]

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(ii) Name the process used to create the shape of the skateboard deck in plywood. [1]

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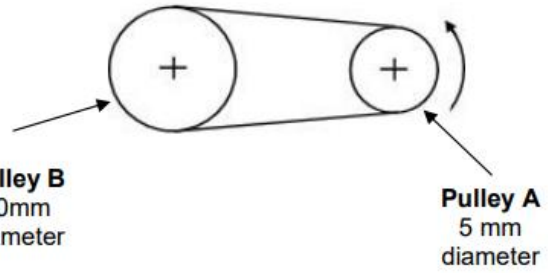
(b) The pulley system shown below is used to drive the toy vehicle.



(i) Calculate the rotational velocity (RV) of Pulley B when the motor connected to Pulley A rotates at 300rpm. [4]

(Show all workings.)

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Math based questions working out the area/ sketching dimensions.