Programme of Study: Product Design

Year	Year 7	Year 8	Year 9	Year 10	Year 11
INTENT	Study begins with an introduction to the concept of health and safety in a workshop. Learners will then extract 2d shapes from a given designer (Milton Glaser) to design a pattern repeat which will then be applied to fabric using fabric pens	Y8 Product Design journey by developing their analysis and research skills to gain an understanding of existing products and the use of biomimicry in design. Students will learn how to communicate their design ideas through 2D sketches and how to develop design ideas using SCAMPER and cardboard modelling techniques through the form of nets to create a template. Learners will gain new CAD skills to produce a vector drawing on Illustrator. The students' designs will then be laser cut ready for learn how to cut (low and slow), form and shape/bend acrylic. The next part of the students' journey will be a recap into the health and safety of the workshop. Moving on to explore material properties, electronics through making a circuit and experimentation of various manipulation techniques. Learners will develop their laser cut designs by making additional components for their lighting design.	The journey will begin with a product analysis and evaluation of existing products. Students will look at real life problems to be able to select the correct size information for constructing cardboard templates for component parts. They will then test their design and making skills by manufacturing a bucket hat.	AQA Art and Design: 3D Design Assessment Objective criteria for Y10 + Y11: AO1: Develop ideas through investigations, demonstrating critical understanding of sources. AO2: Refine work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes AO3: Record ideas, observations and insights relevant to intentions as work progresses. AO4: Present a personal and meaningful response that realizes intentions and demonstrates understanding of visual language.	**Component 1 - Oh sit down (Michael Thonet) + Personal Response** **Component 2 ESA** **Final Assessment**

Implementation: Knowledge and Concepts	**Introduction to the Workshop** **Health and safety:** procedures when using equipment such as the tenon saw, pillar drill, rasp and flat file **Measuring**: (converting cm to mm) **Marking out:** accurately using a steel rule and tri-square **Cutting:** in a straight line **Finish:** Remove and smooth using a rasp and flat file **Drawing:** a technical drawing – front, side and top **Analyse**: art & crafts movement and Memphis design. Extracting visual information – using FACE	**Analyse** – existing product design **FACE –** to apply and understand. **Research -** study of biomimicry – taking inspiration from nature (animals). Create own moodboard for inspiration. **Sketching/drawing:** How to draw for purpose going from 2D, modelling in card then onto CAD to create a 3D outcome. **Annotation –** to explain design ideas and decisions. Explaining opinions/thoughts. **Rendering** - design ideas to make sketches look like the material being used: acrylic. **Creativity/Creative Design:** Using SCLPT to extract animal forms to design and develop a workable design with humanized features. To increase imagination and creativity to come up with own design ideas through investigation of shapes. **Applying research:** to create individual, unique and creative design ideas. **Design:** symmetrical/asymmetrical + geometric shapes/designs to resemble animal forms. **Modelling with cardboard** – construction of flat pack (nets) to create a 3D form. Design a 2D net template of design idea to understand how it might	**Target user:** Identify the problems and create a product that solves the problems and meets the needs. **Problem Solving Knowledge:** be able to develop a shape into a product **Designer Research:** Include design features from designer's work: Zaha Hadid (through SCLPT). Focus of incorporating colour, pattern and texture. **Evaluate:** past and present design. Know about the different design ideas, specific designers and design eras. **Acronym PIES:** Know the physical, intellectual, emotional and social needs of user groups (PIES). **Acronym TIPS:** Theme, Inspiration, principles and styles and how it influences design. **Acronym:** Be able to describe the FACE and SCLPT of their ideas **Design:** a mood board (Home learning). Create a design idea using designer research as inspiration based on a theme of architecture. **Template:** models to develop the concept. **Modelling:** cardboard modelling focusing on scale, multiply, layers, combining	**AQA Art and Design: 3D Design** **Assessment Objective criteria for Y10 + Y11:** **AO1: Develop ideas through investigations, demonstrating critical understanding of sources.** - Mind Map - Moodboards - Designer Research + analysis - Primary and secondary resources - Make connections between different images - Make connections between their ideas and the work of others **AO2: Refine work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes** - Use a range of different media, processes and techniques - Experiment with different scales and forms – large/small or close-ups, 2D or 3D - Try out different combinations of media and techniques - Practice and improve your control of your chosen media - Make clear links between your work and that of other artists or designers - Keep a record of examples using different approaches and experiments - Evaluate images and designs in your sketchbook - **Improve ideas because of experimentation**	**Component 1 - Oh sit down (Michael Thonet) + Personal Response** • Documentation of each process/stage – photos or screenshots • Chosen experiments 3-4 • Design ideas 1 & 2 • Final Design • Investigation into pattern and surface finishes • Material manipulation • Construction of product – use of various construction techniques • Complete final product/design. **Component 2 ESA** • Mind map starting point word • Research Designer • Research Analysis

	(Function, Appearance, Construction and End User) **Evaluate** – I see, I think, I wonder + I conclude	work when folded into a 3D model/product. **Template:** create and make a template to scale. **Cutting skills:** Use of scissors to accurately produce a template. **Measure:** their own single measurements. **CAD/CAM** - Learn how to produce a vector drawing on Illustrator and how to document the design journey. **Health and safety:** introduction on how to use a coping saw, fret saw, disc sander and line bender. Be able to set up the pillar drill. **Manipulation/experimentation:** learn how to cut (low and slow), form and shape/bend acrylic. Cutting curves and creating shapes with a coping saw/fret saw. Smooth cut – minimal teeth marks. **Electronics:** to make a circuit. **Material properties –** polymers. To know what a polymer is. **SCAMPER –** develop design ideas. **Joining method** – various fastening methods. **Finishes** – to know the difference between hand cut and laser cut. **Evaluate:** against a specification and link back to target user and design brief. To also use personal and peer	parts/ideas, eliminating parts and reverse/rotate/reflecting ideas. **Prototype** - make a prototype out of card to test function. **Cutting skills:** use of knife to cut details into design ideas. Select their own cutting method for their final model. **Specialist equipment** **Surface finish**: Create surface pattern and texture using various techniques and processes. **Using the design processes** - iterative process **Fixing methods** be able to use and select appropriate fastenings, bolts, screws, nails, wing nuts, fixings. **Construction Techniques:** bringing together multiple parts via construction process: Dowel joint Lap joint Rebate Joint X-Slot • **Independence:** to be able to select and use their own tools to make their design. • **Quality assurance/control:** produce high	**AO3: Record ideas, observations and insights relevant to intentions as work progresses.** **Initial Ideas:** - Make use of drawings, sketches, photographs and experiments with different media - Collect images from a variety of sources - Use Primary and Secondary sources to inform ideas - Organise initial research in sketchbook before moving on to the development of ideas **Developed Ideas:** - Be open to all possibilities - Try out different layouts or combinations of images and ideas - Experiment with different media, techniques and scale - Use annotations alongside sketches, designs and images - Add written commentary to document thoughts + opinions - Organise studies into a sequence that shows the development of your ideas **Reflection:** - Consider how ideas have been selected and developed - Think about how various media and processes have been used - Refine and develop skills and approaches as ideas progress	

		evaluation to move ideas forward (as developments)	quality products by applying symmetry, alignment, presentation and finish. • **Product Evaluation:** Test and evaluate using data, against a specification and by conducting a consumer evaluation.	- Think about how ideas could be developed further - Finish with an evaluation of the whole project, point out strengths and weaknesses as well as what could be achieved with further work **AO4: Present a personal and meaningful response that realises intentions and demonstrates understanding of visual language.** - Consider different themes or approaches to the brief - Carefully select and study the source material - Make a personal choice about materials, media and working processes - Experiment and control chosen media, materials and techniques - Record and develop ideas in a personal way - Organise and present work carefully - Realise intentions, develop and complete a final piece or pieces	
Implementation: Content	**Project name: Blockhead Focus: Function Theme: Toys and Play**	**Project name: Biomimicry Lighting project (CAD + Workshop) Focus: Appearance Theme: Animals - 'Biomimicry'**	**Project name: Hold it Focus: Construction Theme: Architecture**	**Y10:** • Experiment with card construction, wood and wire and creating texture using heat • Marker rendering • Designer research • Mood boards • Experiment in the style of the designer • Sample techniques	

				Project: Dyson • Photograph resources • Fine line drawings • Swiss repeat printed sample • Print repeat • Development of design **Project: Acrylic clocks** • Designer research • Mood boards • Design ideas • Deconstruct product • Reassemble/manufacture idea **Component 1 – Oh sit down (Michael Thonet)** • Mind map starting point words Manipulate and Distort • Designer research • Designer analysis • Mood boards • Extract SCLPT from mood boards – through initial 2D + 3D sketches. Formal drawings: Orthographic drawings (front, side and top views) • Experiments (SCLPT) minimum x4 - 'make in the style of'	
Implementation: Key skills	Making measuring, cutting, drawing Analysing, Design and Evaluate	Making measuring, cutting, drawing Analysing, Design and Evaluate	Making measuring, cutting, drawing Analysing, Design and Evaluate	Making measuring, cutting, drawing Analysing, Design and Evaluate	Making measuring, cutting, drawing Analysing, Design and Evaluate

Implementation: Key terms	Equipment such as the tenon saw, pillar drill, rasp and flat file steel rule and tri-square Memphis design. Extracting visual information – using FACE (Function, Appearance, Construction and End User) Milton Glaser	**Biomimicry** **Manipulation/experimentation:** symmetrical/asymmetrical + geometric **Manipulation/experimentation:**	Dowel joint Lap joint Rebate Joint X-Slot **Prototype** **Acronym PIES:** Know the physical, intellectual, emotional and social needs of user groups (PIES). **Acronym TIPS:** Theme, Inspiration, principles and styles and how it influences design. **Acronym:** Be able to describe the FACE and SCLPT of their ideas	Orthographic (SCLPT) Reassemble/manufacture idea Designers Dowel joint Lap joint Rebate Joint X-Slot **Prototype** **Acronym PIES:** Know the physical, intellectual, emotional and social needs of user groups (PIES). **Acronym TIPS:** Theme, Inspiration, principles and styles and how it influences design. **Acronym:** Be able to describe the FACE and SCLPT of their ideas	Orthographic (SCLPT) Reassemble/manufacture idea Designers Dowel joint Lap joint Rebate Joint X-Slot **Prototype** **Acronym PIES:** Know the physical, intellectual, emotional and social needs of user groups (PIES). **Acronym TIPS:** Theme, Inspiration, principles and styles and how it influences design. **Acronym:** Be able to describe the FACE and SCLPT of their ideas
Implementation: Cross curricular links and CEIAG	**PD:** They will understand the rules associated with workshop safety. They will be given the opportunity to gain confidence with various equipment making skills. Students will learn how to	PD: Learners will be able to apply individuality through a selection of target user problems Business studies: They will explore different types of manufacture i.e. job, batch, mass They will ensure products are safe to use as required by law. PSHE: Sustainability? Environment? Science: Sustainability? Environment?	PD: Learners will be able to apply individuality through a selection of target user problems Business studies: They will explore different types of manufacture i.e. job, batch, mass They will ensure products are safe to use as required by law. PSHE: Sustainability? Environment?	D: Learners will develop their creativity by responding to a brief. Learners will manufacture more complex products building on skills developed in KS3 Geography: They will understand why and how they need to protect the world, how fashion can be sustainable Art: They will develop their fashionable illustration drawing skills. Math's: Learners will use their own measurements to create their own component templates.	PD: Learners will develop their creativity by responding to a brief. Learners will manufacture more complex products building on skills developed in KS3 Geography: They will understand why and how they need to protect the world, how fashion can be sustainable Art: They will develop their fashion illustration drawing skills. Math's: Learners will use their own measurements to create their own component templates.

	extract information using the acronym FACE. With this they will then be able to extract relevant information. **Engineering Science Math's –** converting CMS to mms	Math's: Learners will be able to measure specific dimensions to then make sizing selections.	Science: Sustainability? Environment? Math's: Learners will be able to measure specific dimensions to then make sizing s		
Impact: Assessments (Summative and formative)	All project work is marked holistically, and students are given feedback through whole class sheets as a mid-project and end of project. Office forms will be used to monitor learners' understanding of the	All project work is marked holistically, and students are given feedback through whole class sheets as a mid-project and end of project. Office forms will be used to monitor learners' understanding of the theoretical aspects of the course. This will be set as a home learning activity. A summative mark is also given against specific assessment criteria. Lesson by lesson, students are given verbal feedback on progress.	All project work is marked holistically, and students are given feedback through whole class sheets as a mid-project and end of project. Office forms will be used to monitor learners' understanding of the theoretical aspects of the course. This will be set as a home learning activity. A summative mark is also given against specific assessment criteria. Lesson by lesson, students are	https://filestore.aqa.org.uk/resources/art-and-design/specifications/AQA-ART-GCSE-SP-2016.PDF Aqa GCSE Art and design criteria	https://filestore.aqa.org.uk/resources/art-and-design/specifications/AQA-ART-GCSE-SP-2016.PDF Aqa GCSE Art and design criteria

	theoretical aspects of the course. This will be set as a home learning activity. A summative mark is also given against specific assessment criteria. Lesson by lesson, students are given verbal feedback on progress.		given verbal feedback on progress.		
Links/Support at home	Use of student resources located within WHS sharePoint for students Building upon interests which form throughout the topics studied by practising at home Gallery visits/attend artists workshops Cooking and baking at home, especially practising the skills developed in school Practising the skills developed in 2D and 3D design Use of Youtube tutorials for further practise on the sjkills covered Participation within national competitions promoted by the Technology Department alongside school based competitions via social media/posters Participating in enrichment opportunities and clubs (both in and out of school)				