

# GCSE Design & Technology - Graphic Design

## Curriculum Overview 2020-2021

### Core aims of the subject at Key Stage 4

The intent of our Graphic Design curriculum is to ensure students have the ultimate experience and understanding of designing. Graphic Design and the process of Design gives students challenging opportunities to find solutions to problems. The process of creative thinking and innovation inspires students to bring out undiscovered talents, which in turn cultivates a self-confidence and belief in their abilities to achieve. It also challenges and appeals to the creative instincts that have driven humanity to discover, adapt and overcome. Within this spectrum of ability development, Design and Technology's Graphic Design course seeks to develop these. Every product we see, purchase and use has been designed, a problem, solved and designers are at a seminal point development. A designer can have great influence on the Spiritual, Moral, Social and Cultural development of a product and in some way, help prepare for our future. Students will be developing an understanding of environmental design and sustainable issues, supporting the environment and their communities.

We also look at developing critical thinking and practical skills to resolve design situations. We take students through the process of; the design & manufacture of graphic products including model making skills, computer aided design and manufacture (CAD/CAM) which enables students to actively engage and take responsibility for their personal development in the process of graphic design to develop as effective and independent learners.

Students will learn to make decisions, consider sustainability and combine skills with understanding in order to design and make quality products, exploring ways in which aesthetics, technical, economic, environmental, ethical, economic, environmental, ethical and social dimensions interact to shape designing and making. Students will develop an understanding of why analysing existing products will help produce practical solutions to needs, wants and opportunities, recognising their impact on quality of life. By understanding the design process students can then design and make products which reflect and influence cultures and societies and that have an impact on lifestyle. Graphic Design is defined as "the art and practice of planning and projecting ideas and experiences with visual and textual content." In other terms, graphic design communicates certain ideas or messages in a visual way.

We are all in some small way creative, what this subject does is to foster and unleash that hidden talent by giving students the tools, skill and expertise to access it.

**Community Involvement:** Possible visiting speakers to discuss their business interest in Photography and Graphics.

Internal Tech Interhouse Display Competition (Y10 only) Each Tech Area will produce a Display Board based on an area of study within their subject area and House. (STEM)

The new D&T Graphic Design GCSE places greater emphasis on understanding and applying iterative design processes. Students will use their creativity and imagination to design and make prototypes that solve real and relevant problem, consider their own and others' needs, wants and values.

Courses based on this specification must encourage students to:

- demonstrate their understanding that all design and technological activity takes place within contexts that influence the outcomes of design practice
- develop realistic design proposals as a result of the exploration of design opportunities and users' needs, wants and values
- use imagination, experimentation and combine ideas when designing
- develop the skills to critique and refine their own ideas whilst designing and making
- communicate their design ideas and decisions using different media and techniques, as appropriate for different audiences at key points in their designing
- develop decision making skills, including the planning and organisation of time and resources when managing their own project work
- develop a broad knowledge of materials, components and technologies and practical skills to develop high quality, imaginative and functional prototypes
- be ambitious and open to explore and take design risks in order to stretch the development of design proposals, avoiding clichéd or stereotypical responses
- consider the costs, commercial viability and marketing of products
- demonstrate safe working practices in design and technology
- use key design and technology terminology including those related to designing, innovation and communication; materials and technologies; making, manufacture and production; critiquing, values and ethics.

Our GCSE Design and Technology specification sets out the knowledge, understanding and skills required to undertake the iterative design process of exploring, creating and evaluating. The majority of the specification should be delivered through the practical application of this knowledge and understanding.

The subject content has been split into three sections as follows:

- **Core technical principles**
- **Specialist technical principles**
- **Designing and making principles**

**Core technical** principles covers core technical principles and all content must be taught. **Specialist technical principles** covers specialist technical principles where students will go into greater depth. Each principle should be taught through at least **one** material category or system. **Designing and making principles** covers design and making principles and all content in this section must be taught.

Students must also demonstrate mathematical and scientific knowledge and understanding, in relation to design and technology.

### **Fieldwork + LINKS stated in Community Involvement**

Possible visits to local industry. E.g. Bentley, Gateway.

Ex-student talks.

Visits to Art Galleries – project links

Graphics/Photography tutorials/Trips

### **Assessment**

This specification is designed to be taken over two years.

This is a linear qualification. In order to achieve the award, students must complete all assessments at the end of the course and in the same series.

GCSE exams and certification for this specification are available for the first time in May/June 2019 and then every May/June for the life of the specification.

Our GCSE exams in Design and Technology include questions that allow students to demonstrate their ability to:

recall information

draw together information from different areas of the specification

Apply their knowledge and understanding in practical and theoretical contexts.

Assessment objectives (AOs) are set by Ofqual and are the same across all GCSE Design and Technology specifications and all exam boards.

The exams and non-exam assessment will measure how students have achieved the following assessment objectives.

AO1: Identify, investigate and outline design possibilities to address needs and wants.

AO2: Design and make prototypes that are fit for purpose.

AO3: Analyse and evaluate:

design decisions and outcomes, including for prototypes made by themselves and others

Wider issues in design and technology.

AO4: Demonstrate and apply knowledge and understanding of:

technical principles

designing and making principles.

### **Homework**

Homework is set when required. The theoretical content that is taught will be backed up by homework tasks that will embed knowledge and understanding of:

- 3.1 Core technical principles
- 3.2 Specialist technical principles
- 3.3 Designing and making principles

Students will have the opportunity to enhance their NEA work by preparing the required work before producing the final work through self-study.

### Clubs and/or intervention

Catch up NEA sessions will be held at lunch times and after school. Timings TBC annually and will be found on the school website

### Parental/Carer support

Support your son/daughter by purchasing an A3 portfolio and the supporting textbook/revision guides.  
Allow your child to attend catch up sessions, especially when producing the NEA.

### Helpful sources of information

The course specification can be found here:

The course specification can be found here:

<https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552>

Recommended text book:

My Revision Notes: AQA GCSE (9-1) Design and Technology: All Material Categories and Systems  
ISBN 9781510432314

Recommended Revision Guides:

New Grade 9-1 GCSE Design & Technology AQA Revision Guide.  
ISBN 9781782947523

DayDream Education

Design & Technology GCSE Revision Guide: Pocket Posters

Websites:

<http://www.technologystudent.com/>

[http://www.technologystudent.com/despro\\_flsh/graphics\\_main1.html](http://www.technologystudent.com/despro_flsh/graphics_main1.html)

<https://www.bbc.com/bitesize/subjects/zvg4d2p>

## Year 10 Overview

Term	Knowledge	Assessment	Connections to learning	Connections to future pathways
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By studying design and technology, students will be able to build up their creativity, problem solving, planning, and evaluation skills. Since many projects are done via group work, students will also gain communication and teamwork skills. Pupils will demonstrate safe working practices in DT

They will also demonstrate their understanding that all design and technological activity takes place within contexts that influence the outcome of design practice. During the 1<sup>st</sup> term students will undergo a series of small projects that will develop their core designing and technical skills. These will include;

**Projects:** Sustainability Project, Materials Project,

Provides sound progression from Key Stage 3 • Offers relevant and interesting content for study • Focuses on the production of a prototype

- Students have the opportunity to work with a wide range of materials

**Autumn  
1**

- Investigation of Graphic Products to understand How, why and who using ACCESSFM
- What makes a good design
- Designing for sustainability
- Understand how designers can support environmental sustainable issues through choice of manufacture and materials used.

*All content will be assessed with feedback against the GCSE NEA criteria.*

**Investigation –**  
Task analysis/Spider Diagram  
Moodboard/existing product research  
Product Analysis/disassembly  
User requirements/questionnaire/client research  
Material investigation/material research- completed via internet research

➤ Prior learning  
KS3  
Mood boards  
Basic product analysis  
Designing skills from KS3 projects  
Card modelling is done throughout KS3 in a variety of projects  
CAD is taught in all years at KS3

**Science –**  
6R's  
Material properties, Sustainability  
Issues,  
Material enhancement (finishes)

**PSHCE**

**Careers**  
Graphic Designer  
Advertising  
Brand Development  
Web Designer  
Games Designer  
Pattern Designer  
Manufacturing  
Craft  
Engineering  
CAD technician.  
Clothing/textile technologist.  
Exhibition designer.  
Furniture designer.  
Interior and spatial designer.  
Product designer.

	<p>➤ Students gain knowledge of Graphic Materials; Smart, Modern, Composites &amp; Plastics</p> <p><b>AO1 Investigation techniques.</b> Understand user centred needs/wants How to write a design Brief Using primary and secondary data to understand client and/or user needs. Market research, interviews, human factors How to write a specification</p> <p><b>AO2 Design skills-</b> Creativity Isometric drawing Design strategies</p> <p><b>AO3 Develop the iterative design processes</b> Communication of design ideas</p>	<p><i>ALL DONE VIA POWERPOINT</i> <i>Students will be assessed against the GCSE NEA marking criteria for AO1</i></p> <p><b>Designing –</b> Initial shapes sheet, looking at creativity. Sketching, hand drawn design ideas <i>THIS WILL BE COMPLETED VIA A VARIETY OF CAD AND HAND DRAWN SKETCHES</i> <i>Students will be assessed against the GCSE NEA marking criteria for AO2</i></p> <p><b>Development –</b> Card templates- showing development and iterative design Modelling- showing development and iterative design CAD- giving different views of the product Sizes (working/orthographic drawing) Exploded drawings</p>	<p>Ethical, Moral, social issues</p>	<p><b>Future learning</b> Graphics Photography Game Design A level PD Engineering Art Textiles</p>
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		<p><i>THIS CAN BE DONE VIA A VARIETY OF PRESENTATION TECHNIQUES&lt; HAND DRAWN/ CAD/ PHOTOGRAPHS AND PYHSICAL MODELLING</i></p> <p><i>Students will be assessed against the GCSE NEA marking criteria for AO2</i></p>		
Autumn 2	<p>By studying design and technology, students will be able to build up their creativity, problem solving, planning, and evaluation skills. Since many projects are done via group work, students will also gain communication and teamwork skills. Pupils will demonstrate safe working practices in DT</p> <p>They will also demonstrate their understanding that all design and technological activity takes place within contexts that influence the outcome of design practice. During the 1<sup>st</sup> term students will undergo a series of small projects that will develop their core designing and technical skills.</p> <p><b>Projects:</b> Continued from A1, CAD/CAM Develop a 3d product and Blister packaging, Designer Focus &amp; Human Factors Projects</p> <p>Provides a good understanding of the key elements of Graphic Design • Graphics has a direct links to A Level, Degree, Masters qualifications and thriving Careers in the creative industry • Offers relevant and interesting content for study • Focuses on the production of a prototype</p> <p>Students have the opportunity to work with a wide range of materials</p>			
	<p>➤ Who are the great Graphics Designers? What makes good Typography? Students will gain knowledge and understand how develop design based on designer's work</p>	<p><b>Manufacturing-</b> Final piece quality and skill <i>Students will be assessed against the GCSE NEA marking criteria for AO2</i></p> <p><b>Evaluation –</b> Review Specification/brief-self evaluation</p>	<p>➤ Links to KS3 project, desk Tidy, Steady Hand game, where students understand basic manufacturing processes</p>	<p><b>Careers</b> Graphic Designer Advertising Brand Development Web Designer Games Designer Pattern Designer Manufacturing Craft</p>

	<ul style="list-style-type: none"> <li>➤ Understand how to produce layouts to produce designs</li> <li>➤ Understand how to apply Human Factors to a product</li> <li>➤ Identify, investigate and outline design possibilities to address needs and wants</li> <li>➤ Design and make prototypes that are fit for purpose Understanding Ergonomics and Anthropometrics</li> <li>➤ Analyse and evaluate: design decisions and outcomes, including for prototypes made by themselves and others</li> </ul> <p>Project will continue next term</p> <p><b>AO3 – Manufacturing /workshop techniques – skills.</b></p> <p>Knowledge of machines, tools and processes.</p>	<p>Test the use- evaluating the product in use User feedback- client feedback</p> <p><i>THIS WILL BE COMPLETED IN A VARIETY OF PRESENTATION TECHNIQUES- POWERPOINT /IMAGES/ CLIENT WRITTEN FEEDBACK ETC</i></p> <p><i>Students will be assessed against the GCSE NEA marking criteria for AO3</i></p>		<p>Engineering CAD technician. Clothing/textile technologist. Exhibition designer. Furniture designer. Interior and spatial designer. Product designer.</p> <p><b>Future learning</b> Graphics Photography Game Design A level PD Engineering Art Textiles</p>
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	<b>AO4 - Analysing and Evaluating</b> How to produce an Evaluation			
<b>Spring 1</b>	<p>Improve knowledge in all areas in preparation for the NEA which starts June 1<sup>st</sup> (Summer 1). To be able to design for a set client with a real problem. Looking at 'disability' not only helps pupils to be aware of issues people with disability face but also helps pupils think more widely about their product. To design for a set client gives a product real purpose. Pupils will design realistic proposals as a result of their exploration of a chosen client and their wants and needs. Pupils will use their imagination and develop skills to help them critique their own work and will be ambitious to explore and take design risks to stretch the development of their design proposal.</p> <p><b>Projects:</b> Continued from A2 - Human Factors Project, Packaging, Leavers and Forces</p> <p>Provides sound progression from Key Stage 3 and from the Magazine project- building on learning • Offers relevant and interesting content for study • Focuses on iterative design and covers a wide range of materials, letting students specialise.</p>			
	<ul style="list-style-type: none"> <li>➤ Identify, investigate and outline design possibilities to address needs and wants</li> <li>➤ Design and make prototypes that are fit for purpose</li> <li>➤ Analyse and evaluate: design decisions and outcomes, including for prototypes made by themselves and others</li> </ul>	<p><i>All content will be assessed with feedback against the GCSE NEA criteria.</i></p> <p><b>Investigation –</b>          Spider Diagram/task analysis          Moodboard/product research          Product Analysis and/or disassembly          User requirements/client research          Material investigation-done via internet research</p>	<ul style="list-style-type: none"> <li>➤ In many KS3 project, brainstorms are taught/completed as a good way to start the thinking in a project</li> <li>➤ 2D design is taught in all years at KS3, other CAD has also already been taught 3D CAD software is taught (Sketchup/ solid works)</li> <li>➤ Card templates are used as iterative design in many KS3 projects. CAD is also used throughout KS3</li> </ul>	<p><b>Careers</b>          Graphic Designer          Advertising          Brand Development          Web Designer          Games Designer          Pattern Designer          Manufacturing          Craft          Engineering          CAD technician.          Clothing/textile technologist.          Exhibition designer.          Furniture designer.          Interior and spatial designer.          Product designer.</p>

	<p>➤ Wider issues in design technology</p> <p><b>AO1</b>  <b>Investigation techniques</b>  Identify, investigate and outline design possibilities to address needs and wants</p> <p><b>AO2</b>  <b>Design and make prototypes that are fit for purpose</b>  Analyse and evaluate: design decisions and outcomes, including for prototypes made by themselves and others  Wider issues in design technology  Demonstrate and apply knowledge and understanding of:  Technical principles  Design and making principles.</p>	<p>looking at material properties  Specification- using ACCESSFM  <i>Students will be assessed against the GCSE NEA marking criteria for AO1</i></p> <p><i>Identifying and investigating design possibilities (10 marks)</i>  <i>Producing a design brief and specification (10 marks)</i></p> <p><b>Designing –</b>  Sketching using a variety of 2D and 3D- CAD where possible</p> <p><i>Generating design ideas (20 marks)</i></p> <p><b>Development –</b>  Card templates- demonstrating development and iterative design  Modelling- demonstrating development and iterative design  CAD- showing different views and finishes of the product</p>		<p><b>Future learning</b>  Graphics  Photography  Game Design  A level PD  Engineering  Art  Textiles</p>
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		<p>Sizes (orthographic drawing) done via CAD or HANDDRAWN DESIGNS  <i>All content will be assessed with feedback against the GCSE NEA criteria AO2.</i></p> <p><i>Developing design ideas (20 marks)</i></p>		
Spring 2	<p>Improve knowledge in all areas in preparation for the NEA which starts June 1<sup>st</sup> (Summer 1). To be able to design for a set client with a real problem. Looking at 'disability' not only helps pupils to be aware of issues people with disability face but also helps pupils think more widely about their product. To design for a set client gives a product real purpose. Pupils will design realistic proposals as a result of their exploration of a chosen client and their wants and needs. Pupils will use their imagination and develop skills to help them critique their own work and will be ambitious to explore and take design risks to stretch the development of their design proposal.</p> <p><b>Projects:</b> Continued from S2 - Leavers and Forces, Festival Poster</p> <p>Provides sound progression from Key Stage 3 and from the Magazine project- building on learning • Offers relevant and interesting content for study • Focuses on iterative design and covers a wide range of materials, letting students specialise.</p>			
	<p><b>AO2</b>  <b>Manufacturing/ techniques – skills.</b>          Knowledge of machines, tools and processes.</p> <p><b>AO3</b>  <b>Analysing and evaluating</b>          How to produce an Evaluation</p>	<p><b>Manufacturing-</b>          Final piece quality and skill  <i>All content will be assessed with feedback against the GCSE NEA criteria AO2</i></p> <p><i>Realising design ideas (20 marks)</i></p> <p><b>Evaluation –</b></p>	<ul style="list-style-type: none"> <li>➤ Manufacturing skills follow on from all KS3 projects</li> <li>➤ Most KS3 projects include some form of evaluation</li> </ul>	<p><b>Careers</b>          Graphic Designer          Advertising          Brand Development          Web Designer          Games Designer          Pattern Designer          Manufacturing          Craft          Engineering          CAD technician.</p>

		<p>Review Specification  Test the use  User feedback  <i>All content will be assessed with feedback against the GCSE NEA criteria AO3</i></p> <p><i>Analysing and evaluating (20 marks)</i></p>		<p>Clothing/textile technologist.  Exhibition designer.  Furniture designer.  Interior and spatial designer.  Product designer.</p> <p><b>Future learning</b>  Graphics  Photography  Game Design  A level PD  Engineering  Art  Textiles</p>
Summer 1	<p>GCSE exam prep, to prepare pupils in readiness for the GCSE exam, also the Y10 Mocks. This term will be spent revising through Focused Practical Tasks (where possible) Revision session, discussion and self-study. Small individual tasks will be completed to gain knowledge and understanding of the core principals, specialist principles and design and making principles. Pupils will develop a broader knowledge of materials, components, tools, and technological and practical skills through FPTs  Revision through Design and Make (where possible) stick-ability tasks.</p>			
	<p>➤ Revision in preparation for the GCSE exam. Individual one off lessons:</p> <ul style="list-style-type: none"> <li>• 3.3.1 Core technical principles</li> <li>• 3.3.2</li> </ul>	<p><b>Questions- mini tests  Mock paper(s)  Question and answers covering the following different question styles:</b></p> <p><b>Section A – Core technical principles (20 marks)</b></p>	<p>➤ Materials are taught at KS3 and through KS4 projects</p> <p>➤ Area and calculations in maths</p> <p>➤ Previous understanding of the 6R's</p>	<p><b>Careers</b>  Graphic Designer  Advertising  Brand Development  Web Designer  Games Designer  Pattern Designer  Manufacturing  Craft  Engineering</p>

	<p>Specialist technical principles</p> <ul style="list-style-type: none"> <li>• 3.3.3 Designing and making principles</li> <li>• 3.1.5 Mechanical devices- levers revision session, lever class</li> <li>• 3.1.6 Materials and their working properties <ul style="list-style-type: none"> <li>• 3.1.6.1 Materials categories</li> <li>• 3.1.6.2 Material properties</li> </ul> </li> <li>• 3.2.1 Selection of materials or components</li> <li>• 3.2.2 Forces and stresses- motion</li> <li>• 3.2.3 Ecology and social footprint- where</li> </ul>	<p>A mixture of multiple choice and short answer questions assessing a breadth of technical knowledge and understanding.</p> <p><b>Section B – Specialist technical principles (30 marks)</b> Several short answer questions (2–5 marks) and one extended response to assess a more in depth knowledge of technical principles.</p> <p><b>Section C – Designing and making principles (50 marks)</b> A mixture of short answer and extended response questions Worksheet – levers and homework on motion Key names of materials and their properties, theory and knowledge is built through notes and revision packs Discussion of materials [ast exam questions</p>	<ul style="list-style-type: none"> <li>➤ Keywords will have been discussed at KS3 in all making sections</li> <li>➤ Calculating area and quantities- maths focus</li> <li>➤ Scaled drawings</li> <li>➤ Pupils will have used paints, dip coating, polish, wax at KS3</li> <li>➤ Spatula gcse project covers this widely</li> <li>➤ Some is covered through PHSCE at KS3</li> <li>➤ Tessellation- maths knowledge</li> <li>➤ Marking out and cutting tolerances are taught through KS3 projects</li> <li>➤ KS3 projects are designed to give the basic knowledge of a range of tools and processes.</li> </ul>	<p>CAD technician. Clothing/textile technologist. Exhibition designer. Furniture designer. Interior and spatial designer. Product designer.</p> <p><b>Future learning</b> Graphics Photography Game Design A level PD Engineering Art Textiles</p>
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	<p>materials come from and the negative effects of this on the environment</p> <ul style="list-style-type: none"> <li>• 3.2.4 Sources and origins product life cycle</li> <li>• 3.2.5 Using and working with materials</li> <li>• Physical properties and working properties.</li> <li>• 3.2.7 Scales of production</li> <li>• One off through to JIT</li> <li>• 3.2.8 specialist techniques and processes</li> <li>• Brazing, welding, soldering</li> <li>• Joining woods/ lap/dowel/finger joint</li> <li>• 3.2.9</li> </ul>	<p>Samples to explain, woods, metals, plastics, paper card and textiles</p> <ul style="list-style-type: none"> <li>➤ Calculating material cost- maths based questions.</li> <li>➤ 6R's- worksheet Social Moral Environmental considerations notes</li> <li>➤ Worksheet on motion, link to revision guide</li> <li>➤ Raw materials and production of materials, worksheet 6R's exam questions Choose a commercial process – draw and label it.</li> <li>➤ Product life cycle, past exam questions</li> <li>➤ Notes from demonstrations</li> <li>➤ Revision notes and worksheets</li> <li>➤ FPT</li> </ul>		
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	<p>Surface treatments and finishes</p> <ul style="list-style-type: none"> <li>• In relation to all materials</li> <li>• Paint, stain, wax, powder coating, undercoat</li> <li>• 3.3.1 Investigation, primary and secondary data</li> <li>• Anthropometrics and ergonomics</li> <li>• 3.3.2 Environmental, social and economic challenge</li> <li>• Deforestation – Fairtrade</li> <li>• 3.3.8 Tolerances</li> <li>• Accuracy, QC, tessellation</li> <li>• 3.3.9 Material management</li> </ul>	<ul style="list-style-type: none"> <li>➤ Discussion of tolerances</li> <li>➤ QC and QA revision notes</li> <li>➤ Use of questioning to revisit injection moulding- diagrams used to record process</li> <li>➤ Discussion based around commercial methods used to manufacture paper and board.</li> <li>➤ Identify QC checks on set product- label diagrams and use past exam Q's</li> <li>➤ Revision notes</li> <li>➤ Past exam questions</li> <li>➤ Exam questions- looking at essay based ones</li> <li>➤ Analyse data from client's points of view.</li> </ul>		
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	<ul style="list-style-type: none"> <li>• 3.2.6 Stock forms, types and sizes</li> <li>• Sheet, plank, moulding, dowel. Bar/rod, square section.</li> <li>• 3.3.10 Specialist tools and equipment</li> <li>• 3.3.11 Specialist techniques and processes.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Product analysis – using ACCESS FM and previous exam questions</li> <li>➤ Exam questions</li> <li>➤ Exam questions based on logos</li> <li>➤ FPT</li> <li>➤ Looking at past exam questions</li> <li>➤ Safety questions from past exams</li> <li>➤ Spot questions in lessons</li> <li>➤ Discussions in lessons</li> </ul>		
<p><b>Summer 2 2020 – End of Spring 1 2021</b></p>	<p>Set by exam board- final GCSE TOPIC. Non-exam assessment (NEA) for this specification is made up of a single design and make task (50% of final grade). Design Tasks are delivered to the Student at the start of the Summer 2 term (June). Students will be allowed to choose a design task of their choice but will be guided for best results. Not all design tasks are suitable for Graphic Design as they are generic to the Design and Technology GCSE. Previous projects will prepare students to undertake the GCSE Design and Technology and will prepare students to participate confidently and successfully in an increasingly technological world. Students will gain awareness and learn from wider influences on Design and Technology including historical, social, cultural, environmental and economic factors. Students will get the opportunity to work creatively when designing and making and apply technical and practical expertise. Our GCSE allows students to study core technical and designing and making principles, including a broad range of design processes, materials techniques and equipment. They will also have the opportunity to study specialist technical principles in greater depth.</p>			

Introduction to the NEA. Set tasks are provided by AQA on 1<sup>st</sup> June. This will be introduced ASAP following the release of the contexts, Contexts will have a Graphic design Focus. Completion of this project is around Mid-March.

NEA will start Summer 2 and be completed by end of Spring 1 2021

- Substantial design and make task Assessment criteria:
- 3.1.1, 3.3.1
  - Identifying and investigating design possibilities –
  - Use primary and secondary data to understand client and/or user needs
  - Carry out investigations in order to identify problems and needs
- 3.3.2
  - Producing a design brief and specification
  - Carry out investigations in order to identify problems and needs
- 3.3.4 / 3.3.5
  - Generating design ideas
  - Generate imaginative and creative design ideas using a range of

- A single portfolio and prototype product(s) that meet the assessment criteria set by the exam board in the specification.
  - Work will be marked by teachers and moderated by AQA
  - Students are free to revise and redraft a piece of work before submitting the final piece for assessment. Teachers can review draft work and provide generic feedback to ensure that the work is appropriately focused.
- In providing generic feedback Teachers **can**:
- provide feedback in oral and/or written form
  - explain syntax in general terms

- Learning from all previous DT work throughout KS3 and year 10 – ‘The Design Process’ and ‘Iterative Design Process’
- Literacy** Keywords will have been discussed at KS3 in all making section
- Science** –  
6R’s  
Material properties,  
Sustainability  
Issues,  
Material enhancement (finishes)
- PSHCE**  
Ethical, Moral, social issues
- Maths** – measure ,marking out, cutting lists  
Tessellation of shapes – economical use of materials.  
Calculating area and quantities-maths focus

- Careers**
- Graphic Designer
  - Advertising
  - Brand Development
  - Web Designer
  - Games Designer
  - Pattern Designer
  - Manufacturing
  - Craft
  - Engineering
  - CAD technician.
  - Clothing/textile technologist.
  - Exhibition designer.
  - Furniture designer.
  - Interior and spatial designer.
  - Product designer.
- Future learning**
- Graphics
  - Photography
  - Game Design
  - A level PD
  - Engineering
  - Art
  - Textiles

	<p>different design strategies</p> <ul style="list-style-type: none"> <li>➤ Explore and develop their own ideas: <ul style="list-style-type: none"> <li>• Freehand sketching, isometric and perspective</li> <li>• 2D and 3D drawings</li> <li>• Annotated drawings that explain detailed development or the conceptual stages of designing</li> </ul> </li> <li>➤ 3.3.5, 3.3.6</li> <li>➤ Developing design ideas <ul style="list-style-type: none"> <li>• Annotated drawings that explain detailed development or the conceptual stages of designing</li> <li>• Modelling: working directly with materials and components</li> </ul> </li> </ul> <p>3.1.6, 3.1.6.2, 3.2.1, 3.2.5, 3.2.8, 3.2.9, 3.3.7, 3.3.8, 3.3.9, 3.3.10</p> <ul style="list-style-type: none"> <li>➤ Realising design ideas</li> </ul>	<ul style="list-style-type: none"> <li>• advise on resources that could be used</li> <li>• remind students of the key sections that should be included in their final folder.</li> </ul> <p>In providing generic feedback Teachers <b>cannot:</b></p> <ul style="list-style-type: none"> <li>• correct a student's work</li> <li>• provide templates, model answers or writing frames</li> <li>• provide specific guidance</li> <li>• provide specific feedback to students on how to improve their projects to meet the requirements of the marking criteria</li> <li>• give examples of how to implement</li> <li>• provide feedback where a student has produced an incomplete stage and this is sufficient to allow progression to the next stage.</li> </ul>		
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	<ul style="list-style-type: none"> <li>• Satisfy the requirements of the brief</li> <li>• Respond to client wants and needs</li> <li>• Demonstrate innovation</li> <li>• Are functional</li> <li>• Consider aesthetics</li> <li>• Are potentially marketable</li> </ul> <ul style="list-style-type: none"> <li>➤ Cut materials efficiently and minimise waste</li> <li>➤ Use appropriate marking out methods, data points and coordinates</li> <li>➤ How to select and use specialist tools and equipment, including hand tools, machinery, digital design and manufacture, appropriate for the material and/or task to complete quality outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>➤ A clear distinction must be drawn between providing feedback to students as part of work in progress and reviewing work once it has been submitted by the student for final assessment.</li> <li>➤ <b>Once work is submitted for final assessment it cannot be revised.</b> It is not acceptable for teachers to give, either to individual students or to groups, feedback and suggestions as to how the work may be improved in order to meet the marking criteria</li> <li>➤ All practical work that is submitted for assessment must be completed under direct supervision. If a student needs to undertake some work that cannot be completed in school/college no credit can be given for the</li> </ul>		
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	<ul style="list-style-type: none"> <li>➤ Select and use specialist techniques and processes appropriate for the material and/or task and use them to the required level of accuracy in order to complete quality outcomes</li> <li>➤ Surface treatments and finishes</li> <li>➤ Analysing &amp; evaluating</li> <li>➤ 3<sup>rd</sup> party evaluation</li> <li>➤ Specification and brief review</li> <li>➤ Manufacture for industry</li> <li>➤ Testing strategies – performance</li> </ul>	<p>work undertaken off site. You must ensure that you are familiar with the prototype before it is taken off site and also verify it after any off site work has been completed to ensure that the only work that has been completed off site is what has been discussed beforehand.</p> <ul style="list-style-type: none"> <li>➤ Students must have sufficient direct supervision for the written element to ensure that the work submitted can be confidently authenticated as their own. If a student receives additional assistance and this is acceptable within the guidelines for this specification, you should award a mark that represents the student's unaided achievement. Please make a note of the support the student</li> </ul>		
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		received on the CRF and sign the authentication statement. If the statement is not signed, we cannot accept the student's work for assessment.		
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## Year 11 Overview

Term	Knowledge	Assessment	Connections to learning	Connections to future pathways
Spring 2	<p>Students continue revision and Focus Practical tasks to support their preparation of the D&amp;T GCSE Written Exam (50% of the final grade) with confidence. Dates for the D&amp;T exam have not yet been released at the time of this publication. They should be aware of the types of questions that may come up in the exam, including theory content, how and what the wording means and how to answer the questions with the correct type of response. Students will cover areas that they have not yet covered in the course and enhance any previously taught/learnt content to apply their knowledge and understanding of the course and use specific technical language.</p> <p>To be fully aware of the 3 areas of assessment: 3.1 Core technical principles, 3.2 Specialist technical principles, 3.3 designing and making principles.</p>			
	<p>➤ 3.1.1</p> <ul style="list-style-type: none"> <li>• New and Emerging technologies</li> <li>• Industry</li> <li>• Enterprise</li> <li>• Sustainability</li> <li>• People</li> <li>• Culture</li> </ul>	<p>➤ <b>Product analysis</b></p> <p>➤ Exam style questioning and past/specimen papers</p> <p>➤ Case studies – both practical and theory write up.</p>	<p>➤ All relevant prior knowledge built up in the NEA</p> <p>➤ Other areas previous learnt in:</p> <p><b>Science</b> Material properties. Movement/forces and levers.</p>	<p><b>Careers</b> Graphic Designer Advertising Brand Development Web Designer Games Designer Pattern Designer Manufacturing Craft</p>

	<ul style="list-style-type: none"> <li>• Society</li> <li>• Environment</li> <li>• Production Techniques and systems</li> <li>• Obsolesces (planned and maintenance)</li> </ul> <p>➤ 3.1.2</p> <ul style="list-style-type: none"> <li>• Energy generation and storage</li> <li>• Fossil fuels</li> <li>• Nuclear power</li> <li>• Renewable energy</li> <li>• Storage (battery)</li> </ul> <p>➤ 3.1.3</p> <ul style="list-style-type: none"> <li>• Developments in new materials</li> <li>• Modern materials</li> <li>• Smart materials</li> <li>• Composite materials</li> <li>• Technical Textiles</li> </ul> <p>➤ 3.1.4</p> <ul style="list-style-type: none"> <li>• Systems approach to designing</li> <li>• Inputs</li> <li>• Processes</li> <li>• Outputs</li> </ul> <p>➤ 3.1.5</p> <ul style="list-style-type: none"> <li>• Mechanical Devices</li> </ul>	<p>➤ QC and QA revision notes</p> <p>➤ Materials testing and experiment investigation – practical and theory</p> <p>➤ Processes testing and experiment investigation – practical and theory</p> <p>➤ Presentations of research and findings.</p> <p>➤ Note taking skills employed to broaden knowledge of a range of designers and companies.</p> <p>➤ Key words – knowledge tests/games</p>	<p>Fossil fuels and renewable energy.</p> <p>Smart materials</p> <p>Material extraction</p> <p>Metals and polymers make up and physical properties.</p> <p>Temperature treatment to materials.</p> <p>Oil into plastics</p> <p>Ore into metals</p> <p>Trees into woods – natural materials (biology)</p> <p><b>RE/PSHCE</b> – society and culture. Energy consumption.</p> <p><b>Geography</b> – sustainability/fossil fuels. Timbers and working properties</p> <p><b>Maths</b> – Sizes and shapes of parts. Addition and ratios.</p> <p><b>IT</b></p> <p>Input, process, output systems</p> <p><b>Literacy</b></p> <p>Keywords will have been discussed at KS3 in all making section</p> <p>Technical vocab – tools/equipment/machines/processes/Materials.</p>	<p>Engineering</p> <p>CAD technician.</p> <p>Clothing/textile technologist.</p> <p>Exhibition designer.</p> <p>Furniture designer.</p> <p>Interior and spatial designer.</p> <p>Product designer.</p> <p><b>Future learning</b></p> <p>Graphics</p> <p>Photography</p> <p>Game Design</p> <p>A level PD</p> <p>Engineering</p> <p>Art</p> <p>Textiles</p> <p>Context to embed knowledge and understanding for A Level / Degree</p>
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	<ul style="list-style-type: none"> <li>• Movements</li> <li>• direction/forces</li> </ul> <p>➤ 3.1.6</p> <ul style="list-style-type: none"> <li>• Materials and their properties</li> <li>• Categories</li> <li>• Natural and manufactured timbers</li> <li>• Metals and alloys</li> <li>• Polymers</li> <li>• Textiles</li> <li>• Paper and card</li> </ul> <p>➤ 3.1.6.2</p> <ul style="list-style-type: none"> <li>• Material Properties</li> <li>• absorbency (resistance to moisture)</li> <li>• density</li> <li>• fusibility</li> <li>• electrical and thermal conductivity</li> <li>• strength</li> <li>• hardness</li> <li>• toughness</li> <li>• malleability</li> <li>• Ductility and elasticity.</li> </ul>			
<p><b>Summer 1</b></p>	<p>Prepare students to attack the D&amp;T GCSE exam (50% of the final grade) with confidence. They should be aware of the types of questions that may come up in the exam, including theory content, how and what the wording means and how to answer the questions with the correct type of response. Students will cover areas that they have not yet covered in the course and enhance</p>			

any previously taught/learnt content to apply their knowledge and understanding of the course and use specific technical language.

To be fully aware of the 3 areas of assessment: 3.1 Core technical principles, 3.2 Specialist technical principles, 3.3 designing and making principles. Plus the type of questions they may appear on the examination paper and wording used by the exam body (AQA). How to fully answer and justify answers in relation to the marks available. Fully understand the format of the paper they will be sitting.

- 3.2.1
  - Selection of materials or components
  - ACCESSFMM
  - Ethical factors
- 3.2.2
  - Forces and stresses
  - Materials and objects and be manipulated
  - Materials can be enhanced
- 3.2.3 3.3.2
  - Ecological and social footprint
  - Ecological issues in the manufacture of products
  - The 6R's
  - Social issues on the design and manufacture of products

- Exam style questions
- Case study
- Revision sheets
- Works sheets
- Q&A sessions

**Science -**  
 Sustainability 6R's  
 Extraction of raw materials  
 Material transition from raw into usable state  
 Users needs and wants  
 Life cycle analysis of materials and products.  
 Forces and stresses on materials

**RE/PSHCE –**  
 Moral, social, environmental, cultural and religious issues surround materials their extraction and the harm on environments and people, esp in developing countries.  
 Exploitation/fair trade  
 Pollution

**Geography –**  
 sustainability/fossil fuels.  
 Timber/ deforestation  
 Population of developing countries

**Careers**  
 Designer  
 Manufacturing  
 Craft  
 Engineering  
 CAD technician.  
 Clothing/textile technologist.  
 Colour technologist.  
 Exhibition designer.  
 Furniture designer.  
 Interior and spatial designer.  
 Product designer.  
 Architect

**Future learning**  
 A level PD  
 Graphics  
 Engineering  
 Art  
 Textiles  
 Employment  
 Apprenticeship

Context to embed knowledge and understanding for A Level / Degree

	<ul style="list-style-type: none"><li>• Environmental, social and economic challenge</li><li>• Deforestation</li><li>• possible increase in carbon dioxide levels leading to potential global warming</li><li>• the need for fair trade.</li></ul> <p>➤ 3.2.4</p> <ul style="list-style-type: none"><li>• Sources and origins</li><li>• Primary sources of materials and the main process in converting into workable forms (trees into woods)</li></ul> <p>➤ 3.2.5</p> <ul style="list-style-type: none"><li>• Using and working with materials</li><li>• Properties of materials</li><li>• The modification of properties for specific purposes</li><li>• How to shape and form using cutting, abrasion and addition</li></ul>		Sources of raw materials across the world. Pollution	
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➤ 3.2.6

- Stock forms, types and sizes
- In relation to at least one material category, you should know and understand the different stock forms types and sizes in order to calculate and determine the quantity of materials or components required.

➤ 3.2.7

- Scales of production
- Prototype
- Batch
- Mass
- Continuous

➤ 3.2.8

- Specialist techniques and processes
- The use of production aids
- Tools, equipment

	<ul style="list-style-type: none"> <li>• How materials and cut, shaped and formed.</li> <li>• Commercial processes (CAD/CAM)</li> <li>• Quality Control</li> </ul> <p>➤ 3.2.9</p> <ul style="list-style-type: none"> <li>• Surface treatments and finishes</li> <li>• The preparation and application of treatments and finishes to enhance functional and aesthetic properties</li> </ul>			
	<p>➤ 3.3.3</p> <p>➤ The work of others: Specifically we will study <b>2</b> of the following:</p> <ul style="list-style-type: none"> <li>• Aldo Rossi</li> <li>• Charles Rennie Macintosh</li> <li>• Gerrit Rietveld</li> <li>• Marcel Breuer</li> <li>• Norman Forster</li> <li>• Philippe Starck</li> <li>• Sir Alec Issigonis</li> <li>• Dieter Rams</li> </ul>	<p>➤ Case studies</p> <p>Homework/home learning tasks</p>	<p><b>History</b> – Impact of society since world war 1</p> <p><b>Science</b> - Human factors - Ergonomics</p> <p><b>Design Technology</b> Home learning project in KS3 Aesthetics Design movement homework Marketing</p>	<p><b>Careers</b> Designer Manufacturing Craft Engineering CAD technician. Clothing/textile technologist. Colour technologist. Exhibition designer. Furniture designer. Interior and spatial designer. Product designer. Architect Marketing</p>

	<ul style="list-style-type: none"> <li>➤ And <b>2</b> companies from: <ul style="list-style-type: none"> <li>• Alessi</li> <li>• Apple</li> <li>• Braun</li> <li>• Dyson</li> </ul> </li> </ul>			<p>Art/design gallery director</p> <p><b>Future learning</b>  A level PD  Graphics  Engineering  Art  Textiles  Employment  Apprenticeship</p> <p>Context to embed knowledge and understanding for A Level / Degree</p>
	<ul style="list-style-type: none"> <li>➤ Science and Maths links that 'should' be taught through core subject Lessons at BLS in KS3 and KS4.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Practise papers and questions</li> <li>➤ NEA</li> <li>➤ Worksheets</li> </ul>	<p><b>Maths links-</b>  Recognise and use expressions in decimal and standard form.  Use ratios, fractions and percentages.  Calculate surface area and volume.  Presentation of data, diagrams, bar charts and histograms  Plot, draw and interpret appropriate graphs.</p> <p>Translate information between graphical and numeric form  Use angular measures in degrees.</p> <p>Visualise and represent 2D and 3D forms including two</p>	<p><b>Careers</b>  Designer  Manufacturing  Craft  Engineering  CAD technician.  Clothing/textile technologist.  Colour technologist.  Exhibition designer.  Furniture designer.  Interior and spatial designer.  Product designer.  Architect</p> <p><b>Future learning</b>  Content to embed knowledge and understanding for A Level / Degree</p>

			<p>dimensional representations of 3D objects Calculate areas of triangles and rectangles, surface areas and volumes of cubes.</p> <p><b>Science links</b> Quantities, units and symbols SI units (eg kg, g, mg; km, m, mm; kJ, J), prefixes and powers of ten for orders of magnitude (eg tera, giga, mega, kilo, centi, milli, micro and nano). Metals and non-metals and the differences between them, on the basis of their characteristic physical and chemical properties.</p> <p>The basic principles in carrying out a lifecycle assessment of a material or product. The conditions which cause corrosion and the process of corrosion and oxidation. The composition of some important alloys in relation to their properties and uses.</p> <p>The physical properties of [materials], how the properties of materials are selected related to their uses.</p>	
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			<p>The main energy sources available for use on Earth (including fossil fuels, nuclear fuel, bio-fuel, wind, hydro-electricity, the tides and the Sun), the ways in which they are used and the distinction between renewable and non-renewable sources.</p> <p>The action of forces and how levers and gears transmit and transform the effects of forces.</p>	
<p><b>Summer 2</b></p>	<p>Prepare students to attack the D&amp;T GCSE exam (50% of the final grade) with confidence. They should be aware of the types of questions that may come up in the exam, including theory content, how and what the wording means and how to answer the questions with the correct type of response. Students will cover areas that they have not yet covered in the course and enhance any previously taught/learnt content to apply their knowledge and understanding of the course and use specific technical language.</p> <p>To be fully aware of the 3 areas of assessment: 3.1 Core technical principles, 3.2 Specialist technical principles, 3.3 Designing and making principles. Plus the type of questions they may appear on the examination paper and wording used by the exam body (AQA). How to fully answer and justify answers in relation to the marks available. Fully understand the format of the paper they will be sitting.</p>			
	<ul style="list-style-type: none"> <li>➤ Exam technique</li> <li>➤ Key words / vocab</li> <li>➤ Recap on drawing/presentation</li> </ul>	<ul style="list-style-type: none"> <li>➤ Practise papers and questions</li> <li>➤ Q&amp;A sessions</li> </ul>	<ul style="list-style-type: none"> <li>➤ All prior learning has led to this point</li> </ul>	<p><b>Careers</b>  Designer  Manufacturing  Craft  Engineering  CAD technician.  Clothing/textile technologist.  Colour technologist.</p>

	<p>➤ Plus any areas that students feel the need to 'go over' again.</p>			<p>Exhibition designer. Furniture designer. Interior and spatial designer. Product designer.</p> <p><b>Future learning</b> Content to embed knowledge and understanding for A Level / Degree</p>
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