REPSONDING TO DESIGN SCENARIOS	DESIGN DEVELOPMENT	HEALTH AND SAFETY	MARKING AND MEASURING	USING SOFTWARE
PRODUCT ANALYSIS	VISUAL COMMUNICATION TECHNIQUES	PROPERTIES OF MATERIALS	OPERATING MACHINERY	QUALITY CONTROL
CLIENT PROFILING	ANTHROPOMETRICS AND ERGONOMICS	SUSTAINABILITY	PROTOTYPING	3D MODELLING

KS3 DESIGN ROTATION – CURRICULUM OVERVIEW

CADCAM

FOOD

MUSIC TECH

3D DESIGN

SURFACE DES.

TEXTILES
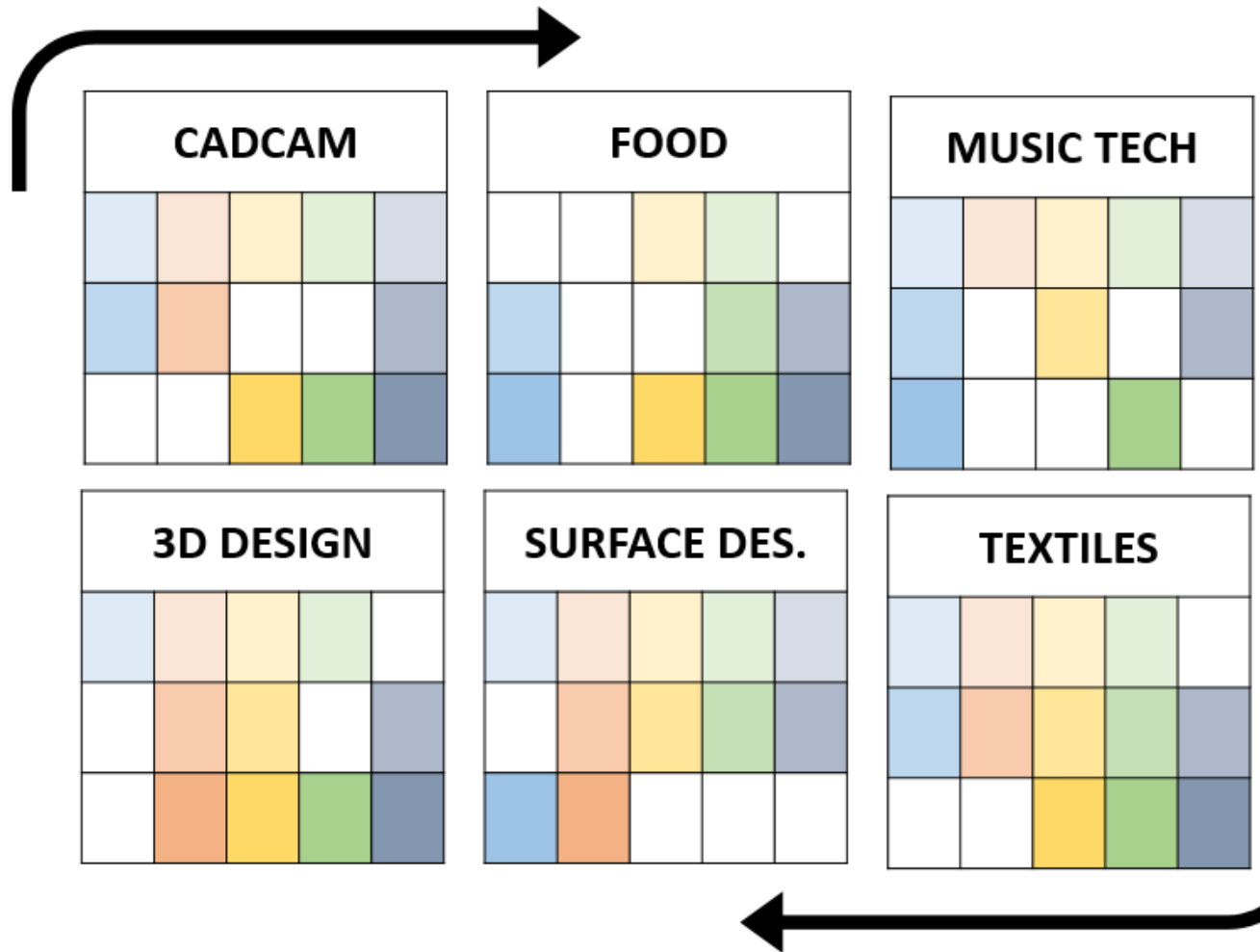
Knowledge builds and connects over time

Each rotation will develop;

- Understanding of the design process
- Specialist technical skills
- Confidence using shared concepts and vocabulary

The design process

Research

Ideas

Plan

Make

Evaluate

KS3 Curriculum Intent

Intent		What new knowledge/content do we introduce?		How does this curriculum go beyond the National Curriculum? How does going beyond the NC ensure challenge?
By the end of KS3 students are able to…		**Each teaching group rotates around our 6 specialism in year 8 and 9**		
After following the complete rotation pupils will have; • developed the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world • build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users • critique, evaluate and test their ideas and products and the work of others • understand and apply the principles of	**CADCAM**	**Lesson sequence**	**Progression of knowledge and skill**	Students are able to build and connect knowledge over time by revisiting the design process; research, ideas, plan, make and evaluate throughout each specialism. Students will also develop confidence using shared design concepts and vocabulary. Students are challenged through the range of specialisms they will experience, allowing them to explore a wide variety of ways of designing and making using specialist technical skills
		'I can research information in response to a design brief': • Develop design research skills • Become familiar with Art Deco and Steampunk	**RESEARCH / IDEAS** / PLAN / MAKE / EVALUATE • Understand the design process, differences between design brief and specification • Develop knowledge of design eras and styles (Art deco/steampunk) • Become familiar with tools and processes used in CADCAM • Understand the difference between CAD and CAM • Apply learning to an existing product	
		'I can develop my ideas using secondary research': • Understand the difference between secondary and primary research • Visually communicate using composition	**RESEARCH / IDEAS / PLAN** / MAKE / EVALUATE • Look at existing products and suggest the target market • Discuss customers preferences and how this influences their consumer habits • Understand the importance of clear visual communication • Understand the difference between primary and research methods • Apply learning in creating a mood board for the design style of students choosing	
		'I can develop appropriate design ideas using research': • Avoid **design fixation**, not immediately thinking of a final outcome • Apply your knowledge of design movement to a product	**RESEARCH / IDEAS / PLAN** / MAKE / EVALUATE • Know what design fixation is, how it affect the success of a design/er and how to avoid it • Develop understanding of design as an iterative process • Rapid design idea generation, discouraging design fixation • Knowing how to modify a singular design idea in order to create several	
		'I can analyse the work of others': • Evaluate what makes a successful or unsuccessful design • Use your findings to develop your own ideas	**RESEARCH / IDEAS / PLAN** / MAKE / EVALUATE • Build on knowledge from previous lessons, using products which are not 'relevant' to design brief to avoid design fixation • Students use the acronym ACCESS FM to evaluate designs, this encourages their analysis to consider many different factors of design • Developing their own design ideas using what they have learnt during the lesson, additional developing their annotation skills using ACCESS FM	
		PROGRESS REVIEW	**RESEARCH / IDEAS / PLAN** / MAKE / EVALUATE • Assess knowledge of design concepts taught in previous lessons • Develop research, ideas and planning in order to create a product which is successful, e.g. meets design brief and design specification • Students discuss the impact of designing a product, which does not fit the above; design success, career & profit.	
		'I can produce a final design in response to a design brief': • Consolidate your research findings • Produce a final design using visual communication skills	**RESEARCH / IDEAS / PLAN** / MAKE / EVALUATE • Students consolidate all of their research and ideas to create a final design • Annotated using ACCESS FM • Students develop knowledge of visual communication skills; perspective, orthographic, exploded	

nutrition and learn how to cook.

Pupils will also learn how to problem solve and take risks, becoming resourceful, innovative, enterprising and capable citizens. They will develop a critical understanding of design and its impact on daily life and the wider world and how high-quality design makes an essential contribution to the creativity, culture, wealth and well-being of the nation. | | | • Introduce how designs are transferred into 2D design software | We also offer additional opportunities such as

Architecture day in partnership with local architecture firms and the University of Cambridge

Design Ventura competition

Drop down food days

Extra-curricular music technology club

Weekly After school art / textile club |
| | | *'I can produce a lay plan for laser cutting'*:
• Explain how to reduce material wastage
• Understand how to explode drawings in preparation for laser cutting | RESEARCH / IDEAS **/ PLAN** / MAKE / EVALUATE
• Create a cardboard model of their product using design drawings
• Depending on colour schemes and material choices, explode the design to be suitable for 2D design/vectorisation
• Evaluate product and suggest steps for improvement in next lesson, e.g. change scale. (depending on intended product outcome) | |
| | | *'I can use 2D design tools'*:
• Accurately apply measurements
• Transfer physical designs into computer software | RESEARCH / IDEAS **/ PLAN / MAKE** / EVALUATE
• Describe the tools available in 2D and explain what they're used for
• Know how to trace an image in 2D design
• Know how to vectorise an image in 2D design
• Develop knowledge of computerised software, which utilises vectors.
• Accurately apply measurements and tolerances. | |
| | | *'I can use vector tools in 2D design'*:
• Troubleshoot problem in 2D design
• Apply quality control techniques | RESEARCH / IDEAS / **PLAN / MAKE** / EVALUATE
• Continue to apply learning from previous lesson to produce a 2D design file which will accurately produce final outcome on a laser cutter | |
| | | *'I can design appropriate product marketing tools'*:
• Apply understanding of target market
• Communicate USP's of product | **RESEARCH / IDEAS / PLAN** / MAKE / EVALUATE
• To complete whilst product are being laser cut
• Students should be able to communicate who their customer is and create resources that appeal to them
• Students peer evaluate work to identify unique selling points. | |
| | | *'I can construct a prototype'*:
• Apply quality control techniques | RESEARCH / IDEAS / PLAN / **MAKE** / EVALUATE
• Construct prototype using appropriate joining methods
• Compare outcome against design brief, specification and final design
• Develop knowledge of materials, timber and plastic | |
| | | *'I can evaluate a prototype'*:
• Collect client and consumer feedback
• Evaluate a product against a design brief and specification | RESEARCH / IDEAS / PLAN / MAKE / **EVALUATE**
• Have you met the design brief?
• Have you met the design specification?
• Have you avoided design fixation?
• What went well/Even better if | |

	Rationale for this sequence	Lesson sequencing follows the design cycle of research, ideas, plan, make and evaluate. This embeds the concept of design iteration with students and encourages a continuous process of design. In a real world design situation, this would ensure that the product design is suitable for purpose and will sell successfully. All skills build on each other as the project progresses to scaffold learning and ensure that all learners design and make a successful prototype. CAD software is introduced once all learners have practiced marking and measuring methods, this supports students in transferring their physical designs into computer-aided software, where some of the skills are harder to visualise; e.g. scale. .
	How does the KS3 Curriculum build on previous learning at KS2?	Students come to us with mixed knowledge and skills from KS2 so we build on prior learning, establishing a use of the design process and building on shared concepts and vocabulary throughout the two-year rotation. All with a focus on enjoying practical experiences. We also build on learning in KS3 Art lessons.