

Three Dimensional Design Ethos and Teaching

Subject Lead: Ms Cath Sissons

Intent:

The aim of the Three Dimensional Design Department at Kilgarth School is to teach pupils how to be confident, creative, independent designers and makers who are willing to explore and invent solutions to given and self-identified design problems.

To achieve this, pupils will explore new materials, techniques and technologies in order to improve their knowledge and understanding of design and practical skills. It is also the intention that pupils, by producing a range of individual outcomes that they are excited about, will become confident independent learners.

Over the course of study, pupils will:

- Have access to a varied 3D curriculum allowing them to achieve their personal potential through designing and practical lessons.
- Develop 3D understanding through modelling and prototyping ideas alongside testing and evaluating.
- Explore materials and making techniques and develop the use of a technical vocabulary.
- Apply mathematical knowledge to understand 3D Design. Pupils will develop marking out skills and work to understand scale and size.
- Develop problem solving skills through project work and targeted tasks.
- Develop planning and time management skills through the organisation of their project work.
- Develop skills for independent learning.
- Understand how to work safely and follow Health and Safety expectations and guidance.

Implementation Programme of Study:

- **Key Stage 3**

Pupils in years 7, 8 and 9 develop their knowledge and understanding through designing and making 3D outcomes and safely accessing a variety of practical techniques.

Assessment objectives in KS3 link directly to those studied in KS4, enabling a smooth progression towards GCSE.

	Autumn	Spring	Summer
Year 7	<p>Introduction to 3DD Pupils will learn about workshop Health & Safety and a safe working environment.</p> <p>Problem solving task Introduction to research, analysis, model making, testing and evaluation.</p> <p>Tools & machines Pupils will learn how to safely operate the workshop machines.</p> <p>Pupils will be taught how to</p>	<p>Introductory Design and Make task Pupils will learn how to respond to a simple brief, design a product and how to realise it.</p> <p>Pupils will use knowledge from term 1 in the production of their product.</p> <p>Pupils will explore different making techniques and practise using hand tools and machinery.</p>	<p>Introduction to electronics Pupils will be introduced to electronics, how to identify components, the safe use of equipment and the Health & Safety requirements involved.</p> <p>Pupils will respond to a design brief.</p> <p>Pupils will consider recycling/re-use in their practical work.</p> <p>Pupils will be able to describe a sequence of making activities.</p>

	<p>safely use the hand tools and materials available in class and be given opportunities to develop practical skills.</p>	<p>Working with plastics - Chocolate Promotion Pupils will learn about producing work within a set of given parameters.</p> <p>Pupils will learn how to design and build an effective mould for the vacuum former.</p> <p>Pupils will be able to understand the requirements for creating a product that can be used in Food technology.</p> <p>Pupils will be able to create graphics and packaging that reflects the practical work.</p>	<p>Design and Make task 2 Pupils will respond to a design brief, create ideas and models, make appropriate changes to their work and produce a final piece.</p> <p>Pupils will extend their practical skills when using hand tools and machinery.</p>
<p>Year 8</p>	<p>Structures - Problem solving Pupils will independently investigate, analyse and create a solution for a set problem solving task.</p> <p>Pupils will be able to explain their making decisions.</p> <p>Pupils will test their ideas and make effective changes to their work.</p> <p>Totems/Masks Pupils will use imagery and ideas from other cultures as an influence on their drawings and design work.</p> <p>Pupils will consider scale in relation to the human form.</p> <p>Pupils will revisit Health & Safety requirements in the workshop.</p> <p>Pupils will be able to extend their knowledge and skills with hand tools and machinery.</p>	<p>Environment task Pupils will be assessed on being able to independently follow a set of making instructions to build a bird box.</p> <p>Pupils will consider environmental and safety issues with their product.</p> <p>Pupils will test their product and make appropriate changes.</p> <p>Pupils will use their gained knowledge/skills to build an accompanying bug box or bird feeder.</p>	<p>Electronics product – torch/light Pupils will revise skills and processes learned in Year 7 to create a torch/lighting product</p> <p>Pupils will create design ideas responding to the design brief.</p> <p>Plastic will revisit and extend soldering/electronics skills.</p> <p>Pupils will be able to identify electronic components and know where and how to accurately place them on a PCB.</p> <p>Pupils will revisit Health & Safety requirements for soldering and how to build an effective circuit.</p> <p>Pupils will test their product and make appropriate changes.</p> <p>Pupils will be able to describe the making sequence and processes used.</p>

<p>Year 9</p>	<p>Structures - Problem solving Pupils will independently investigate, analyse and create a solution for a set problem solving task.</p> <p>Pupils will be able to explain their making decisions.</p> <p>Pupils will test their ideas and make effective changes to their work.</p> <p>Electronics product - Wall sign. Introductory design and make GCSE style project</p> <p>Pupils will work to a project brief.</p> <p>Pupils will research artists and designers.</p> <p>Pupils will produce models to explore their ideas.</p> <p>Pupils will record their work through drawings, designs, photographs and annotations.</p> <p>Pupils will explore materials available to them to develop joining and surface treatment techniques.</p> <p>Pupils will test their product and make appropriate changes.</p> <p>Pupils will be able to describe the making sequence and processes used.</p>	<p>Storage - Tool box Pupils will be assessed on their ability to respond to a design brief.</p> <p>Pupils will learn about using appropriate tools and materials for task.</p> <p>Pupils will consider scale and waste by making tests/templates.</p> <p>Pupils will test their product and make appropriate changes.</p>	<p>Phone/tablet holder Plastics plus wood/appropriate materials An introductory project to working and making with plastic.</p> <p>Pupils will learn about appropriate tools, machines and processes.</p> <p>Pupils will create and test their ideas through model making.</p> <p>Pupils will learn about net shapes/waste.</p>
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Key Stage 4

Pupils at Key Stage 4 follow the AQA GCSE 3D Design specification - a two-year course that is examined by a coursework portfolio and an externally set (practical) examination.

AQA GCSE in Three Dimensional Design (8205)	
Component 1 Portfolio submission	Component 2 Externally set assignment
<p>What's Assessed:</p> <p>A portfolio that in total shows explicit coverage of the four assessment objectives. It must include a sustained project evidencing the journey from initial engagement to the realisation of intentions and a selection of further work undertaken during the pupil's course of study,</p>	<p>What's Assessed:</p> <p>Pupils respond to their chosen starting point from an externally set assignment paper relating to their subject title, evidencing coverage of all four assessment objectives.</p>
<p>How it's Assessed:</p> <p style="text-align: center;">60% of GCSE</p> <p>Portfolio work completed during year 10 and first term of year 11.</p>	<p>How it's Assessed:</p> <p style="text-align: center;">40% of GCSE</p> <p>Preparatory period followed by 10 hours of supervised time.</p>

AQA GCSE in Three Dimensional Design (8205)			
	Autumn	Spring	Summer
Year 10	<p>GCSE Induction project.</p> <p>Pupils will explore a range of materials available to them to develop joining and surface treatment techniques.</p> <p>Pupils will produce models to explore their ideas.</p> <p>Pupils will record their work through drawings, designs, photographs and annotations.</p> <p>Pupils will research artists and designers.</p> <p>Pupils will work to a project brief.</p> <p>Pupils will develop independent work.</p>	<p>Portfolio project 1</p> <p>Pupils will research themes, designers and artists from a set design brief.</p> <p>Pupils will work independently to design and develop a personal solution.</p> <p>Pupils will model and test their ideas.</p> <p>Pupils will record their work through drawings, designs, photographs, models and annotations.</p> <p>Pupils will continue to work independently.</p> <p>Pupils will continue to test their product and make appropriate</p>	<p>Portfolio project 2</p> <p>Pupils will build upon earlier experiences to respond to starting points.</p> <p>Pupils will research appropriate sources; locations etc. and record their findings.</p> <p>Pupils will develop their ideas through drawings, designs, models, photographs etc.</p> <p>Pupils will continue to develop independent work.</p> <p>Pupils will build upon existing knowledge and skills as they produce their work.</p> <p>Pupils will record the progression of ideas with</p>

	<p>Pupils will evaluate and refine their making solutions.</p> <p>Pupils will revisit Health & Safety requirements in the workshop.</p>	<p>changes.</p> <p>Pupils will evaluate their work and progress.</p> <p>Pupils will work towards the final deadline.</p>	<p>written annotations and observations.</p> <p>Pupils will evaluate their work and progress.</p> <p>Pupils will work towards a final three dimensional product.</p>
Year 11	<p>Sustained project and selection of work for Component 1 Portfolio.</p> <p>Pupils encouraged to build upon previous experiences to respond to a chosen starting point to develop a response covering the four assessment objectives.</p> <p>Pupils will review their coursework projects and action appropriate developments.</p> <p>Pupils will work independently to complete/extend targeted areas.</p> <p>Pupils encouraged to build upon previous experiences to respond to a chosen starting point to develop a response covering the four assessment objectives.</p> <p>Pupils will work towards compiling their Portfolio presentation.</p> <p>Pupils will ensure their work covers assessment objectives</p> <p>Pupils will ensure a sustained project is evidenced</p> <p>Pupils will review and select their work for submission.</p>	<p>Component 2 – External examination unit.</p> <p>Pupils will select and research a question from the set controlled assessment tasks.</p> <p>Pupils will work independently to design and develop a solution to the set design brief.</p> <p>Pupils will model and test their ideas.</p> <p>Pupils will record their work through drawings, designs, photographs, models and annotations.</p> <p>Pupils will continue to work independently.</p> <p>Pupils will continue to test their product and make appropriate developments.</p> <p>Pupils will record and evaluate their work and progress.</p> <p>Pupils will work towards the final deadline.</p>	<p>Component 2continued</p> <p>Pupils will produce their final practical examination work.</p> <p>Pupils will work within the set time constraints.</p> <p>Pupils will prepare their work for final submission deadline.</p>

All three dimensional project work is completed in the workshop. Pupils will have appropriate specialist guidance and support and will have the opportunity to improve and develop their work to gain a higher grade if they wish to do so. The following grades are available:

Qualification Grade	GCSE (9-1)
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Impact:

- Pupils are motivated, creative and independent learners.
- Pupils will make progress towards their outcomes according to their Education, Health and Care Plans.
- Pupils will develop resilience, technical and social skills required for a successful transition to further education or training.
- Pupils will become confident learners and be more adept at problem solving.
- Pupils will develop a greater understanding of the world and develop values and skills that allow them to actively contribute to society.