

Year 10 Overview 2024-25 – GCSE D&T

Date	Wk	Week	Unit(s)	Key Learning Outcomes (Exam Links)
Tues 2-Sep	A	1		3D lettering project A01. Identify, Investigate A02. Design and make prototypes. A03 Analyse and evaluate. Skills based lettering project. Mini version of NEA to enable pupils to familiarise themselves with the marking criterion, focus on quality iterative design and recording of it. Formal peer and self-assessment Theory covering point from spec :3.1.1 3.2.1, 3.2.5, 3.2.9, 3.3.5.
9-Sep	B	2	New and emerging technologies: Industry and enterprise	
16-Sep*	A	3		
23-Sep	B	4	New and emerging technologies: Sustainability and the environment	
30-Sept	A	5		
7-Oct	B	6	New and emerging technologies: People, culture and society	
14-Oct	A	7		
21-Oct	B	8	New and emerging technologies: Production techniques and systems	
Half Term				
4-Nov	A	9		Theory covering points from the spec: 3.1.6. 3.1.6.2. A01. Identify, Investigate A02. Design and make prototypes. A03 Analyse, test and evaluate.
11-Nov	B	10	New and emerging technologies: Informing design decisions, recap sheet	
18-Nov	A	11		
25-Nov	B	12	Materials and their working properties: Papers and boards	
2-Dec	A	13		
9-Dec	B	14	Materials and their working properties: Natural and manufactured timbers	
16-Dec	A	15		
Christmas Holiday				
6-Jan	B	16	Materials and their working properties: Metals and alloys	Complete Materials and their working properties. A02. Design and make prototypes.
13-Jan	A	17		
20-Jan	B	18	Materials and their working properties: Polymers	
27-Jan	A	19		
3-Feb	B	20	Materials and their working properties: Textiles	
10-Feb	A	21		
Half Term				
25-Feb	B	22	Materials specialism: Students own choice. A – Papers and boards, B – Timber based, D – Polymers, E – Textile based.	Theory unit now linked to their material area. Choice of specialist unit to develop their skills and techniques in their chosen material area(s) also covering 3.3.7 3.3.8 3.3.9 3.3.310 3.3.11 from the spec. To build an in depth knowledge of how to work the materials and how they are commercially processed and used.
3-Mar	A	23		
10-Mar	B	24	Materials specialism: Students own choice.	
17-Mar	A	25		
24-Mar	B	26	Materials specialism: Students own choice.	
31-Mar	A	ST1		
Spring Holiday				
22-Apr	B	ST1	Exam	Designing principles when starting their own NEA task. Linked to A01. Theory: 3.3.5 Communication of design ideas 3.3.3 The work of others 3.3.4 Design strategies 3.1.4 Systems approach to designing
28-Apr	A	ST1		
5-May*	B	30	Materials specialism: Students own choice. a) Sources, properties and origins	
12-May	A	31		
19-May	B	32	Materials specialism: Students own choice. b) Working with	
Half Term				
2-Jun	A	33		NEA task Exam based on example full paper with additional subject specific questions for their material. Set up and development of their own answer to the examination contextual challenge. Research time. Set up of portfolio.
9-Jun	B	34	Materials specialism: Students own choice. c) Commercial manufacturing, surface treatments and finishes and quality control's	
16-Jun	A	35		
23-Jun	B	36	Designing principals: Investigation, primary and secondary data	
30-Jun	A	37		
7-Jul	B	38	Designing principals: Investigation, primary and secondary data	
14-Jul	A	39		

UNIT – 3D lettering project (see lesson by lesson power point and booklet)

Prior	Current	Future learning
Year 7 Followed the design process in a very linear fashion at KS3. Have varying levels of making skills in a range of materials.	To work individually 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.	Used throughout course to refer back to the process and how marks are awarded. 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 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 be 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 for 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 learning outcomes:

Following the Design process. Iterative Design. Individual task of analysis. Plan research. Looking for a target market and questioning. Looking at research gathered. Formally evaluating research. Looking at mark scheme before starting to write brief. Writing about their target market. Writing the brief. AO1 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 min. 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. Mini version of NEA to enable pupils to familiarise themselves with the marking criterion, focus on quality iterative design and recording of it. Theory covering point from spec :3.1.1 3.2.1, 3.2.5, 3.2.9, 3.3.5

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:

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 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)

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 (4 Double lessons)

Prior	Current	Future learning
Very little formal theory lessons done before this point in D&T.	Introduce the idea of separate theory lesson. The setting out of book required, how notes should be taken, sheets glued in, Summary of learning etc. Introduce the pattern of the lessons. How they are grouped, how they relate to the text book and exams. Unit recap sheet.	All theory work links directly to theory knowledge required to the examination. This section will be tested in ST1 in yr 10.

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 obsolescence 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

Key learning outcomes:

Lesson1 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 through the use of 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 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. 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 (may run into lesson 4)
Lesson 4 Understand Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM) including contemporary and potential future use of automation,
Unit 5 Understand how Flexible Manufacturing Systems (FMS), Just In Time (JIT) and Lean Manufacturing contribute to manufacturing efficiencies. 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, active during questions in lessons, worksheets, summary of learning sheets. Performance in ST1 exam.

and explain the benefits. You can also explain the idea of planned obsolescence from the manufactures and consumers point of view.

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

Prior	Current	Future learning
Not formally studied before. Bring in their experience of the world and structures around them to start by evaluating what they know works.	<p>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.</p> <p>Design a bridge. Learn how to use a drawing board. Accurately build bridge frames.</p> <p>Build in all cross members to construct a test prototype.</p> <p>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.</p> <p>Mechanical advantage and how have humans used it to help them solve problems? What is engineering?</p>	<p>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.</p>

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.

Key learning outcomes:

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.

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, pulleys, 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 and 4. They have worked from different design influence and clients and have written simple design briefs and specifications.	<p>This unit focuses on students being able to select the correct drawing techniques to communicate their designs on paper. Plus to gather their own research both primary and secondary about their chosen NEA context.</p> <p>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.</p>	<p>Good selection of correct drawing styles to communicate their designs.</p> <p>Are able to name and explain the work of at least one designer and company/ design house within their NEA and examination questions.</p>

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.

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, summary of learning sheets. Better use of key terms in NEA portfolios. Performance in ST1 exam in yr 11.

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

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 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.

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.

THEORY UNIT – Section 3 – Materials and their working properties (5 double lessons)

Prior	Current	Future learning
Students have used a range of materials but have various levels of the material background.	This unit 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.	Better use of subject specific vocabulary to describe both the physical material properties and the working properties of the materials. Plus knowing more general knowledge about each material area. Required for the written examination and in the NEA..

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.

BI- Plus explain how the raw materials are processed in to 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.

EW- And be able to name the majority of 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.

Key learning outcomes:

- To know the inherent physical properties of materials ie what are they good at.
- Working properties ie how it responds to treatment.
- Know the primary sources of materials for producing papers and boards. 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. World wide production of goods.

Subject links:

Business studies, geography, History, science.

Careers that can be discussed:

Researcher, Designer, materials specialist, Buyer, chemical scientist, fashion designer, interior designer, craftsman, etc

Key words for their learning:

Absorbency, density, fusibility, electrical or thermal conductivity. strength, hardness, toughness, malleability, ductility, elasticity, coniferous, deciduous, thermoforming thermosetting
How will we know they have learnt it?

Notes in books, active during questions in lessons, worksheets, summary of learning sheets. Better use of key terms in practical lessons and portfolios. Performance in ST2 exam.

THEORY UNIT – Section 5 Materials specialism (5 double lessons)

Prior	Current	Future learning
They al will have basic knowledge of their chosen material area. Some understanding of its commercial use.	To work individually to study the material they wish to specialise in, in depth. Over a maximum of 5 lessons, they will research the sources of their chosen material it 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. This will be done via the google classroom and practical example production.	Will be vital to creative use of materials to solve problems in the NEA. To demonstrate their practical ability and to answer material specific questions in the examination.

GW- 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- 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 in order 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- 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 in order to calculate quantities. Be able to name and explain/ use school-based cutting, forming and processing

Key learning outcomes:

Material areas to choose from are:

- Timbers
- Polymers
- Paper and board
- Textiles

Learn about the sources, properties and origins of their chosen material

Learn about how to work with their chosen material

Learn about the commercial manufacturing, surface treatments and finishes

To be done via google classroom as it enables you tube videos to be watched individually.

Students will need to provide their own headphones. Notes to be made in their books and worksheets stuck in their books to aid revision.

Practical skills and tool usage to be completed following laminated sheet, photographed and processes explained on additional google document.

Links to history and culture:

Materials evolution, material invention and processing, continuous development of commercial handling. Tool development. World wide production and trade.

Subject links:

Business studies, geography, history, science.

Careers that can be discussed:

Vast range from tree feller, patten cutter, mould maker, injection mould designer... endless list.

Key words for their learning:

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

How will we know they have learnt it?

Notes in books, active during questions in lessons, worksheets, summary of learning sheets. Practical samples produced, skill level and their processes explained. Better use of key terms in practical lessons and portfolios. Wider understanding of what can be done with the materials at their level and commercially. Performance in ST2 exam, which will have a personally tailored section for their chosen material.

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.

UNIT – START OF NEA TASK

Prior	Current	Future learning
All prior design projects. Materials knowledge and Ed letters booklet as guide.	To look at the context from the examination board for assessment in the summer of 2024 (released in June 2023) To selecting the best context for the individual student. To plan the research, client and brief for further study over the summer.	Setting up the NEA of the autumn term. 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 be 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.