Year 8 ~ Curriculum Map for Design and Technology (dept.)

What are the intended aims for this year's curriculum?

Students have a lesson every other week in DT

DT – To build upon workshop skills that were introduced in year 7 and create a predominately wood based lazy arm stretcher; this also introduces students to cross curricular subjects such as forces and levers. Further understanding of structures, CAD/CAM, electronics and textiles will be taught through the production of a lamp.

	Term 1		Term 2		Term 3		Term 4		Term 5		Term 6	
	Topic(s): DT To introduce how levers and linkages work alongside gears and cams. To identify how structures are used in real life situations.	Aim of A&R	Topic(s): DT To create a lazy arm stretcher. To introduce the fundamentals of electronics and safe working practice. To plan and design lamp components and create a lay plan.	Aim of A&R	Topic(s): DT To introduce how Textiles are used in products. Use different graphic techniques such as isometric sketching.	Aim of A&R	Topic(s): To identify different fabric sources. To be able to apply different decorative techniques for the lamp. To be able to plan using systems such as flow charts. To be able to sketch in isometric.	Aim of A&R	Topic(s): To understand the difference between series and parallel circuits. To use wood working tools safely and effectively for the base of your lamp. To be able to critically evaluate your work and others.	Aim of A&R	Topic(s): Use the 6 R'S to show responsibility as a designer. To introduce smart materials. To identify different requirements and properties of paper and boards. Use Micro Bit to programme a simple sequence.	Aim of EoY exam
'Big idea(s)' / fundamental concepts	Introduction to mechanisms such as levers, linkages, cams.	To assess and review. In the form of a baseline test	Creating a lazy arm stretcher to embed levers. To create an Electronics circuit using yenka.	To assess and review topics from term 2	Use the sewing machine safely and correctly. Use an embroidery loop and practice textile techniques. Understand the safe working practice of electronics and safe working practice.	-	To understand the difference between natural and synthetic fibres. To create design ideas for lamp.	An assessment of students' practical abilities.	To be introduced to the electronic components of the lamp. To recall the safe work practice on the sanding belt/disc and hand tools such as coping saws and tenon saws.	-	Identify how smart and new fibres are used in specific careers. Assemble the lampshade and explain the 6 R's. To identify the functions of Packaging. Microbit training and programming.	To assess and review a combination of topics from the food and DT rotation.
Knowledge to be learnt	To gain knowledge of 1st, 2nd and 3rd class levers. To be able to write a design brief using various context. To be able to write a specification. **To gain knowledge of structures and forces.**		Students create and make a lazy arm stretcher to embed knowledge and build hand skills. To gain knowledge of different joining methods. To understand the difference between parallel and series circuits.		To watch the you tube clip on embroidery techniques and create a scene for your lamp using the embroidery loop and thread. To be able to present design ideas using hand sketches.		To use hand tools and machines safely and accurately to create a lamp with a textile scene of their choice. To understand why different fabrics are used for different purposes.		To gain knowledge on smart materials and identify how they are added to clothing and cars for safety. To use hand tools and machines safely and accurately to create a lamp with a textile scene of their choice.		To understand where the materials go at the end of life and the 6R's To introduce the students to papers and boards and how they can be used for packaging. Programme a micro bit to play rock, paper, scissors.	
Key vocabulary	Levers 1st,2nd,3rd, linkages. Fulcrum, effort, load, input, output.		Design, Yenka, assembly.		Embroidery, thread, isometric,		Cotton, silk, wool, polyester, nylon, elastane,		Coping saw, tenon saw, series circuit, parallel circuit, sanding belt,		Programming, Microbit, designer Kevlar, thermochromic pigment, heat resistant fabrics.	
The role of reading and comprehension	Written instructions for practical tasks. Identifications of keywords.		Written instructions for using the sewing machine. Identifications of keywords.		*Written instructions* *Identifications of keywords.*		*Written instructions* *Identifications of keywords.*		*Written instructions* *Identifications of keywords.*		*Written instructions* *Identifications of keywords.*	
The role of independent extended writing	Exam questions in the summative assessments		Extension: To write a health and safety report about using a work shop.		Practical N/A		Extension: Create a report on a specific designer / influence.		Evaluation writing at the end of the project.		Extension: To write about how your carbon footprint could be reduced to help save the planets plastic and pollution crisis.	
The role of maths/ numeracy	cm-mm, percentages		Measurements, lay-plan, shapes in isometric.		Measurements, shapes.		Stock forms, sizes and shapes.				Measurements, nets, shapes.	
Links to careers/ aspirations	Engineering definitions		Electrician, Designer		Designer, Tailor		Fashion designer, tailor.		Environmental sciences, ecologist		Computer programmer, Software engineer	
Core skills	To be able to use: CAD Hand tools knowledge Safe working practice.		To be able to: Sketch to appropriate standards Safe working practice of machines		To be able to: Stich Make and design		To be able to: Understand difference between natural and synthetic fibres. Stich		To be able to: Understand the 6R'S and all about Smart materials.		To be able to: Make and design Understand nets Tessellation.	
Dept. enrichment activities	Possible school trip.		Possible school trip.		Possible school trip.		Possible school trip.		Possible school trip.		Possible school trip.	
Home learning opportunities	https://www.youtube.com/watch?v=eTa2EFd3JF0 Levers in the human body		https://www.youtube.com/watch?v=js7Q-r7G9ug Electrical circuits explained		https://www.youtube.com/watch?v=kYqn4QhUqe4 Isometric drawing skills explained		https://www.youtube.com/watch?v=XnPagKUUPQw Decorative techniques		https://www.youtube.com/watch?v=VTfgNFz1DBM Climate change.		https://web.microsoftstream.com/video/351efcc5-ddcc-4d12-950a-34eb689ac78f How paper is made	