Design and Technology

Key Stage 2 Curriculum includes -

Design

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

-understand how key events and individuals in design and technology have helped shape the world

Techicnal Knowlege

-apply their understanding of how to strengthen, stiffen and reinforce more complex structures

-understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]

Term	Yr7	Yr8	Yr9	Yr10	Yr11
Aututm 1	**Project- Eco Bots** -Health and safety -Analysing a Brief -Designing for a client -Eco design and sustainablilty -Different types of research - Secondary and Primary -Product Analysis -Specification writing -Drawing skills (3D drawing and partial shading) -Working with a range of equipment to shape and finish plastics/ metals and timber	**Project - Retro Dock** -Health and safety -Analysing a situation and writing a brief -Different types of research - Primary and secondary -Sustainable design -Material Theory -Specification writing -Product Analysis -Designing for a client -Drawing skills (Isometric , exploded views and partial shading) -CAD/CAM - Use of 2D design	**Book Mark Project -** - Secondary research - Inspiration board and Product Analysis -CAD - Use of 2D design to create design ideas . Bitmaping. - Communitacting design ideas - Refining and modeling design ideas - CAM - Use of the laser cutter - Nesting and tessilation **Technical knowledge** – **Specialist Technical Principles**	**Mock Non Examined Assessment -** Section A (10 marks) Section B (10 marks) **Technical knowledge** – -New and emerging technologies **Specialist Technical Principles** -Scales of production -Specialist techniques and processes	**Non Examined Assessment** Section A (10 marks) Section B (10 marks) **Technical knowledge** – **Core Technical Principles** -Understanding systems approach in new material -Energy Generation and storage -Revision of areas identified by PPE1

Aututm 2	-Using different manufacturing process for plastics and metals (Oven shaping and tin snipping etc)	and google sketch up -Electronics and circuits -Selecting and working with a range or equipment on wood -Displaying of practical skills by producing a variety of wood joints	**Sketching and Designing -** - Freehand drawing -Isometic drawing (without iso paper) - One and two point persepective drawing -Use of Iso skecth tool -Rendering Techniques **Technical knowledge - Specialist Technical Principles** -Surface treatments and finishes **Core Technical Principles** -Materials and their working	**Mock Non Examined Assessment** **Mechanical Devices** Section C (20marks) Section D (20marks) **Technical knowledge Designing and Making Principles** **-**The work of others - Communication of design ideas	**Non Examined Assessment** Section C (20marks) (3 pages and design work) Section D (20marks) **Technical knowledge–** Revision of areas identified by PPE1
Spring 1			**Design Challenges -** **-**Designing for a 'design situation' **-** Generating innovtive/creative design ideas - Developing and refining design ideas - Using a range of modeling medias -Producing prototypes **Technical knowledge-**	**Mock Non Examined Assessment** Section D (20marks) Section E (20marks) Pracical Outcome **Technical knowledge- Designing and Making Principles** -Prototype development -Selection of materials and components	**Non Examined Assessment** Section D (20marks) Section E (20marks) Pracical Outcome **Technical knowledge–** Revision of areas identified by PPE2

Spring 2			**Design Challenge - Perfume Packaging** -Researching into design movements - Designing for a client and user - Producing a product disassembly -Designing a protoype -Producing a net model -Use of 2D design to create final protoype	**Mock Non Examined Assessment** Section E (20marks) Practical Outcome **Technical knowledge-** **Designing and Making Principles** -Tolerances -Materials Management -Specailist Tools and	**Non Examined Assessment** Section E (20marks) Practical Section F (20 marks) Evaluation **Technical knowledge-** Revision lessons based on areas identified by PPE2/3
Summer 1			**Design challenge - Trinket Project** -Understaning and working with the resitant materials - Marking out skills - Quality assurance - Producing accurate finger and housing joints - Use of componemts (hinges) - Creating a working Jig - Using CAD to design surface pattern (rienforcement of bitmaping) -Laser cutting - Finshing techniques **Technical knowledge-** **Core Technical Principles**	**Mock Non Examined Assessment** Section F (20 marks) Evaluation **Technical knowledge-** -Mechanical Devices -Forces and stresses	

Summer2 (r			**Mock Non Examined Assessment** Section A (10 marks) Section B (10 marks) **Technical knowledge- Designing and Making Principles** -Investigation , primary and secondary data	**From June 1st - Non Examined Assessment** Section A (10 marks) **Technical knowledge-** -Understanding systems approach in new material -Energy Generation and storage	