Programme of Study: 3D Design

KS2/3 Underpinning Concepts		Year 10	Year 11	KS5 & CEAIG Opportunities	Links to SMSC
Form, Space & Structure **KS2**: Explore basic 3D shapes, balance, and simple construction. **KS3**: Develop complex forms, consider spatial relationships, and structural integrity. **Materials & Techniques** **KS2**: Use everyday materials (paper, card, clay); basic joining methods. **KS3**: Work with varied materials (wood, plastics, textiles); refine techniques and tool use. **Design Thinking** **KS2**: Generate ideas, sketch, and make simple models. **KS3**: Respond to briefs, iterate designs, and solve design problems creatively. **Visual & Spatial Awareness** **KS2**: Understand how 2D becomes 3D; explores scale and proportion. **KS3**: Apply perspective, plan layouts, and consider user interaction with space. **Creativity & Expression** **KS2**: Express ideas through making and decoration. **KS3**: Develop personal style, communicate concepts, and explore thematic responses. **Evaluation & Reflection** **KS2**: Talk about their work and suggest improvements. **KS3**: Critically analyse designs, refine outcomes, and respond to feedback. **Cultural & Historical Context** **KS2**: Learn about artists and designers. **KS3**: Explore design movements, cultural influences, and contextual relevance. **Purpose & Sustainability** **KS2**: Make for a purpose; consider reuse and recycling. **KS3**: Design with function, audience, and environmental impact in mind.	Autumn 1	**Introduction to Drawing Techniques** • **Technical Drawing -** Introduction to oblique, isometric, crating, and line-weight drawing techniques to communicate 3D form. • **Rendering & Visual Communication -** Exploration of graphite, coloured pencil, and spirit-based marker rendering, supported by digital design using CorelDRAW. • **Digital Modelling -** Development of CAD/CAM skills through CorelDRAW and SketchUp to create and refine 3D prototypes.	**Product Development & Evaluation (coursework focus)** • **Product Manufacturing -** Planning, designing, and producing outcomes with efficiency and attention to detail. • **Product Analysis -** Evaluating products for quality, functionality, and design effectiveness. • **Testing & Data Recording -** Conducting performance tests, documenting results, and analysing findings to inform improvements.	**Academic pathways:** A Level 3D design A Level Art A level Photography A Level Design Technology A Level Graphic Design BTEC qualifications in craft and design **Career pathways:** Architect Product designer Interior Designer Photographer Materials engineer Teaching Games designer Robotic engineering Urban Planner Landscape Architect Industrial Designer Furniture Designer Exhibition Designer Set Designer (film, theatre, TV) Sustainable Design Specialist	**Spiritual Development:** Allow students to design projects that reflect their personal interests, cultures, or beliefs. **Moral Development:** Students are asked to consider and develop ideas around moral considerations such as the impact of consumerism and design on our world and how this can be minimized. Or through designing a product to meet a specific need for those in our local community. **Social Development:** Students work in a variety of ways, with a mixture of individual and collaborative learning helping to develop their communication skills with their peers and members of staff. **Cultural Development:** Cultural exploration is carried out through a range of design briefs and research tasks. Pupils are asked to research different cultures, historic moments in design history and biomimicry.
	Autumn 2	**Exploring Materials, Techniques & Critical Thinking** • **Practical Techniques -** Hands-on exploration of materials and making processes to support creative outcomes. • **Digital Tools -** Use of CorelDRAW, CAD/CAM, and laser cutting to develop and produce design work. • **Drawing & Design Development -** Observational drawing, abstraction, and pattern creation to inform design ideas.	**Finishing Techniques & Communication (coursework finalisation and presentation)** • **Finishing Techniques -** Finalising and presenting the completed product with attention to detail and craftsmanship. • **Design Statement -** Writing a clear and reflective statement to communicate the concept, process, and design decisions.		
	Spring 1	**Cultural Context, Research & Presentation** • **Design Briefs & Art Movements -** Exploration of cultural identity and key art movements to inform contemporary design thinking. • **Research & Presentation -** Development of effective visual and written presentation skills, supported by in-depth designer research. • **Observation & Analysis -** Critical observation of existing designs, objects, and environments to support analytical and creative decision-making.	**Theme Exploration, Research & Idea Generation (examination preparation)** • **Exam Themes & Mind Mapping -** Exploration of potential exam themes through detailed mind mapping to generate and organise creative ideas. • **Artist Research & Analysis -** Study of relevant artists and designers, focusing on techniques, materials, and conceptual influence. • **Design Ideas -** Development of original design concepts informed by research and theme exploration.		
	Spring 2	**Practical Exploration & Contextual Understanding** • **Practical Techniques -** Experimentation with a range of artistic and design methods to support creative development. • **Primary Sources & Evidence -** Collection and use of first-hand sources to inform design decisions and contextual relevance. • **Designer/Artist Analysis -** Critical study of designers and artists to understand influence, style, and impact on personal work.	**Concept, Development & Prototyping (final outcome development)** • **Design Ideation -** Creation of initial concepts inspired by research and personal interpretation of the theme. • **Design Development -** Refinement of ideas through drawing, experimentation, and feedback. • **Modelling & Final Outcome -** Production of models, prototypes, or trial pieces to test materials, scale, and composition in preparation for the final outcome.		
	Summer 1	**Ideation, Development & Prototyping** • **Design Ideation -** Generation of a range of creative concepts in response to design challenges. • **Design Development -** Refinement and evolution of selected ideas through drawing, modelling, and feedback. • **Prototyping & Modelling -** Testing and presenting ideas in 3D form using practical and digital methods.	GCSE Examinations		
	Summer 2	**Materials Testing & Critical Evaluation** • **Materials & Techniques Testing -** Experimentation with a range of materials and methods, recording outcomes and adapting approaches. • **Critical Analysis -** Evaluation of design work with focus on strengths, weaknesses, and areas for improvement.			