

Subject overview: KS4- Three-Dimensional Design

Subject Rationale (Intent) linked to [whole school curriculum mission](#)

Design and technology prepares students to participate in tomorrow's rapidly changing technologies. They will learn to be curious thinkers and intervene creatively to improve quality of life. The subject calls for students to become autonomous and creative problem solvers, as individuals and members of teams.

Additional details

We believe secondary art and design builds on the skills and knowledge pupils have already learnt at primary school. It leverages increasingly sophisticated resources, including dedicated teaching environments, manufacturing equipment and specialist teaching. As students' progress through this phase, they may be given the opportunity to focus on specific aspects of the subject such as art, product design, food technology and engineering, with its core always encompassed around creativity and imagination. Over the year, students will build their confidence in using such machines and techniques to take forward into their own independent learning.

The key aim is to help students learn to design and make products that solve genuine, relevant problems within different contexts whilst considering their own and others' needs, wants and values, and enabling students in making links through transferable skills in other subjects. To do this effectively, they will acquire a broad range of subject knowledge and draw on additional disciplines such as mathematics, science, engineering, computing and art.

YEAR 10

TERM	Topic sequence (What are you teaching?)	Topic sequence rationale (Why are you teaching this? How does it link to prior learning? Any notable links to St Edmund's curriculum mission)	Main method of assessment?
Term 1:1	<p>Skill and independence The first term is dedicated to skill building, the range of skills they will cover are:</p> <ul style="list-style-type: none"> • Tech soft and laser cutting - This will allow students to turn 2D Images into 3d forms where they will be able to use a variety of drawing tools on CAD software to then print these off using a variety of materials using the laser cutter. In addition setting up the laser cutter for different materials and importing and exporting files. Students will create an small model using the laser cutter using Art Deco as an influence. • Kerfing - This will allow students to create more curved forms from flat rigid materials and will be created using Techsoft and the laser cutter to help recall skills learnt previously. students will create a curved object of their own design using MDF. • Sketch up, Rendering, 3D printing - Students will learn how to create 3D shapes using sketch up and will be shown rendering techniques and how these models can be printed via a 3D printer or resin printer Student will design an object based around De Stijl. • Wire modelling - Students will be shown how to use wire to model 	<p>This course is a hybrid of art and design and design technology; it allows students to explore their creativity while problem solving:</p> <ul style="list-style-type: none"> • The purpose of these skills is to give students a solid foundation of knowledge and processes and techniques to explore the area of 3D design and to thoroughly explore their chosen theme for their GCSE project. • It also encourages independence so students are able to complete models and 3d works safely without close supervision of the teacher, this will increase work rate and productivity of the students lesson time. • These foundation skills allow students to develop their own ideas using their creativity to produce a range of models based around various design eras. • Students will have a scientific understanding how materials and adhesives work and the and will be able to make informed decisions when selecting materials to use for future projects • Students will need to apply mathematical skills for measuring and marking and working out areas, volumes and circumferences of a circle. • Students will have the opportunity to evaluate their outcomes and explain the pros and cons of each process and consider how to use them in the future. 	<ul style="list-style-type: none"> • Peer assessment • Self assessment • SPAG • CTG and ways to move forward • iterative design process • annotation and evaluation of models made. • Judgements are informed by the GCSE Assessment framework and knowledge of expected standards.

	<p>simple objects and the tools used for these and how clay and other materials can be added to these frames to create substance and depth.</p> <ul style="list-style-type: none"> ● <u>Casting: Plaster, cement and Resin</u> - Students will be shown how to make a mould/ former using MDF and the restrictions on these students will then vacuum form their mould and will use this to cast using plaster cement and resin. These will be based around the theme of pop art. ● <u>Castellation</u> - Students will be shown how to assemble sheet material together using castellation. students will make a small box with different surface texture on each face 		
<p>Term 1:2</p>	<p>Students start their main GCSE project This will make up 60% of theory GCSE grade. Students need to choose a theme for their project such as natural forms, architecture, sea life, etc...</p> <p>Students will cover the following things during this half term:</p> <ul style="list-style-type: none"> ● Mood board and analysis of theme - students start to look at their chosen theme and analyse this using a mind map exploring all possible areas they could take their project in. Students will then create a mood board based around their chosen theme. ● Observational studies and photography - Students need to 	<ul style="list-style-type: none"> ● Students are to have a deeper understanding of their chosen theme to avoid coming up with ideas that are too literal and more creative allowing them to access higher marks. ● Gaining a mixture of primary and secondary resources will allow students to create links with the theme and develop their creativity and give them access to higher mark bands. ● Using a range of different processes allows students to work to their strengths and produce higher quality work. ● students will have been exposed to different art and design movements in term 1:1 and should be able to recall this information. Allowing students to select their own chosen path of influence gives them more ownership of their project. 	<p>Ongoing assessment of Personal Portfolio against Assessment Objectives 1 - 4.</p> <p>Judgements are informed by the GCSE Assessment framework and knowledge of expected standards.</p>

	<p>photograph subjects relating to their project, this may cause them to do their own independent visits to get primary resources. students will be shown how they can edit these to get various effects from one picture. Some students can do observational drawings if confident if not they can use CAD software to draw objects based around their theme</p> <ul style="list-style-type: none"> ● Model making based on theme - Students will use prior knowledge from term 1:1 to create some models based around their theme. ● Artist research - Students start to look at 2-3 artists/ designers or design eras. they like and may link with their project. this could be through, colour, line, tone, theme etc... students then create an artist research page analysing the designer/ artists work and creating a personal response to the artists using skills learnt in term 1:1. 		
Term 2:1	<ul style="list-style-type: none"> ● Thumbnail Sketches - students create a series of designs based around their theme and the artist research ● Model making - Students create a set of models based around their thumbnail sketches ● Sketch up developments - Students start to develop their best design using sketch up. 	<ul style="list-style-type: none"> ● Students start to bring together all of the work and use 2d and 3d source material to create their own design. This allows students to use their previous work to create designs. ● Students are to recall skills learnt in previous years and earlier in the year to create models of their own design. This develops creativity, problem solving as well as allowing students to explore their own journey of creativity. ● Students are able to create designs playing to their strengths and personalising their creative journey ● Reviewing and evaluating ideas allows students to work iteratively, constantly developing and improving work. 	<p>Ongoing assessment of Personal Portfolio against Assessment Objectives 1 - 4.</p> <p>Judgements are informed by the GCSE Assessment framework and knowledge of expected standards..</p>
Term 2:2	<ul style="list-style-type: none"> ● Model making - Students start to make 	<ul style="list-style-type: none"> ● Creating a final design allows students to create a challenging 	Ongoing

	<p>sections of their developed ideas</p> <ul style="list-style-type: none"> ● Final Design - Students start to design their final design bringing together all of the samples models, research and evaluating together to create the best possible response to the coursework project. ● Practical plan - Students start to plan how they will make and construct the final product. 	<p>final design based on research and the work of others. This will allow students to recall all of the skills previously learnt and apply them to a high level to a final piece.</p>	<p>assessment of Personal Portfolio against Assessment Objectives 1 - 4.</p> <p>Judgements are informed by the GCSE Assessment framework and knowledge of expected standards.</p>
Term 3:1	<ul style="list-style-type: none"> ● Final product Realisation - Students start to create their final product based on their final design and plan. 	<ul style="list-style-type: none"> ● Creating a final design allows students to create a challenging final design based on research and the work of others. This will allow students to recall all of the skills previously learnt and apply them to a high level to a final piece. 	<p>Ongoing assessment of Personal Portfolio against Assessment Objectives 1 - 4.</p> <p>Judgements are informed by the GCSE Assessment framework and knowledge of expected standards.</p>
Term 3:2	<ul style="list-style-type: none"> ● Final product Realisation - Students start to create their final product based on their final design and plan. ● Mock Exam - students sit a 5 hour practical exam to give them experience of exam conditions in a practical environment in preparation for their final exam in year 11. 	<ul style="list-style-type: none"> ● Creating a final design allows students to create a challenging final design based on research and the work of others. This will allow students to recall all of the skills previously learnt and apply them to a high level to a final piece. ● Completing a mock exam develops students' independence as well as their time management and planning skills allowing them to prepare themselves fully for the final exam in Year 11. 	<p>Ongoing assessment of Personal Portfolio against Assessment Objectives 1 - 4.</p> <p>Judgements are</p>

			informed by the GCSE Assessment framework and knowledge of expected standards.
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YEAR 11			
TERM	Topic sequence (What are you teaching?)	Topic sequence rationale (Why are you teaching this? How does it link to prior learning? Any notable links to St Edmund's curriculum mission)	Main method of assessment?
Term 1:1	<ul style="list-style-type: none"> Final product Realisation - Students start to create their final product based on their final design and plan. 	<ul style="list-style-type: none"> Creating a final design allows students to create a challenging final design based on research and the work of others. This will allow students to recall all of the skills previously learnt and apply them to a high level to a final piece. 	<p>Ongoing assessment of Personal Portfolio against Assessment Objectives 1 - 4.</p> <p>Judgements are informed by the GCSE Assessment framework and knowledge of expected standards.</p> <p>Internal moderation.</p>
Term 1:2	<ul style="list-style-type: none"> Final product Realisation - Students start to create their final product based on their final design and plan. 	<ul style="list-style-type: none"> Creating a final design allows students to create a challenging final design based on research and the work of others. This will allow students to recall all of the skills previously learnt and apply them to a high level to a final piece. 	<p>Ongoing assessment of Personal Portfolio against Assessment Objectives 1 - 4.</p>

			<p>Judgements are informed by the GCSE Assessment framework and knowledge of expected standards.</p> <p>Internal moderation.</p>
Term 2:1	<p>Start of Contextual challenge -</p> <ul style="list-style-type: none"> ● Students are given a list of starting points issued by the exam board. students are to choose one of these themes and complete a small portfolio of work including a final piece that will be completed in the 10 hour exam. ● Students will complete the following tasks: <ul style="list-style-type: none"> ○ Mood board and analysis of theme ○ Observational studies and photography ○ Model making based on theme ○ Artist research ○ Thumbnail Sketches ○ model making ○ Final Design planning ○ Final product Realisation 	<ul style="list-style-type: none"> ● Students have already completed a large portfolio of work on their own chosen theme and this allows them to create another based on a theme chosen for them, as well as analyse artists they may not be familiar with. This takes students out of their comfort zone and develops creativity and curiosity as well as allowing them to recall all skills learnt previously. ● Students continue to work through their portfolio week by week building up the exam where they will create the final piece. This allows them to develop their organisation skills to meet strict deadlines. ● Continuously developing and evaluating their own work allows them to work iteratively helping them to achieve the best possible outcome for their final design. 	<p>Ongoing assessment of Personal Portfolio against Assessment Objectives 1 - 4.</p> <p>Judgements are informed by the GCSE Assessment framework and knowledge of expected standards.</p> <p>Internal moderation.</p>
Term 2:2	<ul style="list-style-type: none"> ● Students will complete the following tasks: <ul style="list-style-type: none"> ○ Mood board and analysis of theme ○ Observational studies and photography ○ Model making based on 	<ul style="list-style-type: none"> ● Students have already completed a large portfolio of work on their own chosen theme and this allows them to create another based on a theme chosen for them, as well as analyse artists they may not be familiar with. This takes students out of their comfort zone and develops creativity and curiosity as well as allowing them to recall all skills learnt previously. 	<p>Ongoing assessment of Personal Portfolio against Assessment Objectives 1 - 4.</p>

	<p>theme</p> <ul style="list-style-type: none">○ Artist research○ Thumbnail Sketches○ model making○ Final Design planning○ Final product Realisation	<ul style="list-style-type: none">● Students continue to work through their portfolio week by week building up the exam where they will create the final piece. This allows them to develop their organisation skills to meet strict deadlines.● Continuously developing and evaluating their own work allows them to work iteratively helping them to achieve the best possible outcome for their final design.	<p>Judgements are informed by the GCSE Assessment framework and knowledge of expected standards.</p> <p>Internal moderation.</p>
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