Year 10 Overview 2025-26 – GCSE D&T

Date	Wk	Week	Unit(s)		Key Learning Outcomes (Exam Links)
Tues 2-Sep	A	1	**Intro Course:** books, progress sheets etc.	**Materials and their working properties:** Natural and manufactured timbers	**Theory covering points from the spec:** 3.1.6. Materials and their Working properties. 3.2.5 Using and working with materials 3.2.6 Stock forms, types, and sizes 3.2.8 Specialist techniques and processes - The use of production aids, Tools, equipment, and processes, how materials are cut shaped and formed to a tolerance, Quality control 3.2.9 Surface treatments and finishes. 3.3.8 Tolerances 3.3.10 Specialist tools and equipment **Assessment and Feedback** Knowledge Audit to test students' knowledge on Materials and their working properties. Marked by the teacher and formal feedback given. WWW & EBI recorded on the yellow feedback sheet in book Week 9
8-Sep	B	2		**Timber Joints Skill based practice** to create a phone holder: **Specialist Technical Principles:** Using and working with Timber based Materials **Making Principles:** Tolerances and allowances, Material management and marking out.	
15-Sep (INSET Friday)	A	3	**Materials and their working properties:** Natural and manufactured timbers	**Polymers pencil holder Skill based practical to create a phone holder:** **Specialist Technical Principles:** Using and working with Polymer based Materials, Specialist Techniques and Processes, Surface treatments and finishes **Making Principles:** Tolerances and allowances, Material management and marking out.	
22-Sep	B	4		**Materials and their working properties:** Polymers	
29-Oct	A	5	**Materials and their working properties:** Polymers	**Textile drawstring bag Skill based practical:** **Specialist Technical Principles:** Using and working with Textile based Materials, Specialist Techniques and Processes. **Making Principles:** Tolerances and allowances, Material management and marking out.	
6-Oct	B	6		**Materials and their working properties:** Textiles	
13-Oct	A	7	**Materials and their working properties:** Textiles	**Materials and their working properties:** Paper and Board	
20-Oct	B	8		**Materials and their working properties:** Metals **End of Unit assessment**	
Half Term					
3-Nov	A	9	**Mini NEA Lettering Project Introduced** **Designing principals:** Investigation, primary and secondary data End of Unit assessment feedback	**Mini NEA Lettering Project Introduced** **Designing principals:** Students complete Client Profile, Client to be a real client to prepare for NEA Brief and Specification	**Mini NEA Lettering Project** A01. Identify, Investigate A02. Design and make prototypes. A03 Analyse, test and evaluate. **Theory covering points from the spec:** 3.3.1 Investigation, primary and secondary data Use primary and secondary data to understand client and/or user needs - How to write a design brief and produce a design and manufacturing specification. 3.3.3 The work of others 3.3.4 Design strategies - Generate imaginative and creative design ideas using a range of different design strategies, Explore and develop their own ideas. 3.3.5 Communication of design ideas 3.3.6 Prototype development 3.3.9 Material management - Cut materials efficiently and minimise waste, Use appropriate marking out methods, data points and coordinates **Feedback** Mini NEA to be marked by teacher. Students can use feedback progress when starting on their real NEA. Feedback recorded on yellow feedback sheet in book. Given in week 17
10-Nov	B	10		**Mini NEA Lettering Project** **Designing principals:** Communication of design ideas and prototype development Drawing Practice. Students start their design ideas.	
17-Nov	A	11	**Mini NEA Lettering Project** **Designing principals:** **Introduction to sketch-up to aid drawing and modelling**	**Mini NEA Lettering Project** **Designing principals:** Communication of design ideas and prototype development Students respond to design feedback. Completion of design ideas.	
24-Nov	B	12		**Mini NEA Lettering Project:** **Development sampling**	
1-Dec	A	13	**Mini NEA Lettering Project:** Final design Idea.	**Mini NEA Lettering Project:** Making of final prototype	
8-Dec	B	14		**Mini NEA Lettering Project:** Making of final prototype	
15-Dec	A	15	**Mini NEA Lettering Project:** Making of the final Prototype	**Mini NEA Lettering Project:** Making of final prototype	
Christmas Holiday					
5-Jan	B	16	**Mini NEA Lettering Project:** Manufacturing Specification. Complete as homework	**Mini NEA Lettering Project:** Making, Testing and Evaluation	**Structures Project** 3.2.2 Forces and stresses - Materials and objects can be manipulated to resist and work with forces and stresses, Materials can be enhanced to resist and work with forces and stresses to improve functionality. 3.3.3 The work of others 3.3.5 Communication of design ideas 3.3.6 Prototype development **Feedback** Feedback on designer research. Week 22 **Material Specialism** Students pick material of their choice to develop more in-depth knowledge of. This Follows on from the skill based practical lessons where pupils learnt the special technical processes to work with the three main material areas we focus on, Timbers, Textiles, Polymers. These theory lesson cover; 3.2.1 Selection of materials or components 3.2.4 Sources and origins 3.2.5 Using and working with materials 3.3.10 Specialist tools and equipment 3.3.11 Specialist techniques and processes To enables students to build an in-depth knowledge of the Origins of materials and how they are processed into a stock from and used in commercial manufacture. **Feedback**
12-Jan	A	17		**Specialist technical Principles:** **Material Specialism, Sources, properties and Origins**	
19-Jan	B	18	**Structures Project:** Introduction to project. Forces and stresses **Specialist Technical principles: - Forces and Stresses**	**Specialist technical Principles:** **Material Specialism, Commercial Manufacturing, Surface treatments and finished and quality control**	
26-Jan	A	19		**New and emerging technologies:** Industry and enterprise	
2-Feb	B	20	**Structures Project:** Designer research **Designing and Making Principles:** The work of others	**New and emerging technologies:** People, culture and society	

9-Feb	A	21		**New and emerging technologies:** Sustainability and the environment	Exam Question based around material specialism. Feedback recorded on yellow feedback sheet in book. Given in week 19
Half Term					
23-Feb	B	22	**Structures Project:** Design ideas and preparing drawing for manufacture. Use of a drawing board. **Designing and Making Principles:** Communication of design ideas.	**Specialist Technical Principles:** Ecological and social footprint, 6Rs	**Theory covering points from the spec:** 3.1.1 New and emerging technologies 3.2.3 Ecological and social footprint – The 6 Rs 3.2.7 Scales of production 3.1.5 Mechanical Devices
2-Mar	A	23		**New and emerging technologies:** Production techniques and systems	
9-Mar	B	24	**Structures Project:** Design ideas and preparing drawing for manufacture. Use of a drawing board. **Designing and Making Principles:** Communication of design ideas.	**New and emerging technologies:** Informing design decisions, recap sheet	
16-Mar	A	25		**Structures Project:** Construction of Bridge **Mechanical Devices theory**	
23-Mar	B	26	**Structures Project:** Construction of bridge	**Structures Project:** Testing and Evaluation. Use of Bridge builder software **Mechanical Devices theory**	
30—Mar	A	ST1		ST1 Exam	
Easter Holiday					
20-Apr	B	ST1	**Revision lesson**	**ST1 Exam Feedback**	**Feedback** Exam Feedback. Week 28
27-Apr	A	29		**Designing and Making Principles - Design Development Project** Students introduced to new context. Mind map idea. Initial research and initial design ideas	**Theory Covered from Spec; 3.2.1 Selection of materials or components,** (Availability: ease of sourcing and purchase. Cost: bulk buying.) **3.2.6 Stock forms, types and sizes,** (standard components eg screws, nuts and bolts, hinges. standard components eg zips, press studs, velcro.) **3.3.3 The work of others** **3.3.4 Design strategies, Explore and develop their own ideas** (iterative design, avoiding design fixation.) **3.3.5 Communication of design ideas** **3.3.6 Prototype development** **3.3.7 Selection of materials and components** **Feedback** Feedback on project. This feedback will help students during their NEA. Feedback recorded on yellow feedback sheet in book. Week 34
4-May (Bank holiday Mon)	B	30	**Designing and Making Principles - Design Development Project** Designer research	**Designing and Making Principles - Design Development Project** Students use designer research and peer feedback to further their design ideas. Start to model in card.	
11-May	A	31		**Designing and Making Principles - Design Development Project** Continue card modelling. Photograph models and develop designs by sketching over photographs of models. Students analyse findings	
18-May	B	32	**Designing and Making Principles - Design Development Project** Skills based practical. Hinges demo.	**Designing and Making Principles - Design Development Project** Students complete 3 samples to support the development of their idea. Development to be Analysed and documented using text and photographs on team	
Half Term					B
1-Jun	A			**NEA** –introduction to NEA and contexts, explore contexts and set up NEA document	**Theory Covered from Spec;** 3.3.1 Investigation, primary and secondary data 3.3.4 Design strategies 3.3.5 Communication of design ideas **NEA** A01. Identify, Investigate A02. Design and make prototypes. A03 Analyse, test and evaluate.
9-Jun	B	34	**Development project feedback** **NEA** –introduction to NEA and contexts, explore contexts and set up NEA document	**NEA -** Intro Client profile. Students complete a client profile task and start their own client profiles. Coming up with questions for client	
16-Jun	A	35		**NEA -** Complete Client Profile with answers to questions. Summarise	
23-Jun	B	36	**Designing and making Principles** Investigating Primary and Secondary data	**NEA -** Intro Research. Mood board	
30-Jun	A	37		**NEA -** Further research analyse and summarise	
7-Jul	B	38	**Designing and making principles** Design Strategies	**NEA -** Whole class feedback Students respond	
14-Jul	A	39		**NEA -** Further research	

UNIT – 3D lettering project (see lesson by lesson power point, Students document learning on a team's document, 16H)

Prior	Current	Future learning
Followed the design process in a very linier fashion at KS3. Have varying levels of making skills in a range of materials.	To work individually and increasingly independently to analyse, research and investigate the task. To identify the target market and write your own Brief. To draw and present a range of ideas, developing the best ideas and how they will be prototyped in the preferred material. To construct the prototyped ideas to a high standard of quality and in the preferred material. Test prototypes and formally evaluate their success.	Understanding of NEA mark scheme. Select material area (s) they wish to work in further and realise the skills needed to use that material(S) to solve problems. Links to use in NEA and final examination.

GW- They can decide what the task is asking them to do and research existing products. They can decide who to make it for and write a basic brief.
Draw out a range of ideas before selecting one and understand how at least one material could be used on this task. Use skills to construct at least one prototype with some quality

Key learning outcomes:

Mini version of NEA to enable pupils to familiarise themselves with the marking criterion, focus on quality iterative design and recording of it.
Analyse context and research into a relevant target market.
Analysing designer and product research gathered to evaluate and influence design ideas.
Writing their own brief and specification. Mark scheme outlined at all stages.
Presenting a range of ideas, drawing skills, CAD, materials knowledge, reflecting on fulfilment of the brief. Development ongoing research, refining, quality of annotation. AO3
Practical making using minimum of 2 different materials. Diary of making, Ongoing developments all logged in file. Acquisition of new skills AO2
How to test. Reflection. Presentation to target market for testing. Formal evaluation.

Links to history and culture:
Product evolution, material invention and processing.
Subject links:
Business studies, geography.
Careers that can be discussed:
Researcher, Designer, materials specialist, Buyer, fashion designer, interior designer etc
Key words for their learning:

checking. Gather basic reactions to the prototypes and produce a simple evaluation of the product.

BI- They can analyse the task fully showing understand the areas to be considered and collect a range of research. Understand what would make the product suitable for this person and write a clear brief to follow. Produce a range of ideas and developments, through materials knowledge and are able to draw and sketch ideas clearly to show the understanding of the constructional details. Can construct prototypes, following designs carefully. Show a good range of skills and take time to ensure a quality finish. Gather public opinion on prototypes and evaluate in some depth the product and explain how improvements could be made.

EW-They can analyse the task fully showing a good understand the areas which will have to considered and what information they may need to research. Research is wide ranging gathering information from a wide range of sources which they independently find.
Are able to discuss the target markets needs and wants and using their thoughts as a basis of their designs. Produce a detailed brief based on both the needs of the client and the manufacturer.
Able to produce a range of ideas and developments to produce a really unique idea. Their skills enable them to consider the quality of the materials to produce the product and the high level of finish required. They construct prototypes, following their designs exactly to produce carefully crafted prototypes. Their skills enable the work the materials very well, in a number of ways to produce the range of prototypes and the high level of finish required. Students gather a wide range of opinions on their prototypes and in the evaluation can consider these opinions. Evaluating in depth the product, plus a reflective evaluation on how the product could be improved or developed further.

Key words from the design process, plus- iterative design, primary and secondary data, client, corporate, plus a wide range of terms specific to the materials and tooling used within their prototypes.

How will we know they have learnt it?

Completion of a successful document, printed and presented in folder. This will explain their learning and choices or decisions made throughout the process. The ongoing analysis should have positively influenced the outcome of the product. Assessment is through both verbal and written feedback on completion of the project. Their ability to use the materials and tools with increasing care and control. Using mixed materials with increased confidence. High quality outcome.
Practical evidence (recorded through photographs in their booklet)

Where has Equality Diversity and Inclusion (EDI) been included for teaching the curriculum?

Looking at target markets, and marketability of products, Company consumer profiles, Famous designers and inventors of processes within the material areas.

THEORY UNIT – Section 1 New and emerging Technologies, Scales of Production, ecological and social footprint, 6Rs (6 Double lessons)

Prior	Current	Future learning
Very little formal theory lessons done before this point in D&T. Students may have some prior knowledge on sustainability from other subjects, primary ect. Scales of production introduced in year 9 Cad/Cam	Introduce the idea of separate theory lesson. The setting out of book required, how notes should be taken, sheets glued in, Summery of learning etc. Introduce the pattern of the lessons. How they are grouped, how they relate to the text book and exams. Students start to understand design as a concept in the wider world and how products are produced in industry. Links to career paths Unit recap sheet.	All theory work links directly to theory knowledge required to the examination.

GW- You can select your own product and explain at least two reasons why it has evolved. You understand what global warming and pollution are and how design and manufacturing contribute towards it. Understand the difference between market pull and technology push. Understand what the abbreviations stand for and the word Automation. You understand why we should recycle and repair products.

BI- You can select your own good example of a product which has evolved over time and give good reasons for this, relating to industrial and social issues. You can explain each of the terms and how they relate to the commercial development of products. You can explain the issues causing it and give some examples of products/materials which help the environment and ones which are destroying it. You realise that we all are responsible for our impact on the planet. You can select your own good examples of the above and realise that trends and fashion are part of this. You can explain the meaning of them and give an example of their use in industry. You can see the need for the above and can understand why planned obsolesce happens.

EW- You can select your own good example of a product which has evolved over time and give relevant reasons for why. Relating it to key developments in social history and industrial development over the 20th century. You can select your own good example of a product which has evolved due to the above and the reasons why it worked. Relating it to key developments in social history and industrial development over the 20th century. You can select your own examples of both designs and new technologies that are both good for and damaging the planet. Understand about sustainability and waste management. You can select your own good examples of market pull and technology push, relate it to society trends and fashion. You can also explain how it can affect both society close to home and global society. You can explain the benefits of such systems to the manufactures and how they also affect the consumer. You can also explain why the manufactures always strive to improve their systems. You can select your own good examples of products which can be reused or recycled and explain the benefits. You can also explain the idea of planned obsolescence from the manufactures and consumers point of view.

Key learning outcomes:

Lesson1 - Industry and enterprise
To understand the impact of new and emerging technologies on: The design and organisation of the workplace Tools and equipment. Be aware of how computers and automation have changed manufacturing using robotics.
Understand how **innovation** can drive product development and enterprise including the use of **crowd funding** and **virtual marketing** Understand **co-operative** and **fair-trade** organisation.
Lesson 2 - People, culture and society

Understand how **technology push** and **market pull** affect consumer choice and employment. Realise how new products can have both a positive and negative impact on society
Lesson 3 - Sustainability and the environment
Understand the positive and negative impacts of both new technologies and new products on the environment. Realise that the environment can be protected with responsible design and manufacturing
Lesson 4 - Ecological and social footprint, 6Rs
Understand that greenhouse gases and carbon are produced in the manufacture of products. Understand the impact that consumer society has on the environment. Be aware of the need for social and government responsibility to address safe working conditions and pollution. Understand how the 6 Rs are used to make more sustainable decisions.
Lesson 5 - Production techniques and systems

Understand Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM) including contemporary and potential future use of automation,
Understand how Flexible Manufacturing Systems (FMS), Just In Time (JIT) and Lean Manufacturing contribute to manufacturing efficiencies

Lesson 6 - Scales of production

Understand why and how products are produced in different volumes.

Lesson 7 - Informing design decisions
Understand how products can be designed to be repaired and recycled. What is **planned obsolescence** and what are its advantages and disadvantages. Be aware of ethical and environmental concerns when designing with new technologies.

Links to history and culture:

Product evolution, material invention and processing, robotics, cobots, recycling repair, global warming and wide global issues.

Subject links:

Business studies, science, geography, history.

Careers that can be discussed:

Engineer, computer analyses', programmer, designer, materials specialist, marketing, financial services, material scientist.

Key words for their learning:

Automation, manufacturing, robotics, innovation, crowd funding, virtual marketing, co-operative, fair trade, technology push, market pull, Computer Aided Design, Computer Aided Manufacturing, automation, cobots, Flexible Manufacturing Systems (FMS), Just In Time (JIT), Lean Manufacturing, planned obsolescence, ethical and environmental concerns

How will we know they have learnt it?

Notes in books, answering questions in lessons, worksheets, summery of learning sheets, practice exam questions.

UNIT – Structures Project (see lesson by lesson power point and booklet)

Prior	Current	Future learning

Key learning outcomes:

Students work in teams to collaboratively design a bridge. Understand how to use a drawing board
What are structures and how do we classify them. Forces and how do they act on structures. Struts and ties. How can we build to withstand these forces.
Learn about types of bridges. Design your own solution to bridge a ravine.
Learn how to use a drawing board. Accurately construct a bridge using straws (non specialist material).
Build in all cross members to construct a test prototype. Predict weak/ failure points.

Not formally studied before. Bring in their experience of the world and structures around them to start by evaluating what they know works.	What are structures and how do we classify them. Forces and how do they act on structures. How can we build to withstand these forces. Learn about types of bridges. Design a bridge. Learn how to use a drawing board. Accurately build bridge frames. Build in all cross members to construct a test prototype. Predict weak/ failure points Learn how to test your bridge. Evaluate its performance and explain why it failed. Use bridge builder to test solutions on PC. Suggest improvements which could help it to perform better. Learn about 4 types of motion and types of mechanisms. Mechanical advantage and how have humans used it to help them solve problems? What is engineering?	To use the principles as they start to develop products of their own and manipulate materials to gain strength, flexibility, rigidity etc. In their understanding of how many tools work. Links to use in NEA and in final examination.

GW- They can remember the names of the 4 categories of structures and the types of forces applied on them. They can name of the 4 categories of bridges. They construct carefully all elements of the bridge. They comment on and understand how the bridge failed. They can name some of the ways humans have designed systems to gain mechanical advantage, are able to answer at a basic level a range of exam style questions about this topic.

BI- They can both name and give examples of the 4 categories of structures and the types of forces applied on them. They can name and the 4 categories of bridges and give examples of bridges that are built in this way and have learnt from them to produce their own designs. They can also review the structure, spot potentially weak areas plus use the correct technical language to explain it. They can name the ways humans have designed systems to gain mechanical advantage and are able to answer a range of exam style questions about this topic.

EW- They can do all of the above plus understand why certain materials are chosen when designing structures/objects to withstand the forces that might or will act on them. They understand the forces that might act on the bridge and how to reinforce the structure against them. They can explain why these areas are weak and modify them before testing takes place. They can use technical language to suggest how to improve the performance of your bridge with further engineering after testing. They can name the ways humans have designed systems to gain mechanical advantage over time and can give good examples where these systems may be useful when solving problems for themselves.

Learn how to test the bridge. Evaluate its performance and explain why it failed. Suggest improvements which could help it to perform better.
What is Mechanical advantage and how have humans used it to help them solve problems? Groups of mechanical systems. What is engineering?
Knowledge to help answer exam style questions. Applied maths.

Links to history and culture:
History of bridge and materials development over time. Famous successful and disastrous bridges. Cultural travel, trade links, war time control of bridges. Mechanisms- factory working, lack of H&S and childhood labour.

Subject links:
History- British and world. Geography, science and maths

Careers that can be discussed:
Designer, engineer both mechanical, structural and civil engineering. Materials analysts, wind tunnel engineer etc.

Key words for their learning:
Tension, compression, shear, torsion and bending forces. Struts and ties. Cams, gears, pullies, linkages, levers. Types of motion linier oscillating, rotary, reciprocating. As well as a long list of tools and equipment used to form parts or make up parts of complex mechanisms.

How will we know they have learnt it?
Completion of a successful project booklet, explaining their learning and choices or decisions made throughout the process. Assessment is through both verbal and written feedback on completion of the project. Their ability to use the materials and tools with increasing care and control.
Practical evidence recorded through photographs in their booklet (possibly video evidence).
Practical application to exam practice questions and questions in ST2.

Where has Equality Diversity and Inclusion (EDI) been included for teaching the curriculum?
Interesting discussions about workforce used to build many historical bridges, Some famous designers. Population and community control due to bridges. Workforce deaths on large structures in different places cultures and times. Links to unions and HS&W of workers.

THEORY UNIT – Design Principles (delivered through theory, practical and early NEA lessons)

Prior	Current	Future learning
Students have used different design styles and presentation drawings before throughout KS3 . They have worked from different design influence and clients and have written simple design briefs and specifications.	This unit focuses on students being able to select the correct drawing techniques to communicate their designs on paper. Students become increasingly independent in conducting their own research both primary and secondary. Looks into the list of 20th century designers and design movements to enable them to study quality design and use their influence in their own designs or to be able to explain their works in examination questions.	Good selection of correct drawing styles to communicate their designs and successfully apply to exam questions Are able to name and explain the work of at least one designer and company/ design house within their NEA and examination questions.

GW- Know what 3rd angle Orthographic Projection, oblique, one and 2 point perspective and Isometric drawing is. Know the difference between primary and secondary data and can see how it helps understand the client's needs. Can write a basic design brief and produce a manufacturing specification. Know that the environment, and social and economic challenges influence designing and making in some ways. Able to use some design strategies to help produce imaginative and creative design ideas with some development. Students can record and justify some design ideas. They can respond to the key client wants and needs. Are able to critically evaluate prototypes and suggest some modifications. Can investigate, analyse and evaluate the work of others and how it can inform their designing. Be able to use to work of at least one designer, design movement or company, to explain design developments in an examination.

BI- Can use 3rd angle Orthographic Projection, oblique, one and 2 point perspective and Isometric drawing to communicate their ideas. Understand how primary and secondary data can be collected to assist the understanding of client and user needs. Know how to write a design brief and produce a manufacturing specification. Understand how the environment, and social and economic challenges influence designing and making. Be able to use a range of design strategies to help produce imaginative and creative design ideas. Understand how to explore and develop design ideas. Understand how to develop, communicate, record and justify design ideas. Be aware of a range of techniques to support clear communication of design ideas. Know how to design and develop prototypes in response to client wants and needs. Be able to critically evaluate prototypes and suggest modifications. Know how to investigate, analyse and evaluate the work of others. Understand how investigating the work of other designers can inform your designing. Be able to use to work of designers, design movements and companies, to explain in some detail design developments in an examination.
EW- Can use and interoperate 3rd angle Orthographic Projection, oblique, one and 2 point perspective and Isometric drawings well as part of their ideas and development. Understand the importance of primary and secondary data is to assist the understanding of client and user needs. Know how to write a design brief and produce a detailed manufacturing specification. Understand how the environment, and social and economic challenges influence designing and making. Able to use a wide range of design strategies to help produce imaginative and creative design ideas, clearly understand how to explore and develop design ideas, communicate, record and justify them. Use a range of techniques to support clear communication of design ideas, design and develop prototypes in response to client wants and needs. Be able to critically evaluate prototypes and suggest modifications, know how to investigate, analyse and evaluate the work of others. Understand how investigating the work

Key learning outcomes:
Revision and practice of 3rd angle Orthographic Projection and Isometric drawing. Introduction of one and 2 point perspective, exploded views.
Investigate using, primary and secondary data the importance of research and what type of research is required. Anthropometric, ergonomic. Use of data and charts. How it helps to build a true brief and specification.
Design strategies we can use and the communication of design ideas. Collaborative, User-centered design, Systems approach, Iterative design. Collaboration of designers. Design fixation.
The work of other designers. Artists, Designers, Design companies, Design movements, Trends and fashions, The built environment, Abstract patterns, nature and science. How can an investigation into the work of others be broken into different elements? Materials, Processes, Aesthetics, Design concepts, Form and function, Fitness for purpose, identify target market for product, Manufacture / administration infrastructure, Consistency with other products from the same designer.
Look at the designers and design movements recognised by AQA and case study at least one. The work of other companies (ones named by AQA), Influence on modern society and culture, Designers and design companies will be influenced by those who have gone before, Companies aim to build upon and improve design, to create a product that's more effective and also more desirable. Material development and technological innovations will continue to aid in the advancement of design.

Links to history and culture:
Popular culture, Design history, war time developments, cultural demographic data. Famous people and historic pieces of design history.

Subject links:
Business studies, Maths, History, science.

Careers that can be discussed:
Researcher, Designer, Engineer, Architect, materials specialist, fashion designer, interior designer, craftsman, Data management, Data collection, etc

Key words for their learning:
Collaboration, 3rd angle orthographic projection, isometric, oblique, primary research, secondary research, anthropometrics, ergonomics, design movements. A range of designer's names and design movements, brief, specification, analysis, influence, design fixation.

How will we know they have learnt it?
Notes in books, active during questions in lessons, worksheets, summery of learning sheets. Better use of key terms in NEA portfolios. Performance in ST1 exam in yr 11.
Through discussion on individual designers of their day, contributions to society and design movements at key times in historical change. Eg Coco Chanel, Alexander Macqueen, Vivienne Westwood. Plus ……. Women in war time design. GBTQ+ Agenda.

of other designers informs your designing. Use to work of a number of designers, design movements and companies to explain in detail design developments in an examination.	

UNIT – Materials

Prior	Current	Future learning
Students have used a range of materials in KS3 and have some basic knowledge on their origin, physical and working properties	The materials and their working properties focuses on Sections 3.1.6.1 and 3.1.6.2 of the AQA specification. It covers the categories and properties of a complete range of core materials within each of five specialist areas. The materials are covered through practical applications and with reference to the key material category in which they belong. The specific physical and working properties that best describe each material subcategory are identified and defined with reference to use and knowledge that will underpin practical designing and making activities. Students select on material, (Timber, Polymer, Textiles) and understand the sources of their chosen material its properties and origins', its history and development over time. How the material is worked and its common uses. They will also learn about its commercial use how it is used in manufacturing industries and the surface treatments and finishes which can be applied to it to enhance its performance. Theory based worksheet with physical examples and demonstrations	Better use of subject specific vocabulary to describe both the physical material properties and the working properties of the materials. Understanding materials and processes in more depth required for the written examination and in the NEA. Students work with a mixture of materials with increased confidence, creativity and independence. Able to answer section A of the exam with confidence and select the right material area in the exam questions in section B that have multi options.

GW- know the difference between physical and working properties. Understand where paper and board, timbers come from and can name some examples. Know where metals and alloys come from and explain what ferrous and non-ferrous mean. Know where polymers come from and explain what thermoforming and thermosetting mean. Know about textiles, where they come from and explain if they are natural or synthetic. Learn about the primary sources of the material and how it is prepared and then converted into products. Be aware of issues with manufacture and recycling of products made from this material. Learn how different properties of the material make it suitable for use in commercial products. Learn what stock forms, types and sizes of materials and components are. Be aware of school-based cutting, forming and processing techniques, tools and equipment. Realise how the properties of different materials affect their use in commercial applications. Be aware of commercial processing techniques. Understand why quality control is used with your materials. Understand how the application of surface treatments and finishes can modify the functional and aesthetic properties of materials.

BI- Plus explain how the raw materials are processed into paper and board and explain the categories of materials by their weight and thickness. Explain how the raw materials are processed and explain the categories of timber and name some from each group. The difference between metals and alloys and their uses. Why different polymers are used for different tasks and explain how raw materials are processed and how they are turned into fabrics. Be able to name some examples and their uses. Learn how the primary sources of the material are gathered and how it is prepared and then converted into products. Understand the ecological issues in the manufacture and recycling of products made from this material. Learn how different properties of the material make it suitable for use in commercial products. Know and understand the commercial stock forms, types and sizes of materials and components to calculate quantities. Be aware of school-based cutting, forming and processing techniques, tools and equipment. Understand how the properties of different materials affect their use in commercial applications. Be aware of commercial processing techniques. Understand why and how quality control is used with your materials. Understand how the application of surface treatments and finishes can modify the functional and aesthetic properties of materials.

EW- And be able to name most types of paper, timber, metals, polymers and textiles explain why their properties make them ideal for certain situations. Use the correct vocabulary to explain their properties. EW- Know how and where the primary sources of the material are gathered and how it is prepared and then converted into products. Understand the ecological and social issues in the manufacture and recycling of products made from this material. You know how different properties of the material make it suitable for use in commercial products and understand the commercial stock forms, types and sizes of materials and components to calculate quantities. Be able to name and explain/ use school-based cutting, forming and processing techniques, tools and equipment. Understand how the properties of different materials affect their use in commercial applications and able to explain it. Be aware of commercial processing techniques. Understand why and how quality control is used with your materials. Understand how the application of surface treatments and finishes can modify the functional and aesthetic properties of materials.

This unit develops students' knowledge and skills on the different material areas. Students begin the year by learning about the working and physical properties of all 5 material areas. Skills based practical's using Timber, Polymers and Textiles will be taught alongside the theory to enable students to build on their core practical skills and give them the skills to work with multi materials in design and make and NEA projects. This will be photographed, and the processes documented on a skill based practical worksheet. It also allows them to explore working with a variety of materials and put their newly acquired skills into practice with the mini-NEA lettering project before deciding which material to select to further deepen their knowledge on. Do Now activities at the beginning of lessons will be used to recall the knowledge from this unit. Students will use the material fact cards to help them recall.

Key learning outcomes:

To know the inherent physical properties of materials i.e. what they are good at.
Working properties i.e. how it responds to treatment.
Know the primary sources of materials for producing paper and board. Be able to recognise and characterise different types of papers and boards and how this effect their performance.
Know the primary sources of materials for producing natural and manufactured timbers. Be able to recognise and characterise different types of natural and manufactured timbers and how the physical properties of timbers affect their performance.
Know the primary sources of materials for producing metals and alloys. Be able to recognise and characterise different types of metals and alloys and how their properties affect their performance.
Know the primary sources of materials for producing polymers. Be able to recognise and characterise different types of polymers. Understand how the physical and working properties of a range of thermoforming and thermosetting polymers.
Know the primary sources of textiles and categorise them. Understand their physical and working properties.

Links to history and culture:

Product evolution, material invention and processing. Worldwide production of goods and trade.

Subject links:

Business studies, geography, History, science.

Careers that can be discussed:

Vast range. Researcher, Designer, materials specialist, Buyer, chemical scientist, fashion designer, interior designer, craftsman, tree feller, patten cutter, mould maker, injection mould designer.

Key words for their learning:

Absorbency, density, fusibility, electrical or thermal conductivity. strength, hardness, toughness, mailability, ductility, elasticity, coniferous, deciduous, thermoforming thermosetting. Material names for different types e.g. Ash, Pine, Mahogany etc. Name of processes, casting, weaving extrusion … and finishes lacquer, tantalizing, flame retardancy… Tool names which may be new to them e.g. bench hook, chisel, Die cutter etc.

How will we know they have learnt it?

Notes in books, material fact cards completed, quality practical outcomes, ability to explain processes, (helping others during skills practical's), actively answering questions in lessons, successfully completing do now activities. worksheets, summery of learning sheets. Better use of key terms in practical lessons and portfolios. Performance in ST2 exam.

UNIT – Design Development Project

Prior	Current	Future learning

This unit focuses on students understanding the design development process. Students continue to develop their drawing skills and exercise their creativity. They understand how a designer can influence their ideas and enable them to overcome design fixation. They understand the level of detail required in design development and how this process is iterative, creating card models to understand how to begin to visualise their products from 2D to 3D and creating 3 samples to further communicate their ideas.

Followed the design process in a very linier fashion at KS3. Students started to make more complex products in the Mini NEA lettering project and have started to understand the importance of developing an idea through sampling. Some understanding of how influential designers can help provide inspiration.	Through practical application students further knowledge on influential designers and how they can influence their design to avoid design fixation. Through practical application students understand how card modelling can develop their ideas and support the iterative design process.	Students apply practical know how of the development process during their NEA.

UNIT – START OF NEA TASK

Prior	Current	Future learning
All prior design projects. Materials knowledge and £d letters booklet as guide.	To look at the context from the examination board for assessment in the summer of 2026(released in June 2025) Setting up of NEA on Teams To selecting the best context for the individual student. To plan the research, client and brief for further study over the summer.	Key selection of the correct project. Further learning in their chosen material and prototype development and building but Jan 2024.

GW- They can decide what the context is asking them to do and research existing products. They can analyse the needs of the client and write a brief and a simple specification to follow.
They are able to match their level of work to the marks being awarded by the exam board for each section.

BI- They can analyse the context fully showing understand the areas to be considered and collect a range of research. Understand what would make the product suitable for the client and write a clear brief and specification which they can follow. They are able to ensure they match their level of work to the marks being awarded by the exam board for each section.

EW-They can analyse the context fully showing a good understand the areas which will have to considered and what information they may need to research. Research is wide ranging gathering information from a wide range of sources which they independently find.
They are able to discuss the client's needs and wants and using their thoughts as a basis of their designs. Produce a detailed brief based on both the needs of the client and a begin a detailed specification justifying key points. They are able to ensure they match their level of work to the marks being awarded by the exam board for the high level they require.

Key learning outcomes:

Making a clear and focused start to the NEA task. Sending students off for the summer with a plan of action ready for a good start in September.
Working from a context. Following the Design process. Iterative Design. Individual task of analysis. Plan research. Looking for a client of their own and questioning.
Plan research to be gathered. Looking at mark scheme before starting to write brief.
AO1

Links to history and culture:

Dependant on exam board contexts set.

Subject links:

Dependant on exam board contexts set.

Careers that can be discussed:

Researcher, Designer, materials specialist, dependant on exam board contexts set.

Key words for their learning:

Key words from the design process, plus- Design context, iterative design, primary and secondary data.

How will we know they have learnt it?

Students feel they have a focused start to their NEA. Portfolio on the PC has been set up and shows a clear context analysis and a plan of research. They have named and detailed their client. They have a research plan.

UNIT – Core Technical Principles

Prior	Current	Future learning
Students have some knowledge on Energy storage and electronic systems of KS3 scheme of learning.	Recap of prior knowledge. Learning about a range of modern and Samet material through theory-based lessons with physical examples where possible.	Application on exam questions. Use in NEA.

GW- Understand how power is generated from fossil and nuclear fuels. Be able to identify mechanical power and understand how it is stored. Be able to recognise a range of modern and smart materials. Understand the basic principles of electronic systems. Understand the difference between Analogue and digital signals. Understand how material properties can be advanced by combining two or more materials.

BI- And understand how power is generated from renewable energy sources such as: wind, solar, tidal, hydroelectric and biomass. And understand pneumatics and hydraulics as examples of kinetic pumped storage systems. Describe developments made through the invention of new or improved processes involving modern and smart materials. Recognise and understand common electronic input and output components. Understand the performance of an IC. Recognise a range of technical materials and technical textiles.

EW- Be aware of the arguments for and against the selection of fossil fuels, renewable energy and nuclear power. And understand the functional properties of alkaline and re-chargeable batteries. Explain how modern materials can be used to alter functionality. Explain how the functional properties of a range of smart materials can be changed by external stimuli. Understand the use of open and closed loop systems and how diagrams and flow charts analyse and solve given problem. Understand how microcontrollers are programmed as computers. Understand how fibres can be manipulated to create technical textiles.

Key learning outcomes:

How energy is generated and why we need a range of sources. Energy storage. Understanding a range of modern and smart materials. Understand the systems approach to designing. Understand electronic systems processing. Composite materials and Technical Textiles

Links to history and culture:

Development of materials over time.

Subject links:

Science, Math

Careers that can be discussed:

Electrician, Construction, Engineer, materials technologist, designer, Textile designer, Textiles Technologist.

Key words for their learning:

Aramid, Microfibres, Conductive, Microencapsulation, Composite, Micro controller, Thermochromic, Photochromic,

How will we know they have learnt it?

Note in books, engaging in questioning, practice exam style questions.