Curriculum Statement - DESIGN TECHNOLOGY & CREATOR SPACE

BUDMOUTH ACADEMY WEYMOUTH
AN ASPIRATIONS ACADEMY

Our Intent:	
What is the vision (big picture) for your subject?	Our vision is to develop a dynamic, inclusive, and interdisciplinary learning environment. Our goal is to foster adaptable, empathetic, resilient, and innovative thinkers who are creative problem-solvers. Through the curriculum, we aim to foster students who; Look at the world from different angles so that they are innovative. See past themselves and able to see problems from other people position so they are empathic, Apply design thinking, practical skills and knowledge to real-world contexts, so they are prepared for a wide range of future careers and make lasting societal contributions.
What are the key concepts that underpin your subject?	Within our curriculum there are three distinct areas; Design & Technology, Computer Science and Food. The Key concepts that are explicit across those areas are the 6 stages of design thinking; Empathise, Define, Ideate, Prototype, Test and Implementation which form the iterative design process: **Empathy** is the critical starting point for successful design thinking solutions; knowing who it is you're solving a problem for and why. **Define** is about clarity, focus and definition. Gather together all the insights you've collected to begin to make sense of the landscape of solutions you're exploring. The **Ideate** phase is where creativity is unleashed and abstract ideas are created and given image and form (ideation) **Prototype** is the stage where we transforming ideas into tangible 'outcomes'. These could be packaging, a user interface, a structural product or even a customer focused service. **Test** outcomes, evaluate them critically but constructively and feedback to the client or user. **Implementation** stage, is often regarded as the sixth and final stage, is where the designed and developed output is executed. It is a culmination of the preceding stages that come together post-development to implement the final solution. Essentially it is where prototypes develop towards commercial products.
Which key themes are repeated over time?	The curriculum can be divided into 4 sections; Design, Make, Evaluate and Technical knowledge. Technical knowledge is the understanding of how products and systems work, including their mechanisms, structures, and materials. It's the practical knowledge that allows individuals to communicate; design, create, and evaluate products effectively. Technical knowledge is applied during communication and work hand in hand and inform each other through the following themes Empathise/Define: Investigate users wants and needs, task analysis, product analysis, ACCESS FM, creating a design brief, creating a design specification. Ideate /Designing: 2D drawing plan view- orthographic; 3D Drawing: freehand crating, isometric, perspective. Annotations, CAD virtual modeling, rendering, working drawings. Prototyping/ Making: Manufacture by; subtraction, addition, forming, assembly and with finishes. Using a variety of tools equipment and processes to produce physical and digital artefacts. Testing: user testing, evaluation against the specification. Technical knowledge: material classification, sources/provenance, properties footprint, longevity. Structures, systems (computer, electronic and mechanical), Sustainability, Tools, Equipment, commercial processes, Ergonomics and anthropometrics. Algorithms and programming, the use of data.
What knowledge and skills will students have at the end of each key stage?	KS2: To be able to develop design criteria from research to generate develop, model and communicate ideas through discussions, annotated sketches, cross sectional, exploded, patern pieces, computer aided design. Being able to make by selecting and using a wide range of tools and equipment, with specified materials based on their aesthetic and functional properties. students should be able to use the basic principles of healthy eating to prepare dishes and understand how to apply the priciples of healthy eating. students should be able to prepare a variety of dishes, predominantly savoury. students will understand seasonality and how ingredients are grown, reared, caught and processed
	KS3: students will be able to identify and solve design problems. They should effectively use research and analysis to inform their design decisions. They should demonstrate creativity in generating ideas and be able to create detailed design specifications. students should possess a solid understanding of the technical aspects, including basic principles of mechanics and materials. This knowledge will enable them to make informed decisions during the design and making processes. students will develop a broader range of practical skills, apply scientific and mathematical knowledge to design challenges, and evaluate products for function and sustainability. Understand and apply the principles of nutrition and health, Cook a variety of predominantly savoury dishesto be able to feed themselves and tihers. students will become competent in a range of cooking techniques undertanding how to adapt and alter taste, texture and smell. students will be able to adapt for different dietary needs. The students will be able to adapt dishes and consider the cost of living
	KS4: Knowledge of buildings/structures/infrastructures and building materials. Knowledge of Health and safety,tools and equipments and manufacturing processes linked to the construction industry using hand tools. Planning out a basic building task using the correct terminology. students will deepen their technical knowledge, use advanced tools and software, and create innovative, user-centered products supported by research and iterative design. students can select, prepare and serve dishes to suite the needs of others. students will be able to meet industry standards as well as having an understanding of the hospitality industry. students will develop serving skills to present their food attractively. students will develop knowledge of nutrition further to ensure nutritional needs of customers are met. students will demonstrate an understanding fo the importance of sustainability, environmental impact, food security and provenance as well as the impact on the environment. students will show food standards and meet health and safety expectations
	KS5: Knowledge of Materials and testing. Manufacturing and knowledge of a range of engineering processes. For example heat treatment, turning, milling and drilling. students will also need the knowledge of practical material testing strategies. students will master sophisticated design principles, critically evaluate complex real-world problems, and produce professional-standard outcomes through independent, creative problem-solving. By the end of KS5, students studying AQA A-level Fashion and Textiles will have gained a deep understanding of fibres, fabrics, and textile technologies, alongside advanced skills in designing, pattern cutting, and garment construction, informed by a critical awareness of historical and contemporary designers (such as Vivienne Westwood, Alexander McQueen, and Stella McCartney), influential design movements (including Art Deco, Bauhaus, and Punk), and key social, ethical, and environmental issues, enabling them to create innovative, functional, and aesthetically considered textile outcomes supported by thorough research, development, and evaluation.
Does your curriculum intent match or exceed the breadth of the National Curriculum/Subject specification?	Our curriculum is designed to meet and exceed the breadth of the National Curriculum and subject specifications. It ensures comprehensive coverage of all required topics while offering deeper learning opportunities, critical thinking, and real-world applications. Through a carefully sequenced progression, our curriculum builds on prior knowledge, supports mastery, and fosters a love for learning. We provide enrichment opportunities, cross-curricular links, and differentiated support to meet the needs of all learners, ensuring they are challenged, engaged, and prepared for future success.
How do you ensure that learning is sequenced effectively over time in your subject?	Technical knowledge and assessments of the strands are based on the framework developed by NCCE and DATA in response to the National curriculum they are Design, Make, Evaluate, Technical Knowledge and cooking and nutrition. Across computing they are digital literacy, Computer Science and Information technology.
How have you decided what knowledge and skills you want students to learn in your subject?	As a department we have collaborated to develop our curriculum using the national curriculum documents for computer science and design and technology. In addition we have used the content of the exam specifications to ensure topics are revisited through KS3-4-5 and only introduced topics when they are relevant.
How do you plan to cater for cultural capital e.g. trips, visits, enrichment, careers, applied learning, real word application & power skills development?	Design museum/V&A trip yr10, southampton uni (Materials Testing Yr 12 Engineering) CREATOR SPACE - Paris - Disney After school cookery club KS3 Work experience at Cote restaurant in Dorch KS3 Green power car club/Scalextric club Clothes Show/Bath Costume Museum" After school making club for year 7 and 8 in a resistant materials area.
What are your main instruments of the curriculum used to implement, deliver, and assess your curriculum effectively? (Materials should privilege thinking over task completion - memory is the residue of thought)	Our mantra is "Process over Product" Consistency is at the heart of our Design and Technology curriculum with a common format for lessons ensuring a consistent and high-quality learning experience across all year groups from classroom to classroom. Lessons are carefully structured to maintain academic rigour while allowing for effective differentiation across all ability ranges. Similarly, regular assessments provide consistency in measuring student progress and maintaining high standards. students are assessed more and more through formative assessments such as in the use of knowledge testing and then longer scaffolded assessments at KS3 which assess comprehension, analysis, evaluation and creativity. Assessments are focused on knowledge and skills from each specific unit, rather than repeating GCSE style questions at KS3.
How is homework used to encourage, enthuse and develop students' skills and understanding?	At all Key stages duel coded knowledge organisers are used for homework which are then used at the beginning of lessons and form part of the department's assessment structure ensuring students. Exam questions alongside Knowledge organisers based on the learning undertaken in the lessons are set at KS4 & 5 and peer/self assessed at the beginning of lessons.
How are you ensuring that each teacher has the requisite subject knowledge to teach effectively?	At Key Stage 3 and 4, lesson and assessment planning is developed collaboratively to ensure consistency, coherence, and high-quality teaching across all classes. CPD across the department is delivered regularly by experienced teachers who use evidence-based research to update the department on the best way to ensure knowledge is retained and skills are developed effectively. Examiners/moderators in the department lead on CPD at KS4 and 5 and marking is regularly undertaken blindly and then moderated to ensure the highest academic standards.
Our Implementation:	
What will we see when we drop into your subject lessons and why?	A clearly structured format which is across the entire department even if the unit being delivered is different all teachers will have a knowledge organiser quiz of 5 questions as a starter. the lesson objects are ran through and explicitly links to prior learning are discussed and how today's lesson links to future learning. Teachers model the work and use questioning and MWB to check for understanding.
How do you adapt or tailor your curriculum to meet the needs of students with different starting points (KS2 data)?	students have a pretest and post test for each unit and 2 cumulative knowledge tests in the year at the end of unit 3 and unit 6. The pre-test allows teachers to adapt their teaching based on their prior knowledge and identify gaps and misconceptions at the beginning of the unit. Super 7 Literacy techniques. AfL Techniques. Use materials to lead the learning about material properties.
How do you stretch students who are high prior attainment?	Our curriculum is designed to support high prior attainment students by providing and developing opportunities for thinking deeper at each stage of the design process. By asking high level, open ended questions that require students to think critically and articulate their reasoning in depth. Feedback also has a focus on pushing students to refine their work, explore alternative solutions, and aim for excellence in both functionality and aesthetics. Creating tiered problem-solving tasks, where students progress through increasingly complex challenges ensuring they are consistently engaged and stretched.
How do you support and scaffold (visual, verbal & written) for students who are SEND?	Visual Supports: Annotated texts, mind maps. Dual Coded Knowledge Organisers., visalisers, use of whiteboards Verbal Support: Structured discussion, sentence stems, and guided peer interaction. think pair share Written Scaffolding: Writing frames, modelled answers. think pair share, peer support, use of white boards
How do you support students who are disadvantaged?	Our curriculum is designed to support disadvantaged students by addressing potential barriers to learning and ensuring that all students have equal opportunities to succeed. We provide targeted support in key areas, including access to resources, development of literacy skills, and cultural capital enrichment. Supplying ingredients to PP students KS3 +4 We achieve this by embedding the following into our curriculum planning: Access to Quality First Teaching & Resources, Literacy Support, Building Cultural Capital and Targeted Support & Intervention
Our Impact:	
How are you monitoring implementation in your subject area?	Regular lesson observations, student feedback, and assessment reviews ensure curriculum effectiveness. Moderation processes maintain consistency in marking and feedback. Data analysis, colaboration work
How do you check the rigour in planning and resourcing in your subject area?	Curriculum Planning & Review: We conduct regular curriculum audits to ensure that our schemes of work align with national curriculum expectations and provide a coherent, sequenced progression of knowledge and skills. This involves reviewing the depth and breadth of topics, ensuring that students are exposed to all the material areas available. Collaborative Planning & Departmental Oversight: Rigour is further ensured through collaborative planning sessions within the department, where staff work together to refine lesson sequences, assessment strategies, and differentiation techniques. Lesson plans are regularly discussed and reviewed to ensure they promote deep thinking and challenge all students. Additionally, moderation of student work ensures consistency in marking and feedback, maintaining high expectations across all key stages. High-Quality Resourcing: We carefully select and develop resources that promote design thinking and Power Skills.
How do you use assessment in your subject area?	KO'S, Pre-test/posttest, assessment strand. coursework inline with exam board requirements - command verbs, content area, application, environment.... exam builder, regular assessments standardised across department
How do assessments identify gaps in students' knowledge and their ability to apply that knowledge fluently and accurately?	students have a pretest and posttest for each unit and 2 cummulative knowledge tests in the year at the end of unit 3 and unit 6. The pre-test allows teachers to adpat their teaching based on their prior knowledge and identify gaps and misconceptions at the beginning of the unit.
How is knowledge remembered in your subject?	Explicitly teach active recall techniques for revision, revisiting, retrieval practice from do now tasks, dual coding. cold calling, do now tasks Knowledge. DT lessons through practical and theoretical applications to solve real-world problems, and iterative design processes that reinforce learning.

Curriculum Overview: DESIGN TECHNOLOGY & CREATOR SPACE

Rotation DT		Product Design 1	Product Design 2	Textiles	CAD CAM	Food 1	Food 2	Computer Science*
Year 7	Curriculum	**How can we make more?** Students will learn about timbers as a category of materials, specifically natural timbers and the types, characteristics and uses of different types including the life cycle of timbers as a material. Students will be introduced to isometric and orthographic drawings and use those to plan and undertake a batch production and one of production task to produce an inlay box for an end user. **Skills: Planning, Marking out and Manufacture**	**Structures - evaluating and testing** Students will design and create using resistant materials techniques, a Crane Structure.They will developing practical modelling skills, creativity, and an understanding of the design process from concept to finished product model. **Skills: Marking out Manufacture**	**Textiles** Students will design and create a chicken pin cushion and a coin purse using basic textile techniques and nature-inspired printed fabric, developing practical sewing skills, creativity, and an understanding of the design process from concept to finished product. **Skills Designing and Evaluation**	**Key Fob/Key Ring** Hardware, Software, Systems, input process control Electrical (TinkerCAD). 3D CAD (Onshape TinkerCAD) Responsibilities of designers, engineers & technologists 3D & mathematical modelling & computer based tools ***Computer Science National Curriculum: Cross-Curricular Connections Leading into Year 8** **Skills, Designing CAD CAM**	**Food hygiene, safety and Nutrition preparing to cook safely** Students will learn how to stay safe while preparing food. You'll explore kitchen hazards, how to use equipment properly, and the rules to follow to prevent accidents and keep everything clean and hygienic. **Skills Food Preperation, Evaluation and safe and hygenic working.**	**Cooking methods and following a recipe** Students will learn about different ways of cooking food, like baking, boiling, and frying.You'll also practise reading and following a recipe step by step to make a simple dish safely and successfully.	
	Creator Space	**Make More, Create Smarter:The Inlay Box Challenge** Students will become creative problem-solvers and collaborative makers by exploring how products move from concept to creation.Through hands-on experimentation with timbers, students will learn to combine design thinking, technical drawing (isometric and orthographic), and production techniques (using jigs and templates) to design and manufacture both prototype and batch-produced inlay boxes for a chosen user.This project develops both creative and practical power skills - from innovation and teamwork to precision, planning, and	**Raising the Bar:The Crane Challenge** Students will collaborate as creative engineers to design, model, and test a crane structure that can perform under real-world forces and stresses. By applying resistant materials techniques and design thinking principles, they will explore how creativity and engineering intersect to solve structural challenges.This project encourages teamwork, experimentation, and iterative problem-solving while developing practical making skills and an understanding of how design evolves from concept to functional prototype.	**Stitched by Nature:The Creative Textiles Challenge** Students will explore how creativity, design, and craftsmanship intersect by designing and producing a nature-inspired textiles product, such as a chicken pin cushion or coin purse.Through hands-on sewing and printing techniques, they will transform ideas from concept to creation, applying design thinking to develop patterns, textures, and sustainable material choices. This project fosters fine motor skills, creative problem-solving, and an appreciation for how natural forms can inspire functional and beautiful designs.	**From Click to Create:The Key Fob Design Challenge** Students will explore how creativity and technology combine to shape the products of the future by designing and manufacturing a personalised key fob using CAD and CAM tools such as Onshape and TinkerCAD.They will investigate how designers, engineers, and technologists use digital systems, mathematical modelling, and computer-based tools to turn ideas into precision-made products. This project develops critical thinking, digital fluency, and the power skills of innovation, problem-solving, and collaboration within a real-world design context.			
Year 8	Curriculum	**How do we know what to make?** Students will learn about BS 8888 and the standard conventions covered by all technical drawings.You will also use the standard conventions to produce your own orthographic and exploded diagrams of your product.You will also build on your year 7 natural timbers knowledge by expanding it to include Manufactured boards you will also use manufactured timbers in the production of a passive amplifier. **Skills:Technical Drawing, Manufacture**	**Board Game** Students will learn about, Industrial priniting methods, origins of card paper and board, origins of plastics and life cyle of materials and where does waste go? Students will create their own board game based on a chosen design briefs. **Skills: Design Brief, Designing, CAD**		**Maze/ Jewellry** 2D and 3D Cad software, XYZ axis New and emerging technologies 3D printing and additative manufacturing, indentifying users needs, Mechanical systems and electronic systems CC **Skills: Design Brief, Designing, CAD**	**What do we need to know when feeding our family & friends?** Cooking methods and impact on nutrition, How the kitchen brigade works in the professional environment, How to successfully cook pasta, identifying practical skills. Understanding dietary needs for coelic and lactose intolerance. food miles and provenance	**Multiple cooking methods** Developing practical skills further and understanding how families can be fed well whilst considering a reduced budget. Increasing skills for sauce maing using the all in one method and understanding how to adapt the recipe if needed. Gainging knowledge in food choices - religious, allergies, intolerances and nutrition of the ages. Further understanfding of food provenance and food miles	**Can I create pictures and words in Code?** Learn how to create your own digital pictures and add words using code! You'll use simple programming tools to draw shapes, make patterns, and display text on the screen — just like creating digital art with instructions.
	Creator Space	**The Power of Design:Amplifying Ideas into Reality** Students will explore how precision, creativity, and design standards come together to shape real-world products. Building on their knowledge of natural timbers, they will investigate manufactured boards and use them to design and make a passive amplifier. By applying BS 8888 drawing conventions, students will create accurate orthographic and exploded diagrams to guide their making process.This project develops technical drawing literacy, material understanding, and the power skills of problem-solving, attention to detail, and design communication - empowering students to turn ideas into functional creations.	**Game Changers: Designing for Play and Purpose** Students will step into the role of creative designers and sustainable makers by developing their own original board game from concept to completion. Through investigating industrial printing methods, the origins and life cycles of materials such as card, paper, and plastics, and exploring where waste goes, students will make informed design choices that balance creativity with environmental responsibility. This project nurtures innovation, systems thinking, and teamwork as students prototype, test, and refine a game that is both fun and thoughtfully made.		**From Code to Creation:The 3D Maker Project** Students will become digital creators by exploring how emerging technologies such as 3D printing and additive manufacturing are transforming the way we design and make products. Using 2D and 3D CAD software, they will apply their understanding of mechanical and electronic systems, the XYZ axis, and user-centred design to independently create either a maze puzzle or a range of jewellery pieces.This project encourages innovation, digital fluency, and creative independence - helping students connect technology with imagination to design products that are both purposeful and original.			
Year 9	Curriculum	**How are we influenced by designers?** Students will develop knowledge and understanding of how designers generate ideas and how design movements influence design. They will identify and evaluate design features such as shape, colour, style and use of materials & develop your own design that clearly shows influence from a chosen design movement/style. Students will demonstrate your modelling abilities to produce a prototype of your design and evaluate it against a specification. **Skills: Design Brief, Designing, Modelling**	**Design Ventura** In this module you will design a product worth £10 that improves everyday life, to be sold in the Design museum. You will identify the needs and wants of customers before making decisions based on your feedback. You will also analyse a variety of products that have been made by students and won past competitions to help inspire a new design idea. **Skills: Design Brief, Designing, Evaluation**	**Textiles** Students will explore a key design movement (such as Pop Art, Art Deco, Bauhaus, etc.) and use its distinctive visual style to inspire a repeat fabric print. They will create a stencil design based on their research, and transfer it onto fabric to produce a custom mug wrap, developing skills in surface decoration, pattern design, and textile techniques. **Skills: Designing, Evaluation**		**Meeting the needs of others, adapting reciepes** Students will learn how to adapt recipes to meet the dietary needs, preferences, and cultural requirements of others, developing skills in meal planning and inclusive cooking.	**Independent Recipes** Students will build their confidence by choosing and preparing recipes independently. They will plan, organise, and cook a dish of your choice, showing your understanding of ingredients, cooking methods, and kitchen safety.	**How is codeing used in the reall world to solve problems?** Students will learn how coding is used in the real world to solve problems by exploring practical applications such as automation, data handling, and creating digital solutions for everyday challenges.
	Creator Space	**Light Inspired:The Designer Influence Project** Students will explore how design movements and influential designers shape the products we use and the world around us. By investigating how ideas evolve through creativity, culture, and materials, students will analyse design features such as shape, colour, style, and material use before developing their own lamp design that reflects the influence of a chosen designer or movement. Through sketching, modelling, and prototyping, they will bring their concept to life and evaluate it against their design specification - demonstrating creativity, critical thinking, and craftsmanship.	**Everyday Innovation: The £10 Design Brief** Students will take on the role of real-world designers and innovators by responding to the Design Ventura brief - to design a product worth £10 that improves everyday life and could be sold in the Design Museum shop. Working in collaborative teams, they will research customer needs and wants, analyse past winning entries, and develop their own creative solution through iterative design thinking, prototyping, and feedback. This project develops enterprise, communication, and creative problem-solving skills, empowering students to see how design can make a genuine difference in the world.	**Design in Repeat:The Textile Print Challenge** Students will become creative textile designers by exploring how design movements such as Pop Art, Art Deco, and Bauhaus have shaped visual culture. Drawing inspiration from their chosen movement, they will develop their own repeat pattern through research, sketching, and stencil-based printing techniques. By transferring their design onto fabric to create a custom mug wrap, students will apply practical textile and surface decoration skills while gaining an understanding of how artistic ideas evolve into commercial design products. This project nurtures creativity, design literacy, and attention to detail through expressive, hands-on making.				

Examination DT		Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Design & Technology	Year 10	**Materials and their properties Tea light holder** In this project, students will design and make a tea light holder using your knowledge of different materials and their properties. They will explore how materials behave, develop practical skills, and produce a functional and creative final product.	**The Work of others Prototyping in the style of a designer** In this unit, students will study the work of influential designers and use their style to inspire your own ideas. Students will create a prototype product that reflects their design principles, showing creativity, research, and practical skills.	**Approaches in design and systems in design Night light electronics** Students will design and make a night light using electronic components and a user-focused approach. Students willexplore different approaches to design, such as user-centred, iterative, and systems thinking, to develop a functional and creative product that responds to real needs. The focus will be on understanding how electronic systems work and how thoughtful design choices improve performance and appeal.	**Mock NEA and Core Theory** In this unit, students complete a mock Non-Exam Assessment (NEA) project and deepen your understanding of core theory topics. Students will follow the same design process used in the real GCSE NEA, including research, designing, making, and evaluating, while also revising key technical content from the AQA specification.	**Mock NEA and Core Theory** In this unit, students complete a mock Non-Exam Assessment (NEA) project and deepen your understanding of core theory topics. Students will follow the same design process used in the real GCSE NEA, including research, designing, making, and evaluating, while also revising key technical content from the AQA specification.	**Contextualised NEA Theory Researching and generating ideas** In this unit, students will begin your real GCSE Non-Exam Assessment (NEA) project by responding to a contextual challenge set by AQA. Students will carry out in-depth research, investigate relevant theory, and generate a range of design ideas based on real user needs.This work will form the foundation of your final GCSE project.
	Year 11	**Contextualised NEA Theory Researching and generating ideas** In this unit, students will continue your real GCSE Non-Exam Assessment (NEA) project by responding to a contextual challenge set by AQA. Students will carry out in-depth research, investigate relevant theory, and generate a range of design ideas based on real user needs. This work will form the foundation of your final GCSE project.	**Developing and realising design Ideas** In this stage of your GCSE NEA project, students will develop your chosen idea into a final design and bring it to life through modelling and making. Students will apply practical skills, select appropriate materials and processes, and justify their decisions with clear links to user needs and technical knowledge.	**Evaluating and modification of design ideas** In this final stage of your GCSE NEA project, students will evaluate your prototype and design process in detail. Students will gather user feedback, test your product against your specification, and reflect on how it could be improved.This helps demonstrate their ability to think critically and make informed modifications based on evidence.	**Revision/Exam preparation**	**Revision/Exam preparation**	
	Year 12	**Materials and their applications** In this project students, will explore how to plan and document tasks using flowcharts and apply maths skills to calculate volumes and material wastage. They will learn about different types of materials, including hardwoods, softwoods, metals, polymers, composites, paper and boards, textiles, and smart materials. The project also covers essential safety knowledge, such as how to work safely, spot potential hazards, and carry out risk assessments.	**2 Performance characteristics of materials** In this project, students will explore forming, deforming, wasting, and additive manufacturing processes while working with a range of materials, fixtures, components, and fittings. They will learn how to use tools and equipment safely and responsibly, demonstrating good safe working practices for themselves and others. The project also looks at what influences product design, including ergonomics, anthropometrics, form and function, and how products develop. Students will also investigate different joining techniques, both permanent and semi-permanent understanding their uses, advantages, and disadvantages in real-world applications.	**Enhancement of materials** In this project, students will work across Design and manufacturing to develop their practical skills while following safe working practices for themselves and others. They will gain hands-on experience using 3D printers and laser cutters, as well as explore a wide range of processes and techniques. These include heat treatments like hardening and tempering, various casting methods, machining techniques (such as milling, drilling, and turning), and alloying. Students will also learn about different moulding processes—like injection moulding, vacuum forming, and blow moulding—along with lamination, marking out, and the use of digital technologies in design and manufacturing. This project builds a strong foundation in specialist tools and modern production methods.	**Forming, redistribution and addition processes** In this project, students will work across research, design and evaluation to design and create a functional product while developing a deeper understanding of the wider context of design and manufacturing. They will explore how technological developments impact product design, learn about current legislation that affects how products are made, and develop their skills in handling information, modelling ideas, and forward planning. Students will also apply further processes and techniques to improve and refine their outcomes, building both creative and critical thinking skills throughout the project.	**Influences and Technology developments** In the Exhibition of Work project, students will work across GridsDesign development and producing an outcome to showcase the skills and knowledge they have developed throughout their projects. They will explore key features of manufacturing industries and consider how products can be designed for maintenance, sustainability, and a cleaner environment. This project encourages students to reflect on their design journey, refine their presentation skills, and communicate their ideas effectively to an audience.	**Contextualised NEA Theory Researching and generating ideas** In this unit, students will begin thier real A'level Non-Exam Assessment (NEA) project by responding to a contextual challenge researched and identified by themselves. Students will carry out in-depth research, investigate relevant theory, and generate a range of design ideas based on real user needs.This work will form the foundation of thier NEA project.
	Year 13	**Contextualised NEA Theory Researching and generating ideas** In this unit, students will continue thier Non-Exam Assessment (NEA) project by Students will generate a range of design ideas based on real user needs.	**Developing and realising design Ideas** In this stage of the project students will develop chosen idea into a final design and bring it to life through modelling and making. Students will apply practical skills, select appropriate materials and processes, and justify their decisions with clear links to user needs and technical knowledge.	**Evaluating and modification of design ideas** In this final stage of thier project, students will evaluate your prototype and design process in detail. Students will gather user feedback, test your product against your specification, and reflect on how it could be improved. This helps demonstrate their ability to think critically and make informed modifications based on evidence.	**Revision/Exam preparation**	**Revision/Exam preparation**	
Engineering Design	Year 10	**Unit R038 Topic Area 3: Communicating Design Outcome** In this part of the unit, students will develop the skills to communicate their design ideas clearly and professionally. Students will learn how to use different drawing techniques, including orthographic and isometric projection, exploded views, and CAD. Students will also build knowledge of how to use annotation, rendering, and modelling to explain your design choices, materials, dimensions, and construction methods.	**Unit R038 Topic Area 1: Designing Processes** In this part of the unit, students will learn how to apply the design process to solve real-world problems. They will develop key skills such as analysing design contexts, writing design briefs and specifications, and generating ideas that meet user needs. Students will build knowledge of design factors including function, aesthetics, sustainability, and safety, and learn how to apply research and creativity to develop purposeful design solutions.	**Unit R038 Topic Area 2: Design Requirements** Students will learn how to define and apply design requirements when developing engineered products. They will develop skills in identifying key user and product needs, and gain knowledge of how factors such as performance, materials, cost, safety, and regulations influence design decisions. Students will use this understanding to create clear, justified design specifications that guide their design work.	**Unit R040: Design, evaluation and modelling** In this unit, students will develop and apply their design skills to create, test, and evaluate models of engineered products. They will gain practical experience of using both physical and virtual modelling techniques, build knowledge of how modelling supports design development, and learn how to assess and improve ideas based on testing, feedback, and design criteria.		**Unit R039: Communicating designs** In this Non-Exam Assessment (NEA) unit, students will apply the skills and knowledge they have developed to produce and communicate a final design solution in response to a set design brief. Students will demonstrate their ability to generate, develop, and present design ideas clearly using appropriate communication methods, including sketches, technical drawings, and models.
	Year 11	**Unit R039: Communicating designs** In this Non-Exam Assessment (NEA) unit, students will apply the skills and knowledge they have developed to produce and communicate a final design solution in response to a set design brief. Students will demonstrate their ability to generate, develop, and present design ideas clearly using appropriate communication methods, including sketches, technical drawings, and models.	**Unit R039: Communicating designs** In this Non-Exam Assessment (NEA) unit, students will apply the skills and knowledge they have developed to produce and communicate a final design solution in response to a set design brief. Students will demonstrate their ability to generate, develop, and present design ideas clearly using appropriate communication methods, including sketches, technical drawings, and models.	**Unit R038 Revision/Exam preparation**			
	Year 12	**F131: Materials science and technology** **F130: Principles of engineering** In this unit, students will develop a deep understanding of engineering materials and how their properties influence design and manufacture.They will study the structure, classification, and behaviour of a wide range of materials and investigate how they are tested, processed, and applied in real-world engineering contexts. Students will also gain insight into material sustainability and selection for performance, cost, and environmental impact.	**F131: Materials science and technology** **F130: Principles of engineering** In this unit, students will explore the core principles that underpin modern engineering. They will apply mathematical, scientific, and mechanical concepts to solve real-world engineering problems. Students will gain foundational knowledge in statics, dynamics, electrical systems, and energy, which are essential for understanding how products and systems function.	**F131: Materials science and technology** **F130: Principles of engineering** In this unit, students will develop a detailed understanding of how engineering materials are classified, tested, processed, and selected for real-world applications. They will explore the structure and properties of different materials, how treatments and processes affect performance, and how to choose materials based on technical, economic, and environmental factors.	**F132: Engineering in practice** **F133: Computer Aided Design (CAD)** In this unit, students will develop hands-on experience of applying engineering processes, tools, and techniques to produce functioning components or products. They will gain practical skills in planning, manufacturing, and quality control, and understand the importance of working to engineering drawings, health and safety procedures, and professional standards.		
	Year 13	**F132: Engineering in practice** **F133: Computer Aided Design (CAD)** In this unit, students will learn how to create accurate, detailed engineering drawings and models using industry-standard CAD software. They will develop the skills to design, modify, and present digital representations of engineered products, preparing them for careers in design and manufacturing environments.		**F136: Computer Aided Manufacture (CAM)** In this unit, students will explore how digital technologies are used to control and automate manufacturing processes. They will develop skills in preparing and operating CAM equipment such as CNC machines, and learn how to translate CAD models into real-world components. Students will also gain an understanding of the benefits, limitations, and applications of CAM in modern engineering industries.			**Revision/Exam preparation**
DT Textiles	Year 10	How can I explore and apply fabric decoration techniques to create a unique and functional textile product? Theme: Surface decoration and sustainable design through hands-on experimentation.		How can I design and manufacture a mini skirt that incorporates functional and decorative textile construction techniques? Theme: Design, construction, and personalisation of a calico mini skirt using reverse appliqué, fastening techniques, and fashion illustration.		Subject Inquiry Question/Objective & Theme How can research into users, markets, and existing products inform a successful textiles design solution? Theme: Developing research methods to support idea generation and NEA readiness in the context of textiles product development.	
	Year 11	Students will develop and design creative, functional prototypes based on their identified design brief (Criteria B), and then produce and evaluate a high-quality prototype while refining their design ideas (Criteria C). The theme focuses on iterative design and practical manufacturing skills.	Students will produce a functional and high-quality textile prototype (Criteria C), followed by a comprehensive evaluation of their design process and final product (Criteria D). The theme emphasizes practical garment or textile product construction, finishing techniques, and reflective practice to enhance future design work.	Students will focus on the final manufacturing and quality assurance of their textile prototype (Criteria E), followed by a comprehensive reflection and presentation of their project outcomes (Criteria F). The theme highlights professional finishing, testing, and effective communication of design solutions.	**Revision/Exam preparation**	**Revision/Exam preparation**	
Fashion & Textiles	Year 12	**ntroduction to the NEA & Design Practice (Mini Project with skills)** How can research, investigation, and creative experimentation lead to innovative textile design outcomes that respond to a real-world context or user need?		**NEA Criteria A** How can I identify and investigate meaningful design opportunities to solve a real-world problem or meet a user's need in fashion and textiles?	**Criteria B and C** How can I develop a meaningful and justified design brief and specification in response to a user's needs, research, and real-world contexts?	**NEA Criteria C** How can I develop innovative and viable design ideas that respond to a user's needs, context, and specification?	**NEA Criteria D** How can I model, prototype, and make a high-quality product that reflects my design intentions and meets the needs of my user?
	Year 13	**NEA Criteria D** How can I model, prototype, and make a high-quality product that reflects my design intentions and meets the needs of my user?	**NEA Criteria D** How can I model, prototype, and make a high-quality product that reflects my design intentions and meets the needs of my user?	**NEA Criteria E** How can I evaluate and refine my prototype to ensure it meets the needs of my user and fulfils the design brief effectively?		**Revision/Exam preparation**	
Hospitality & Catering	Year 10	**Unit 1 - theory** In this unit, students will explore the world of hospitality and catering by learning about different types of providers and the wide range of roles within the industry. They will examine what it's like to work in hospitality and catering, including typical working conditions, and investigate the key factors that contribute to successful hospitality and catering services. This knowledge will help them understand how the industry operates and what skills and qualities are needed to thrive in it.	**Unit 1 - theory** In this part of the course, students will learn how hospitality and catering businesses operate behind the scenes and in customer-facing roles, focusing on both front and back of house operations. They will explore how to meet different customer needs and understand how hospitality and catering services are adapted to suit specific requirements. This helps students develop an awareness of how to provide high-quality, personalised service in real-world settings.	**Unit 1 - theory** Students will develop an understanding of the importance of health and safety in hospitality and catering environments. They will learn how to identify potential hazards and follow essential safety procedures to protect both staff and customers. The unit also covers key principles of food safety, including proper food handling, storage, and hygiene practices, helping students understand how to maintain high standards in any catering setting.	**Unit 1 & Unit 2 theory** In this unit, students will learn about the causes and effects of food-related ill health, including common symptoms and signs to watch out for. They will explore how to prevent food-induced illnesses through proper control measures and good hygiene practices. Students will also gain an understanding of the role of the Environmental Health Officer (EHO) and how they help ensure food safety in hospitality and catering settings.	**unit 1 theory and Unit 2 theory** Students will learn about the importance of nutrition and how it influences health and wellbeing. They will explore how different cooking methods can affect the nutritional value of food. The unit also covers key factors that impact menu planning, such as dietary needs, cost, and seasonality. Finally, students will develop skills in planning food production effectively, ensuring meals are prepared efficiently and meet set requirements	**Unit 2 theory** In this part of the course, students will develop practical skills by learning how to prepare and make a variety of dishes safely and hygienically. They will also explore different presentation techniques to enhance the visual appeal of their food. After cooking, students will review the quality of their dishes and reflect on their own performance, identifying strengths and areas for improvement to help them grow as confident and capable food practitioners.
	Year 11	**Walking Talking NEA** In this module, students will be guided through the Non-Exam Assessment (NEA) process step by step, with live modelling and support. They will learn how to approach each section of the assessment, from researching dishes to planning, preparing, and evaluating a two-course meal. This "walking talking" format builds confidence, helps students understand the assessment criteria, and prepares them to complete their NEA independently.		**NEA and Practial exam** In this part of the course, students will complete the real Non-Exam Assessment (NEA), which includes planning and preparing a two-course meal in response to a live brief. This includes both written coursework and a timed practical exam. Students will demonstrate their ability to research, plan, cook, present, and evaluate dishes while applying knowledge of nutrition, safety, and hygiene under assessment conditions.	**Revision** In this unit, students will review key knowledge and understanding needed for the Unit 1 written exam. They will revise topics such as nutrition, food safety, environmental factors, and the operation of the hospitality and catering industry. Students will practise answering exam-style questions, apply their knowledge to scenarios, and develop exam techniques to improve confidence and performance.	**Revision/Exam preparation**	
Computer Science	Year 10	**Systems Architecture & Programming** In this unit, students will build foundational knowledge of how computer systems work and develop key programming skills. They will learn how a CPU processes instructions, how memory and storage interact with the system, and how to write, test, and refine programs using Python. This unit combines theoretical understanding with practical coding experience.	**Memory and storage** **Algorithms** In this unit, students will learn how computers store and access data. They will understand the purpose and characteristics of different types of memory and storage, including RAM, ROM, flash, and secondary storage devices. Students will also develop knowledge of how data is represented in binary and how file size is calculated.	**Networks & Protocols** **Robust programs** In this unit, students will learn how computer systems communicate over networks. They will explore the different types of networks, how data is transferred, and the role of key hardware and protocols in network communication. Students will also gain an understanding of internet technologies, including the use of IP addresses and the structure of the web.	**Network Security** **Boolean Logic** In this unit, students will learn how to protect computer systems and networks from threats. They will develop knowledge of common cyber security risks and understand how individuals and organisations defend against them. Students will also explore different types of attacks, the role of user behaviour, and protective technologies such as firewalls and encryption.	**Software** **IDE and languages**	**Ethical, legal etc impacts** **Programming Practice**
	Year 11	**Revision & Exam practice** **Coding skills development** In this unit, students will consolidate their learning and develop the skills needed to succeed in their final exams. They will revise key theoretical topics from across the course, practise answering different types of exam questions, and learn how to apply their knowledge to unfamiliar scenarios. Students will also improve their exam technique and time management.				**Revision & Exam practice** **Coding skills development**	