

## 3D Design- Design Technology

*“Have the courage to follow your heart and intuition. They somehow already know what you truly want to become. Everything else is secondary.” Steve Jobs*

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This document represents a sequenced response to the year 7 and 8 curriculum.

The subject of 3D Design (Design and Technology) is dedicated to enabling students to develop the skills and creativity to work and explore ideas and processes with a variety of materials and techniques. We ensure all students become confident risk-takers as they design, innovate and refine their own ideas. To be successful in later life, we know that our students need to be resilient and independent and so this is fostered throughout our curriculum to ensure projects allow students to explore freely in areas in which they're passionate and have an interest in. Moreover, many students at Arrow Vale have not had the opportunity to create their own products before and so we aim to address this social disadvantage by providing students with the skills, materials and machinery required to design, build and innovate. For example, in all key stages, students have the opportunity to create prototypes of their own design ideas using a variety of materials and equipment. As students progress through the key stages, their independence is encouraged to grow as they begin their own investigations in design, whilst building upon their knowledge of designers, artists and design methods.

We provide every student with the opportunity to develop their practical skills, enabling students to confidently experiment with a range of digital software as well as developing their ability to work with wood, metal, textiles and other materials. The sequencing of the curriculum allows for students to develop their skills over time as we return to high-leverage skills such as modelling to scale and demonstrating designs. We know that an understanding of technology is vital for students' future success and therefore place great emphasis on developing students' ability to use a range of CAD programmes across all key stages - empowering them to meet ambitious end points.

The curriculum provides ambition and challenge for all and is designed to stretch every student and support their own unique abilities, experiences, and knowledge. We study a wide range of design including architecture, product design, fashion design and jewellery so that students are exposed to a range of inspiration, and this expands their cultural capital and ability to reference the work of others. As the curriculum progresses into key stage five, students take more ownership over their study as they begin to research their own areas of particular interest and really develop their own personal style. Whether this focusing projects onto career paths such as illustration or architecture.

We pride ourselves on explicitly teaching the vocabulary needed to discuss design. Without this, students would not be able to articulate the process and methods used by artists, designers, or themselves but more so, they would not be able to express the impact a product or a design has on them. This enables students to reflect others work and allows them to explore and develop their own design ideas reflecting on how the work of others can inspire them in their own design path to produce fantastic product design outcomes.

Year 9

Term/Length of Unit	Outline	Knowledge and Skills	End points and associated key assessments
<p><b>USB Light project- All year</b></p>	<p>Students will Understand how to research, design, develop ideas, make a product and evaluate the process.</p>	<p><b>Artist analysis and response focus.</b></p> <ul style="list-style-type: none"> <li>- Analysing the title with a mind map.</li> <li>- Research current products on the market</li> <li>- Research design movements</li> <li>- Produce a design brief</li> <li>- Producing a design specification</li> </ul> <p><b>Designing and modelling focus</b></p> <ul style="list-style-type: none"> <li>- Students will design print/pattern ideas based on the movements researched</li> <li>- Produce a prototype print of the light</li> <li>- Go back and make changes to the design based on the prototype</li> </ul> <p><b>Final design planning</b></p> <ul style="list-style-type: none"> <li>- Realise final idea</li> <li>- Draw the final tin print design using CAD software</li> </ul> <p><b>Make final design piece</b></p> <ul style="list-style-type: none"> <li>- Print the design, construct the tin light</li> <li>- Produce a manufacturing plan</li> <li>- Evaluate the final design</li> </ul>	<p>Students will be assessed on a final product (USB Light) based on their chosen design movement.</p>

**KS4 Curriculum**

<b>Term/Length of Unit</b>	<b>Outline</b>	<b>Knowledge and Skills</b>	<b>End points and associated key assessments</b>
<b>Skills Development</b> (7 weeks) delivered in Autumn 1	Health and safety in the workshop, safely understanding and using a wide variety of tools and equipment, exploring different materials and techniques.	Understanding different methods of experimenting within design focusing on different materials and processes. Discussing, understanding, and applying the importance of health and safety in the workshop. Learning how to work with materials such as wood, resin, sublimation and CAD.	Students create mini outcomes throughout the skills development unit. These are self and teacher assessed throughout the unit as opposed to a final end point assessment.
<b>Architecture project (Sustained Project)</b> Autumn 2 until Summer 2	Completing a Architecture coursework project focusing on 60% of the overall GCSE	<p><b>Artist analysis and response focus.</b></p> <ul style="list-style-type: none"> <li>- Researching the title</li> <li>- Own photographs</li> <li>- Responding to artists</li> <li>- Designing in the style of artists</li> <li>- Design ideas</li> <li>- Combining ideas</li> </ul> <p><b>Designing and modelling focus</b></p> <ul style="list-style-type: none"> <li>- Create models based on designs</li> <li>- Develop ideas and models</li> <li>- Reflect and improve ideas</li> </ul> <p><b>Researching and experimenting with suitable materials</b></p> <ul style="list-style-type: none"> <li>- Research materials and techniques</li> <li>- Experiment decision on the chosen design idea</li> </ul> <p><b>Final design planning</b></p> <ul style="list-style-type: none"> <li>-realise final idea</li> </ul> <p><b>Make final design piece</b></p>	Students create a portfolio of design work, make a 3D model and prototype based on their design

		<ul style="list-style-type: none"> <li>- Make final design/model/sculpture</li> <li>- CAD drawing of final ideas</li> </ul>	
<p><b>Radio Project</b> (7 weeks) delivered in Autumn 1 and Autumn 2</p>	<p>A mini project focusing on working with the AO criteria and developing design, modelling, CAD, making skills and evaluation skills.</p>	<p><b>Artist research</b></p> <ul style="list-style-type: none"> <li>- Researching the title</li> <li>- Own photographs</li> <li>- Responding to artists</li> </ul> <p><b>Designing</b></p> <ul style="list-style-type: none"> <li>- Designing in the style of artists</li> <li>- Design ideas</li> <li>- Combining ideas</li> </ul> <p><b>Modelling</b></p> <ul style="list-style-type: none"> <li>- Create models based on designs</li> <li>- Develop ideas and models</li> </ul> <p><b>Reflecting</b></p> <ul style="list-style-type: none"> <li>- Reflect and improve idea</li> <li>- CAD drawing of final idea</li> </ul>	<p>Students create a portfolio of design work, make a 3D model and prototype based on their design</p>
<p><b>Exam Project</b> 40% of final GCSE</p>	<p>Completing a Personal investigation project focusing on 40% of the overall GCSE</p>	<p><b>Exam (40%) Students will complete a coursework project and sit a 10 hour exam based on the personal investigation title.</b></p> <ul style="list-style-type: none"> <li>- Students will choose one of the exam titles and begin researching the title and suitable artists (A01,A02)</li> <li>- Students will begin to design their own ideas based off artists/designer copies and experiments. (A02)</li> </ul>	<p>Students create a portfolio of design work, make a 3D model and prototype based on their chosen exam title.</p>

		<ul style="list-style-type: none"> <li>- Students will develop their ideas further and combine artists/designers (A03)</li> <li>- Students will refine ideas thinking about their final outcome (A03, A04)</li> <li>- Finalising project outcomes (A04)</li> </ul>	
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**KS5 Curriculum**

<b>Term/Length of Unit</b>	<b>Outline</b>	<b>Knowledge and Skills</b>	<b>End points and associated key assessments</b>
Introduce Assessment Objectives. (A01,A02,A03,A04)  <b>Art Deco Clock Project</b>  Autumn 1 and 2.	Introduction to the course. Begin a project that goes towards 'Other work' for the coursework submission.	<b>Design Movement research and response focus.</b> <ul style="list-style-type: none"> <li>- Researching the design movement</li> <li>- Researching current product</li> <li>- Artist copies</li> <li>- Designing in the style of the movement</li> </ul> <b>Designing and modelling focus</b> <ul style="list-style-type: none"> <li>- Create models based on designs</li> <li>- Develop ideas and models</li> <li>- Reflect and improve ideas</li> </ul> <b>Researching and experimenting with suitable materials</b> <ul style="list-style-type: none"> <li>- Research materials and techniques</li> <li>- Experiment decision on the chosen design idea</li> </ul> <b>Final design planning</b> <ul style="list-style-type: none"> <li>- Realise final idea</li> </ul> <b>Make final design piece</b> <ul style="list-style-type: none"> <li>- Make final design</li> <li>- CAD drawing of final ideas</li> </ul>	Students create a portfolio of design work, make a 3D model and prototype.

<p><b>Personal investigation project</b> Spring 1 until Summer 2</p>	<p>Completing a Personal investigation project focusing on 60% of the overall A Level</p>	<p><b>Personal investigation title.</b></p> <ul style="list-style-type: none"> <li>- Students will choose one of the exam titles and begin researching the title and suitable artists (A01,A02)</li> <li>- Students will begin to design their own ideas based off artists/designer copies and experiments. (A02)</li> <li>- Students will develop their ideas further and combine artists/designers (A03)</li> </ul>	<p>Students create a portfolio of design work, make a 3D model and prototype based on their chosen title</p>
<p>Refining the personal investigation Project</p>	<p>Responding to teacher feedback to improve project outcomes.</p>	<p><b>Experimenting further with ideas and techniques</b></p> <ul style="list-style-type: none"> <li>- 3D models</li> <li>- CAD models</li> </ul> <p><b>Make final design piece</b></p> <ul style="list-style-type: none"> <li>- Make final design</li> <li>- CAD drawing of final ideas</li> </ul> <p><b>Personal Investigation Written reflection</b></p> <ul style="list-style-type: none"> <li>- 1000-3000 words on the personal investigation project</li> </ul>	<p>Continue as above</p>

<p><b>Exam Project 40%</b> of final A Level Spring 1</p>	<p>Completing a Personal investigation project focusing on 40% of the overall A Level</p>	<p><b>Exam (40%) Students will complete a coursework project and sit a 15 hour exam based on the personal investigation title.</b></p> <ul style="list-style-type: none"> <li>- Students will choose one of the exam titles and begin researching the title and suitable artists (A01,A02)</li> <li>- Students will begin to design their own ideas based off artists/designer copies and experiments. (A02)</li> <li>- Students will develop their ideas further and combine artists/designers (A03)</li> <li>- Students will refine ideas thinking about their final outcome (A03, A04)</li> <li>- Finalising project outcomes (A04)</li> </ul>	<p>Students create a portfolio of design work, make a 3D model and prototype based on their chosen exam title.</p>
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