

Deptford Green Design and Technology Curriculum Map.

Faculty Vision

- It is our goal to promote and engender LORIC skills in all our students in order to promote high standards, high achievement and a commitment to being the best that they can be.
- We want our students to be equipped with the skills they need and to be ambitious in their goals.
- We want our students to be not only risk-takers but resourceful and tenacious students who rise to a challenge and can be imaginative and resilient in their approach to new learning.
- We want our students to be interesting as well as interested and to be enthusiastic discoverers of new learning.
- We want our students to be brave and motivated to be the best that they can be and to be able to thrive as individuals and develop their own independence.
- We will promote this vision through the learning culture that we will instil within our students through their experiences within the classroom and beyond.
- We will provide a curriculum that is broad and varied and accessible to all learners and which takes into account the individuality of our students.
- We will achieve this through our dedication to embracing new ideas and ensuring that our curriculum and teaching styles are constantly developed and honed.

Design and Technology Vision

The Design and Technology aims to offer an inspiring, rigorous and practical element to the school curriculum, while allowing students use their creativity and imagination to encompass their learning. Pupils will be encouraged to design and make products that solve real world issues and relevant problems within a variety of contexts, while considering their own and others' needs, wants and values. The curriculum seeks to deliver a high-quality design and technology education, which aims to encourage independence, ownership of work as well as equipment and machinery within the department.

The curriculum aims to provide opportunities for students to develop their capability within the area, while combining their designing and making skills, with knowledge and understanding in order to create quality products.

They will acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art within different aspects of work.

The content of the curriculum is intended to be progressive and is based on consolidating and revisiting content over time to secure progress and secure knowledge and understanding.

The curriculum seeks depth of study rather than breadth to build understanding and to seek meaning; stretching and challenging student's to think and become independent learners.

Pupils will learn how to solve problems and take risks while becoming resourceful, innovative, enterprising and capable citizens.

In addition, through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life, their surroundings and the wider world.

Design and technology delivery

The curriculum aims to deliver a progressive and solid Design and Technology education allowing them to leave school, and to go on and further their knowledge and understanding leading them to making essential contributions to the creativity, culture, wealth and well-being of the nation.

A key intention in our delivery of DT/FT is to provide a safe environment where students feel able to confidently explore and take risks, while working with a range of materials, tools, machinery, techniques and finishes.

Underpinned throughout the curriculum will be The 5 stages of Design Thinking;

Design Thinking is a design methodology that provides a solution-based approach to solving problems, using the iterative design process. It's extremely useful in enabling students to tackle complex problems, some that are even ill-defined or unknown, by understanding the human needs involved, by re-framing the problem in human-centric ways, by creating many ideas in brainstorming sessions, and by adopting a hands-on approach in prototyping and testing.

Understanding these five stages of Design Thinking will empower students to apply the Design Thinking methods in order to solve complex problems that occur around us — in our companies, in our countries, and even on the scale of our planet.

Purpose of study – Design and Technology

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Subject content

Key stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

Key Stage 3

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of domestic and local contexts [for example, the home, health, leisure and culture], and industrial contexts [for example, engineering, manufacturing, construction, food, energy, agriculture (including horticulture) and fashion].

Key Stage 4

The GCSE specifications in design and technology should enable students to understand and apply iterative design processes through which they explore, create and evaluate a range of outcomes.

Students should acquire subject knowledge in design and technology that builds on key stage 3, incorporating knowledge and understanding of different materials and manufacturing processes in order to design and make, with confidence, prototypes in response to issues, needs, problems and opportunities. Students should learn how to take design risks, helping them to become resourceful, innovative and enterprising citizens. They should develop an awareness of practices from the creative, engineering and manufacturing industries. Through the critique of the outcomes of design and technology activity, both historic and present day, students should develop an understanding of its impact on daily life and the wider world and understand that high-quality design and technology is important to the creativity, culture, sustainability, wealth and well-being of the nation and the global community

Programme Aims

The programme will progress through the KS3 year's groups through a variety of creative and practical activities, pupils will be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They will be given opportunity to work in a range of domestic and local contexts (for example, the home, health, leisure and culture), and industrial contexts (for example, engineering, manufacturing, construction, food, energy, agriculture and fashion/media).

Students will complete projects with 4 main underpinning areas. These core areas offer a context through which the essential skills, processes and techniques below are developed giving students the skills, language and strategies necessary to become strong, resilient and independent technologists as they enter KS4 and further if desired. Due to time limitations of the whole curriculum, KS3 students will focus on part/s of the design process rather than working their way through. This will enable them to clearly understand the different stages of the design process and design thinking while producing work of quality.

Design - Includes identifying contexts, user needs, solving design problems, developing specifications that help them design and create innovative, functional and appealing products, In addition they will be taught how to effectively communicate their ideas/thinking through methods such as sketches, plans, 3D and mathematical modelling, oral and digital presentations and computer-based skills.

Make - Selecting from a range of materials, tools, techniques, processes, machinery and manufacture, including computer-aided design. Working from plans to produce a product of quality and use, using knowledge of materials and processes to make their own independent judgements when designing and making.

Evaluate - Involves analysing the work of past and present design professionals, investigating new and emerging technologies and materials, testing, evaluating and refining their own ideas, and understanding how design and technology impacts on people, and the responsibilities of designers and engineers.

Technical knowledge - Understanding and using the properties of materials to make products/judgements; The use of tools, understanding and using more advanced electrical and electronic equipment and systems of manufacture, including using computing to make intelligent products and learning to manipulate programmable components.

DESIGN

- Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups.
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, exploded diagrams, prototypes, pattern pieces and computer-aided design.
- use research and exploration, such as the study of different cultures, social, moral and economic factors to identify help and understand user needs.
- Identify and solve their own design problems and understand how to reformulate problems given to them.
- Work to and develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations.
- Use a variety of approaches (for example, biomimicry and user-centred design), to generate creative ideas and avoid stereotypical and fixated responses.
- Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.

MAKE

- Select from and use a wide range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately.
- Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture.
- Select from and use a wide range of materials, components and ingredients, taking into account their properties.
- To be able to manipulate and combine materials and processes to create individually as well as aesthetically pleasing products.
- Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic features.

EVALUATE

- Analyse the work of past and present professionals and others to develop and broaden their understanding of design/design movements.
- Investigate new and emerging technologies.
- Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups.
- Understand developments in Design and Technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.
- Investigate and analyse a range of existing products.
- Evaluate their ideas and products against a design criteria and consider the views of others to improve their work.
- Understand how key events and individuals in Design and Technology have helped shape the world.
- The importance of Design and Technology as a means of communication, health and personal growth (LORICS).
- The value of Design and Technology in a society of different cultures and professions.
- Investigating new and emerging technologies, with comparison to older methods/technologies.
- How Design and Technology helps us to understand and negotiate our emotions and place within our evolving technological world.
- Range of skills in different materials areas to help them solve challenges in the real world.
- To give young people an awareness of social, moral, global and environmental impact.

TECHNICAL

- Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.

- Understand how more advanced mechanical systems used in their products enable changes in movement and force.
- Understand how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs]
- Apply computing and use electronics to embed intelligence in products that respond to inputs [for example, sensors], and control outputs [for example, actuators], using Programmable components [for example, microcontrollers].
- As part of their work with food, students should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in students will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

What, why how?

What:

Build on knowledge and skills from KS2 – We recognise, however, that with a large number of feeder schools students will bring a wide variety of experiences at KS3 , therefore the aim is to focus more on building up a bank skills and knowledge from the start of KS3, rather than relying on prior knowledge to build on. However, the department will actively encourage students to draw on past experiences from KS2.

- Develop the creative, technical and practical expertise needed to perform subject specific and everyday tasks confidently as well as being able to participate successfully in an increasingly technological world.
- Build and apply a repertoire of skills knowledge, understanding in order to design and make high-quality prototypes and products for themselves and a wide range of users.
- Critique, evaluate and test their ideas, products and the work of others.
- Understand and apply the principles of nutrition and learn how to cook healthy, appealing and exciting dishes.
- Develop, enhance and nurture creativity within the different material areas.
- Develop sound understanding of the design process, the iterative design process and sustainability issues.
- Use subject specific language to scaffold and enhance the quality of written outcomes and improve spoken and written oracy within the subject.
- Develop a contextual and conceptual understanding of materials and industrial practices - placing them in the real world.
- Ensure consistency through agreed assessment criteria and moderation of assignments.

Why:

- All students need to access the curriculum to prepare them to make progress from their starting points.
- Students to learn technological skills and practices to allow them to confidently complete KS3 and go on to competently complete KS4 (if desired).
- Understand the vast range of processes, tools and machinery that can help them to solve given problems/contexts as well as everyday problems, current or future related.
- Allowing students to effectively communicate through the design process, helping them to think more analytically.
- Help students to understand and negotiate their emotions and place within our evolving technological world.
- Range of skills in different materials areas to help them solve challenges independently and innovatively in the real world.
- To give young people an awareness of social, moral, global and environmental impact of technology.
- Allowing students to become well rounded, informed and confident technologists.
- Foster a love and/or appreciation of Design Technology and the impact it has on everyday life.
- To become responsible citizens and well-rounded individuals who care about their communities and environments.
- Underpin careers which students aspire to.

How:

- Hands on approach to designing and making, making full use of department resources.
- Pedagogy and the latest thinking/teaching using DATA as a resource of reference for good practice in the department.
- Critical thinking and analysis of existing materials, problems, users, processes and techniques clearly underpinned in S.O.W'S.
- Develop Cultural capital through exposure to different industrial/technological ideas, processes, trips, competitions and links with alumni students/experts in industry.
- Allow for teacher autonomy to adapt lessons to the needs of their particular students, particularly those with SEN and EAL, but model expectations through sharing good practice and monitoring/evaluation.
- Scaffolding and progression of skills and knowledge between years which will be built upon year by year to ensure sound understanding by KS4/5
- Use of subject specific language to reinforce language used in subject area, increasing year by year throughout KS3/4
- Use student voice to understand how students learn while using findings to address teaching and learning needs highlighted.

Year 7						
Term	Autumn 1	Autumn2	Spring1	Spring2	Summer 1	Summer2
Text/Topic	Choctastic – Design a chocolate bar project <i>RESISTANT MATERIALS</i>	Licence to cook <i>FOOD SCIENCE AND NUTRITION</i>	Food for comfort -Fast food cushions <i>TEXTILES</i>	Eggcellent – Easter egg/boiled egg holder <i>RESISTANT MATERIALS</i>	Creative keyrings - <i>CAD/CAM 2D DESIGN PROJECT</i>	Pop up cards/electronic cards project <i>GRAPHICS/ELECTRONICS</i>
Concept/Skill:	<p>Introduction to Health and safety in DT. The design process – 5 stages of design thinking. Understanding the properties and functions of plastics.</p> <p>-Basic use of hand tools</p>	<p>Introduction to the test kitchen. Selection of dishes over the term. Quick healthy dishes in an hour.</p> <p>Creative Pizza</p> <p>Cookies</p> <p>Fruit and choc kebabs/ smoothies</p> <p>Pasta pots</p>	<p>Introduction to fabrics and how they are formed. Introduction to sewing machine and applique. Understanding the properties and functions of different materials/sewing machine. Understanding the properties and function of fabrics in general and used in project.</p>	<p>Introduction to CAD/CAM to aid design and making in the DT workshop. Understanding what CAD/CAM is and the importance in design and manufacture. Gain further understanding of materials and tools, machinery and techniques.</p>	<p>Further learning of CAD/CAM using different pieces of CAM equipment to produce a high quality keyring. Focusing on different methods of production in industry, one off/ batch/ mass.</p> <p>-Laser cutting</p>	<p>Introduction to mechanisms and paper engineering. How paper is made. Introduction to basic electronics Understanding the properties and functions of paper/card/board and simple electronic components.</p> <p>-Paper engineering</p>

	<ul style="list-style-type: none"> -Vacuum forming -Learn how to draw in isometric projection -Learn how to communicate ideas effectively. 	<ul style="list-style-type: none"> -Use of basic kitchen equipment. -Measuring -using the hob -cutting techniques. - how to evaluate food using specified criteria. 	<ul style="list-style-type: none"> -Basic use of sewing machine and affixing different fabrics together. 	<ul style="list-style-type: none"> -Line bending. plastic manipulation -Pillar drill (hole saw) - 2D design program /Laser cutting - Learn how to draw using ratio/scale. 	<ul style="list-style-type: none"> -3D printing - Heat transfer 	<ul style="list-style-type: none"> - making a simple electronic circuit.
Hinge assessments	Design ideas – Isometric projection with rich annotations.	Graded Practical outcomes of dish/ health and safety and evaluation.	Graded practical outcome and evaluation of product.	Technical and scale drawings.	CAD/CAM test	Graded practical outcome and evaluation of product.
Summative assessments			Mid-year test covering knowledge and skills.			End of year test covering knowledge and skills.
Link to GCSE	Manipulating/forming plastics. User needs and wants. Drawing skills. Plastics properties and functions English -Annotating	Science :Nutrition Maths: Measurment	Characteristics and common uses of fabrics. Manufacturing of fabrics Materials and their properties. Art textiles- Working with sewing machine and fabrics.	Manipulating materials (plastics) CAD/CAM Materials and their properties Science- Polymers	Methods of production CAD/CAM Materials and their properties. Art textiles – Production methods/ aesthetic finishing techniques	Electronic components. Inputs and outputs Paper engineering. Paper/card properties and functions. Science- Electronics/circuits
Cultural Captial/Links to enrichment	KS3 DT club yr 7	KS3 DT club yr 7/8	Goldsmiths Textiles students talk.	Chocolate museum - London		
Linked reading	Book: Exploring DT KS3. Vacuum forming. Website: Technology student.com http://www.technologystudent.com/equip1/vacform1.htm		Book: Exploring DT KS3. Fabrics and textiles.	Book: Exploring DT KS3. Line bending. Technologystudent.com http://www.technologystudent.com/joints/desk17.htm	Book: Exploring DT KS3. CAD/CAM Methods of production. Technologystudent.com http://www.technologystudent.com/joints/prdst1.htm	Book: Exploring DT KS3. Electronic circuits/ input and outputs. Paper Engineering for pop up books – Mark Hiner. Technologystudent.com http://www.technologystudent.com/despro2/crdpap1.htm

Oracy	Understand the meaning, how to pronounce and spell the 5 stages within design thinking. (spelling tests) Empathise-Define-Ideate-prototype- Evaluate Vacuum forming. Learn how to communicate design ideas written and verbally Student showcase Word of the week. Spelling test throughout. Popcorn reading.	Understanding key sensory terms used if food tech to describe taste, texture colour and shape. Be able to explain functions of ingredients verbally and written. Word of the week – food based. Spelling test throughout. Popcorn reading.	Understanding key terminology of textiles, E.G weft/ warp, seam allowance. Student showcase. Word of the week – Textiles based. Spelling tests throughout. Popcorn reading.	Understanding of key terminology EG CAD/CAM Manipulation polymers. Focussing on evaluation through the design and make process, terminology expected to be shown throughout written/design work. Word of the week - CAD/CAM Resistant material based. Spelling test throughout. Popcorn reading	Understanding of key terminology E.G laser, production, ONE OFF BATCH MASS. Focussing on evaluation through the design and make process, terminology expected to be shown throughout written/design work. Word of the week: CAD/CAM Resistant material based. Spelling test throughout.	Understanding key terminology of electronics E.G LED, battery, resistor. Transistor, capacitor. Student showcase Word of the week – Electronic/paper based. Spelling tests throughout. Popcorn reading.
Numeracy	Learning how to measure and mark out in MM's, Isometric projection, Understanding area	Learning to weigh out dry and wet ingredients accurately, Timings, Understanding volume.	Working to measurements.	Working and using measurements to develop and output CAD/CAM designs. Scale and ratio drawing.	Tessellation and working to accurate measurements. Working out material cost.	Accurate measurement and folding.
Careers	Product designer/ chocolatier	Baker / Personal chef	Fashion/ soft interiors designer.	CAD/CAM engineer Product designer	CAD/CAM engineer Manufacturing team	Electrician Graphic designer
Other resources	BBC BITESIZE/SCHOOL LIBRARY	BBC BITESIZE/SCHOOL LIBRARY	BBC BITESIZE/SCHOOL LIBRARY	BBC BITESIZE/SCHOOL LIBRARY	BBC BITESIZE/SCHOOL LIBRARY	BBC BITESIZE/SCHOOL LIBRARY

Year 8						
Term	Autumn 1	Autumn2	Spring1	Spring2	Summer 1	Summer2
Text/Topic	Design a burger bar/café <i>GRAPHICS</i>	Healthy fast foods - <i>FOOD TECHNOLOGY</i>	My face in lights- Electronic face cushion <i>ELECTRONICS/TEXTILES</i>	Young literacy <i>GRAPHICS</i>	It's a wrap - Head phone wrap <i>RESISTANT MATERIALS</i>	Create and make - Collaborative Creative Cook Competition 2020.

Concept/Skill:	<p>Design and make a burger bar/café. Learning how to use Adobe Illustrator to manipulate and create text/images. Using Sketch Up to produce a 3D CAD version of their shop design. Making of staff uniform and business card. Furthering knowledge of CAD/CAM along with paper, card and boards.</p> <ul style="list-style-type: none"> - Developing communicating ideas and analysis of existing products. Developing knowledge and understanding of materials area. - Graphics skills, 1 /2-point perspective drawing. -Learning how to draw using CAD. - manipulating and creating fonts/ creating images using CAD. - Heat transfer. 	<p>Design and make a dish that would be sold in their burger bar or café. Learning how to cook a set of basic healthy fast food dishes, which can then be manipulated to their own preference. Packaging for food product to also be made.</p> <ul style="list-style-type: none"> -Developing knowledge and understanding of ingredients and their functions. - Developing analysing and evaluating skills looking at existing products, their own and work of others. -Using sensory charts and key terminology. - Developing knowledge and understanding on the use of a range of equipment in the test kitchen. 	<p>Design and make a cushion with electronic LEDS. Learning how to apply electronics to a textile product. Learning how to use the heat transfer process or CAD/CAM to encapture their face on cushion.</p> <ul style="list-style-type: none"> -Developing CAD/CAM, electronic skills and sewing skills. -Analysing existing products, their own and work of others. -following schematic diagrams and templates independently. - developing feedback skills. 	<p>Design and make a 5 paged pop-up book for a young user. Building on previous pop up knowledge while learning more sophisticated pop ups and an introduction to paper mechanisms. Gain further understanding on paper/card/boards.</p> <ul style="list-style-type: none"> - Developing design development skills. - Paper engineering - mechanisms – movement and motion. -cutting and finishing techniques. -One off production - User interaction. - Developing understanding for materials area. 	<p>Design and make a headphone wrap Further learning of CAD/CAM using equipment to produce a high quality headphone wrap device. Focusing on different methods of production in industry, one off/ batch/ mass.</p> <ul style="list-style-type: none"> -Developing CAD/CAM skills. -Developing knowledge and understanding of materials area. -following instructions/diagrams independently. - Developing testing and evaluation skills. 	<p>Design and make a dish. In partners, design and make a dish using a selection of simple base recipes. Dishes will be designed and developed and trialed twice in the test kitchen.</p> <ul style="list-style-type: none"> -Developing knowledge and understanding of ingredients and their functions. -Developing skills for analysing and evaluating existing products, their own and work of others using sensory charts and key terminology. -Learning how to follow instructions independently. -Working with others
Hinge assessments	1 point perspective and CAD design idea.	Graded practical outcome/ health and safety and evaluation.	Design idea with annotations. Graded practical outcome.	Pop up test Covering yr 7 and 8 knowledge.	Short polymers test and practical outcome.	Design and development Practical outcome.
Summative			Mid-year test covering knowledge and skills			End of year test covering knowledge and skills 7/8
Link to GCSE/subjects	CAD/CAM, perspective drawings, modelling 3D CAD. Prototyping.	Nutrition Science: Nutrition	Characteristics and uses of fabrics. Manufacturing of fabrics, Materials and their properties. Electronic systems. Inputs and outputs Art textiles: Fabric manipulation	Mechanisms, movement and motion, mechanical devices Paper/card/boards, production methods. Art: Graphics	Methods of production CAD/CAM, Materials and their properties Manipulating materials (plastics)CAD/CAM Science - Polymers	Nutrition Science: Nutrition

[illegible]

Year 9

Term	Autumn 1	Autumn2	Spring1	Spring2	Summer 1	Summer2
Text/Topic	Pewter casted jewellery. <i>RESISTANT MATERIALS</i>	Speakers project <i>RESISTANT/GRAPHICS</i>	Cardboard furniture <i>PRODUCT DESIGN</i>	Children cam toy <i>RESISTANT MATERIALS</i>	Wonderful world of food <i>FOOD TECHNOLOGY</i>	Portfolio of practical skills.
Concept/Skill:	<p>Design and make a piece of Memphis inspired jewellery for a user. Making jewellery while learning about metals and casting processes. Using CAD/CAM to develop and manufacture mould to cast in pewter.</p> <ul style="list-style-type: none"> - Widening communicating and analysis skills. - Developing knowledge and understanding of materials area and metal forming techniques. - Graphics skills -Technical drawing. -Developing CAD drawing skills. -Using the hearth assisted. 	<p>Design and make a Pop Art inspired acoustic speaker. Making a wooden speaker using hand tools is the workshop, while using CAD/CAM to help enhance aesthetics.</p> <ul style="list-style-type: none"> -Widening evaluation and iteration skills. -Widening making skills and furthering knowledge of a range of hand tools. - Developing knowledge and understanding of material area and finishing techniques. -Developing and widening CAD/CAM skills and knowledge. - developing graphic skills. 	<p>Design and make cardboard furniture which encourages sustainable design. Collaborative work on designing and making a flat packed chair and table (as part of a team) that could be used by a Yr. 9 student at DG</p> <ul style="list-style-type: none"> -Collaborative working -Developing understanding of materials area and forming techniques. -Developing and widening CAD/CAM skills and knowledge. -Developing analysing and evaluating existing products, their own and work of others using 	<p>Design and make A CAM toy for a young user. Further learning of mechanisms, movement and motion. Making a cam toy that uses different CAMS to produce different movements and/or motions.</p> <ul style="list-style-type: none"> -Widening skills and furthering knowledge of a range of hand tools. - Developing design communication techniques/skills. - Developing knowledge and understanding of material area and finishing techniques. -Developing CAD/CAM skills. 	<p>Make a selection of multi-cultural food while gaining understanding of nutritional needs, different user groups and cultural factors.</p> <ul style="list-style-type: none"> -Collaborative working -Developing and widening knowledge and understanding of ingredients and their functions. -Developing analysing and evaluating existing products, their own and work of others using sensory charts and key terminology. -Learning how to follow instructions independently. -Working with others -Developing knowledge and understanding on the use of a range of equipment in the test kitchen. 	<p>A selection of short focussed practical tasks that will focus on designing and making areas in preparation for options/GCSE</p> <ul style="list-style-type: none"> -Widening communicating and analysis skills (GCSE format) -Developing design communication techniques/skills. -Widening skills and furthering knowledge of a range of hand tools. - Widening knowledge and understanding of different material areas and finishing techniques. -Widening skills for analysing and evaluating existing products, their own and work of others - Graphics skills - CAD drawing skills.

Hinge assessments	Design ideas and annotations. Materials/tool/equipment short test.	Analysis and evaluation of Pop art design movement and product.	Team/individual submission of project.	Graded practical outcome.	Graded practical outcome.	Portfolio and products graded outcome.
Summative			Mid-year test covering knowledge and skills from 8 and 9			End of year test covering knowledge and skills 7,8,9.
Link to GCSE/Subjects	CAD/CAM, Design communication, Metals and their properties, Tools, processes techniques and finishes, metal forming. Technical drawing skills. Design movements. Science: Ferrous and Non-ferrous metals. Geography – Mining.	CAD/CAM, Analysing and evaluating products, Tools processes techniques and finishes. Woods and their properties, Technical drawing skills. Design movements. Factors influencing material selection.	Working in collaboration, Wider influences on design 6R's-fairtrade-social and ethical awareness. Structural integrity, Paper, cards and boards, properties and uses, Technical drawing skills. Citizenship – Environmental issues	CAD/CAM, Tool processes techniques and finishes. Mechanisms, movement and motion Mechanical devices, Motion and levers. Manufactured boards and their properties. Art: Graphics	Nutrition Science: Nutrition	CAD/CAM, Tool processes techniques and finishes, Materials and their properties, Usability, New and emerging technologies, Technical drawing skills.
Cultural capital/Links to enrichment	Goldsmith Talk – Local goldsmith asked to come in and give a short talk about profession.		Best designs to be submitted to Design Museum, Design Ventura competition.	Showcase of toys to local primary school – sit and play evaluation session or Local nursery/school to visit DG. DT club Yr. 9		
Linked reading	Book: Exploring DT KS3. Metals and their properties. Forming metals. Technology student.com http://www.technologystudent.com/designpro/metals1.htm	Book: Exploring DT KS3. Woods and their properties. Forming materials. Technology student.com http://www.technologystudent.com/designpro/natwoods1.htm	Book: Exploring DT KS3. Paper card and boards. Forming materials. Technology student.com http://www.technologystudent.com/elec1/elecex.htm	Book: Exploring DT KS3. Manufactured boards. Mechanical devices, motions and levers. Technology student.com http://www.technologystudent.com/despro_flash/materials_woods1.html		Book: Exploring DT KS3. Various topics Technology student.com
Oracy	Further understanding of key terminology of materials area. Further development of communication of design ideas written and verbally. Student showcase. Word of the week. Spelling test throughout. DT dictionary. Popcorn reading.	Further understanding of key terminology of materials area. Further development of analysis and evaluation written and verbally. Student showcase. Word of the week. Spelling test throughout. DT dictionary. Popcorn reading.	Further understanding of key terminology of paper engineering. Focussing on collaborative and developmental work through the design and make process. Key terminology expected to be shown throughout written/design work Word of the week Spelling test throughout. DT dictionary. Popcorn reading.	Further understanding of key terminology of materials area. Further development of communication of design ideas written and verbally. Student showcase. Word of the week. Spelling test throughout. DT dictionary. Popcorn reading.	Further understanding of key sensory terms and cooking processes in FT. Focussing on collaborative work through the making process. Key terminology expected to be shown throughout written work. Word of the week Spelling test throughout. DT dictionary. Popcorn reading.	Further understanding of key terminology of different material areas. Further development of design communication, development, analysis, evaluation written and verbally. Student showcase. Word of the week. Spelling test throughout. DT dictionary. Popcorn reading.

[illegible]

Year 10

Term	Autumn 1	Autumn2	Spring1	Spring 2	Summer 1	Summer2
Text/Topic	CAD/CAM clocks	Trinket box	Focused Practical Tasks and revision folder.	PRACTICE NEA OCR PAST CONTEXT		FINAL GCSE NEA
Concept/Skill:	<p>Design and make an analogue clock inspired by a design movement and material of choice.</p> <p>Working through a selection of NEA tasks and to strengthen final portfolio and practical skills needed to complete NEA successfully.</p> <ul style="list-style-type: none"> -Widening communicating and analysis skills (GCSE format) - Widening practical skills and furthering knowledge of a range of hand tools. - Widening knowledge and understanding of different material areas and finishing techniques. -Developing and widening CAD/CAM skills and knowledge. -Widening skills for analysing and evaluating existing. products, their own and work of others. -Wider issues that affect design. - Graphics skills. - CAD drawing skills. 	<p>Design and make a trinket box inspired by a user.</p> <p>Working through a selection of NEA tasks and to strengthen final portfolio and practical skills needed to complete NEA successfully.</p> <ul style="list-style-type: none"> -Widening communicating and analysis skills (GCSE format) - Widening practical skills and furthering knowledge of a range of hand tools. - Widening knowledge of different material areas and finishing techniques. -Developing and widening CAD/CAM skills and knowledge. -Widening knowledge of New and emerging technologies - Usability. - Graphics skills. - CAD drawing skills. 	<p>A selection of short focussed practical tasks</p> <p>Focus on designing and making areas/ Materials/ Maths activities and practice GCSE questions in preparation for final GCSE. To be worked on throughout the rest of year 10 and 11.</p> <ul style="list-style-type: none"> -Widening communicating and analysis skills (GCSE format) - Widening practical skills and furthering knowledge of a range of hand tools. - Widening knowledge and understanding of different material areas and finishing techniques. -Developing and widening CAD/CAM skills and knowledge. -Widening skills for analysing and evaluating existing. products, their own and work of others -Wider issues that affect design. - Graphics skills - CAD drawing skills. 	<p>Practice Run through NEA using past GCSE context</p> <ul style="list-style-type: none"> -Widening communicating and analysis skills (GCSE format) - Widening practical skills and furthering knowledge of a range of hand tools. - Widening knowledge and understanding of different material areas and finishing techniques. -Developing and widening CAD/CAM skills and knowledge. -Widening skills for analysing and evaluating existing. products, their own and work of others. - wider issues that affect design. - Graphics skills - CAD drawing skills. - Factors that influence material selection. 		<p>Final GCSE NEA</p> <p>Contexts released june1st</p> <p>Selection of context.</p> <p>Structuring and start of final NEA portfolio.</p> <p>Below is a list of tasks that need to be completed before summer holidays. Assessed and given back to improve/complete over the holiday.</p> <ul style="list-style-type: none"> -Investigation into contexts. -Investigation into user needs and wants. -Design context and brief. -Product analysis. (Short and long analysis) -User requirements/ feedback Interviews/target group feedback/questionnaires -User requirements. -Wider issues. -Design ideas. Sketches/CAD/cardboard. -Collaborative design ideas.

Hinge assessments	Design ideas and annotations. Materials/tool/equipment short test.	Technical drawing and development and evaluation.	Class mock PPE	Graded practical outcomes and portfolio.	NEA Portfolio grade
Summative			MOCK PPE		End of year test/MOCK PPE
Link to GCSE/Subjects	CAD/CAM, Design and development, Communication, Materials and their properties, forming, Tools, processes techniques and finishes, Technical drawing skills. Design movements, Wider issues, analysing and evaluating existing products, work of others.	CAD/CAM, Analysing and evaluating products, Tools processes techniques and finishes. Woods and their properties, Technical drawing skills Factors influencing material selection.	Covering aspects of core practical and theory areas of DT that may help them in final NEA and exam. Material of specialism selected: Paper card and board. DT revision bible to be started which will include core materials and materials of choice revision (paper card and board), along with DT maths and a range of drawing techniques that could come up in final exam.	Practice run following OCR NEA Format Covering most areas of NEA, while also focusing specifically on areas that students have found challenging in the past when completing NEA. Students will also be given time within lessons to revise the core areas of DT and also to start working on specific materials area: Paper card and board. Challenging areas in past cohorts: Product analysis Stakeholder requirements Questionnaire, results and analysis Wider issues Technical specification Iterations (development)	Start of final OCR NEA – See concept/skill for content to be covered before the end of summer 2. Students will also continue work on revision and producing a DT revision bible for final exam.
Cultural capital/Links to enrichment	Visit to the V and A museum. ¹				Trip : In relation to context chosen.

¹ Current Year 10's have been enrolled on the Stephen Lawrence Young Architects Programme.

Linked reading	<p>Book: OCR GCSE 9-1 Design and Technology</p> <p>OCR GCSE 9-1 Design and Technology All in one revision and practice.</p> <p>Technology student.com</p> <p>http://www.technologystudent.com/despro_flsh/NEW_GCSE3.html</p>	<p>Book: OCR GCSE 9-1 Design and Technology</p> <p>OCR GCSE 9-1 Design and Technology All in one revision and practice.</p> <p>Technology student.com</p> <p>http://www.technologystudent.com/despro_flsh/new_revision1.html</p>	<p>Book: OCR GCSE 9-1 Design and Technology</p> <p>OCR GCSE 9-1 Design and Technology All in one revision and practice.</p> <p>Technology student.com</p> <p>http://www.technologystudent.com/despro_flsh/NEW_GCSE3.html</p>	<p>Book: OCR GCSE 9-1 Design and Technology</p> <p>OCR GCSE 9-1 Design and Technology All in one revision and practice.</p> <p>Technology student.com</p> <p>http://www.technologystudent.com/despro_flsh/NEW_GCSE3.html</p>	<p>Book: OCR GCSE 9-1 Design and Technology</p> <p>OCR GCSE 9-1 Design and Technology All in one revision and practice.</p> <p>Technology student.com</p> <p>http://www.technologystudent.com/despro_flsh/NEW_GCSE3.html</p>
Oracy	<p>Further understanding of key terminology of materials area.</p> <p>Analysis and evaluation, Design development, Communication of design ideas, all written and verbal. Student showcase. Spelling test throughout. DT dictionary. Popcorn reading.</p>	<p>Further understanding of key terminology of materials area.</p> <p>Analysis and evaluation, Design development, Communication of design ideas, all written and verbal. Student showcase. Spelling test throughout. DT dictionary. Popcorn reading.</p>	<p>Further understanding of key terminology of materials, processes, techniques and finishes.</p> <p>DT portfolio. DT revision Bible. Student showcase. Spelling testing throughout. Popcorn reading. Peer assessment – OCR criteria</p>	<p>Communication of design ideas, analysis, evaluation written and verbally. Student showcase. Word of the week. Spelling test throughout. DT revision bible. Popcorn reading. Peer assessment – OCR criteria</p>	<p>Communication of design tasks, written and verbally. Student showcase. Word of the week. Spelling test throughout. DT revision bible. Popcorn reading. Peer assessment – OCR criteria</p>
Numeracy	Working to measurements, area, scale and ratio, tolerances, material costs.	Working to measurements, area, scale and ratio, tolerances, material costs.	Working to measurements, area, scale and ratio, tolerances, material costs.	Working to measurements, area, scale and ratio, tolerances, material costs.	Working to measurements, area, scale and ratio, tolerances, data.
Careers	Product designer	Research and development	Graphic Designer	Engineer	Architect
Other resources	BBC BITESIZE/GCSEPOD/SCHOOL LIBRARY	BBC BITESIZE/GCSEPOD/SCHOOL LIBRARY	BBC BITESIZE/GCSEPOD/SCHOOL LIBRARY	BBC BITESIZE/ GCSE POD/SCHOOL LIBRARY	
					Trend analyst

Year 11

Term	Autumn 1	Autumn2	Spring1	Spring2	Summer 1	Summer2
Text/Topic	OCR FINAL NEA/REVISION	OCR FINAL NEA/REVISION	OCR FINAL NEA (FEB END)/ REVISION	REVISION	REVISION	FINAL PPE
Concept/Skill:	<p>Working on final portfolio and viable final prototype.</p> <p>Areas to be covered:</p> <p>Evaluation of ideas</p> <p>Iterations (design development)</p> <p>Final design idea (CAD)</p> <p>Manufacturing plans</p> <p>Making of prototype</p> <p>PPE revision: DESIGN CONSIDERATION</p> <ul style="list-style-type: none"> -Exploring context -Factors affecting design process. -Exploring existing designs -Usability -New and emerging - Technologies -Sources of energy -Wider influences on designing and making -Viability of design solutions <p>Specific materials area: Paper/card/board. DT maths.</p>	<p>Working on final portfolio and viable final prototype.</p> <p>Area's to be covered:</p> <p>Making of final prototype</p> <p>Record of making</p> <p>Revision:</p> <p>COMMUNICATING IDEAS/MATERIAL CONSIDERATIONS</p> <ul style="list-style-type: none"> -Graphical techniques -Approaches to designing -Properties of materials -Factors influencing materials selection -Woods/M Boards -Metals -Polymers -Textiles -New developments in materials - Standard components <p>Specific materials area: Paper/card/board. DT maths.</p>	<p>Working on final portfolio and viable final prototype.</p> <p>Areas to be covered:</p> <p>Testing</p> <p>Evaluating.</p> <p>Revision:</p> <p>TECHNICAL UNDERSTANDING/ MANUFACTURING PROCESSES AND TECHNIQUES</p> <ul style="list-style-type: none"> -Finishing materials -Structural integrity -Motion and levers -Mechanical devices -Electronic systems - Programmable components - Modelling processes -Wastage -Additive manufacturing processes -Deforming and reforming -ensuring accuracy Digital design tools -CAD/CAM -Scales of manufacture -Large scale processes <p>Specific materials area: Paper/card/board. DT maths.</p>	<p>Revision:</p> <p>Areas to be covered:</p> <p>Final recap over DT knowledge and understanding for final PPE.</p>	<p>Revision:</p> <p>Areas to be covered:</p> <p>Final recap over DT knowledge and understanding for final PPE.</p>	

Hinge assessments	NEA ASSESSMENT Portfolio	NEA ASSESSMENT Portfolio	NEA ASSESSMENT Portfolio	CLASS MOCK PPE		
Summative		MOCK PPE		MOCK PPE	FINAL EXAM.	
Cultural capital/Links to enrichment	SLE to visit throughout watching presentations , giving advice and feedback to class and teacher.		Exhibition of work – To be displayed in the Design and Technology department. Students and parents invited for a viewing evening.	Alumni student Tayyibah khan/ Monique O to come and give a short talk about her progress in A level DT.		
Linked reading	<p>Book: OCR GCSE 9-1 Design and Technology</p> <p>OCR GCSE 9-1 Design and Technology All in one revision and practice.</p> <p>Technology student.com http://www.technologystudent.com/despro_fish/NEW_GCSE3.html</p>	<p>Book: OCR GCSE 9-1 Design and Technology</p> <p>OCR GCSE 9-1 Design and Technology All in one revision and practice.</p> <p>Technology student.com http://www.technologystudent.com/despro_fish/NEW_GCSE3.html</p>	<p>Book: OCR GCSE 9-1 Design and Technology</p> <p>OCR GCSE 9-1 Design and Technology All in one revision and practice.</p> <p>Technology student.com http://www.technologystudent.com/despro_fish/NEW_GCSE3.html</p>	<p>Book: OCR GCSE 9-1 Design and Technology</p> <p>OCR GCSE 9-1 Design and Technology All in one revision and practice.</p> <p>Technology student.com http://www.technologystudent.com/despro_fish/NEW_GCSE3.html</p>	<p>Book: OCR GCSE 9-1 Design and Technology</p> <p>OCR GCSE 9-1 Design and Technology All in one revision and practice.</p> <p>Technology student.com http://www.technologystudent.com/despro_fish/NEW_GCSE3.html</p>	
Oracy	Throughout portfolio Student showcase Popcorn reading DT revision bible	Throughout portfolio Student showcase Popcorn reading DT revision bible	Throughout portfolio Student showcase Popcorn reading DT revision bible	Throughout portfolio Student showcase Popcorn reading DT revision bible		
Numeracy	Working to measurements/scale/ratio, Area ,tolerances, working out cost of product.	Working to measurements/scale/ratio, Area, tolerances, working out cost of product.				
Careers	² https://successatschool.org/advisedetails/335/Why-Study-Design-and-Technology%3F	https://www.cisg.org.uk/page/?title=Design+%26amp+%3B+Technology&pid=44	https://www.south-thames.ac.uk/courses/games-design-and-development.html	https://www.south-thames.ac.uk/courses/art,-fashion/	https://www.summer-schools.info/academic/design-technology/	
Other resources	BBC BITESIZE/GCSE POD/ SCHOOL LIBRARY	BBC BITESIZE/GCSE POD/ SCHOOL LIBRARY	BBC BITESIZE/GCSE POD/ SCHOOL LIBRARY	BBC BITESIZE/GCSE POD/ SCHOOL LIBRARY	BBC BITESIZE/GCSE POD/ SCHOOL LIBRARY	BBC BITESIZE/GCSE POD/ SCHOOL LIBRARY

² Students to gain a selection of information of different DT a level/vocational pathways.

ASSESSMENT INFORMATION:

All hinge assessments (including practical's) will have a of 60 marks which will be made up of different criteria. This will equal to a total of 360 marks for the year from all 6 hinge assessments.

Example;

Food Tech practical they will be assessed on the following areas:

Preparation of cooking - 12 marks

Quality assure food in preparation of cooking - 12 marks

Techniques demonstrated - 12 marks

Final presentation of dish - 12 marks

Food safety practices and evaluation - 12 marks