

Design and Technology

2026 – 2027



THE GRANGE SCHOOL



Design and Technology – Year 7

Aims: Key Learning Objectives	In Year 7 Design and Technology, students begin to develop the creative, technical and practical expertise needed to perform everyday tasks confidently and participate in an increasingly technological world. Alongside building foundational knowledge, the curriculum is designed to explicitly develop essential life skills, including: Resilience and perseverance – learning from mistakes and improving work Teamwork and collaboration – sharing ideas and working respectfully with others Independence – taking responsibility for their own learning and outcomes Accuracy and precision – developing pride in practical skills Adaptability and problem-solving – responding positively to challenges A positive “can-do” mindset and confidence in practical environments Students will: Build and apply knowledge to design and make products Critique, evaluate and improve ideas Understand nutrition and develop cooking skills Become confident, independent problem-solvers through practical learning
Curriculum Content:	
Design and Technology: Product Design	Wooden key Holder: Students will be introduced to the workshop where they will learn how to use a selection of hand tools and machinery safely. Students will also learn how to research, design, make and evaluate during this project. There will also be a greater focus in this module on Health and Safety when working in Design and Technology. Overview of skills taught in this module: • use of hand tools in the workshop • use of machinery in the workshop • health and safety in the workshop • sustainable design • materials and their properties • following a design brief in Design and Technology. Life Skills • Resilience: Developing confidence when using tools and overcoming mistakes • Accuracy: Measuring, cutting and assembling with precision • Independence: Following a design brief and managing tasks • Responsibility: Understanding and applying health and safety rules • Problem-solving: Adapting designs and fixing issues during making
Design and Technology: Compliant Materials	Drawstring Bag: students will be based in our textiles classroom, where they will learn how to control a sewing machine with accuracy and skill. They will learn about the properties and uses of a range of fabrics and make a high visibility drawstring bag. They will also learn a range of presentation techniques including perspective drawing, rendering and creative font design. Overview of skills taught in this module: • exploring and understanding textiles equipment and materials • product analysis techniques • working to a design brief • drawing and rendering techniques • Health and Safety. Life Skills • Perseverance: Practising and refining sewing accuracy • Adaptability: Responding to challenges in making

	• Creativity and courage: Making design choices and experimenting • Teamwork: Supporting peers and sharing equipment responsibly • Attention to detail: Producing a high-quality finished product
Food Preparation and Nutrition	Food: All students will participate in Food Preparation and Nutrition. In Year 7, students will begin at a basic level whereby they will focus on how to make proper use of the equipment in cookery. Students will also gain a knowledge of the different ingredients and their purpose in basic level recipes. Furthermore, students will learn the roles of the different nutrients and how they can contribute towards a balanced diet. Overview of skills taught in this module: • knife skills • learning how to use hobs, grill and oven • how to adapt recipes to reduce sugar. • how to cook dishes that contribute to a balanced diet • mini science investigation into enzymic browning • Health and Safety. Life Skills • Independence: Preparing simple dishes confidently • Organisation: Managing time, ingredients and equipment • Responsibility: Understanding hygiene and safety • Resilience: Learning from mistakes and improving dishes • Healthy decision-making: Understanding balanced diets
Assessments	Students' work is assessed throughout the Design and Technology rotation and will be given a level during each rotation. As well as marking and feedback in books, students will also have two formative assessments at mid points through the module to monitor their progress. They will be assessed across two of the key areas of focus, seen below, during each rotation: • Investigation and Research • Design and Development • Manufacture • Evaluation and Analysis For each of these areas, students will gain a mark from T5, T6, 1, 2, 3, 4, 5, and 6. In addition to this, students will sit an end of rotation test to check their understanding of the topics taught. In addition, assessment recognises: • Effort and resilience • Independence and initiative • Teamwork and collaboration • Accuracy and quality of work This ensures that students understand that how they learn is as important as what they produce.
Homework Structure	Homework is set twice a rotation giving a range of Design and Technology homework activities that complement and extend the rotations curriculum and include different levels of challenge. Students will complete the activities once a half term. They are marked from 1-3 (Good, Very Good and Outstanding) with achievement points awarded accordingly.
School-based enrichment opportunities	Trips and visits to be arranged.
Resources available for home-based study	www.technologystudent.com Exploring Design and Technology for Key Stage 3: Boost eBook (hoddereducation.co.uk)

Design and Technology – Year 8

Key Learning Objectives	In Year 8 Design and Technology, students build on their Year 7 foundations to further develop their ability to investigate, design, make and evaluate a range of projects. Alongside developing technical knowledge, the curriculum explicitly embeds key life skills, ensuring students grow as confident and capable learners. These include: • Resilience and perseverance – improving designs through iteration • Teamwork and collaboration – working effectively with others • Independence – selecting tools, managing time and making decisions • Accuracy and precision – producing high-quality practical outcomes • Adaptability and problem-solving – responding to challenges creatively • A positive “can-do” attitude and confidence in practical work Students continue to become independent thinkers and problem-solvers, applying knowledge from Maths and Science in practical contexts and preparing for potential GCSE pathways
Curriculum Content:	
Design and Technology: Product Design	Celebration Box: students work using a variety of processes to create a celebration box. In this topic, they learn to work with a range of hand tools and are taught how to select and use hand tools in the workshop safely and independently building on knowledge from year 7. Students gain a further understanding of materials and their properties. Students are also introduced to joining methods, both temporary and permanent and a range of fixtures and fittings. Key Learning Objectives: Using the workshop safely Selecting, identifying and using tools Working with a range of materials based on their properties Casting in pewter The 6 R's Working to a design brief Health and Safety. Life Skills • Independence: Selecting and using tools safely with increasing confidence • Resilience: Overcoming challenges during making and refining work • Accuracy and precision: Improving quality through careful measurement and assembly • Responsibility: Applying health and safety rules consistently • Problem-solving: Adapting ideas to meet a design brief
Design and Technology: Compliant Materials	Mood Light: students will be learning all about graphic design and products. They will identify where graphic design is found in the world around them and will learn some skills attributed and related to this design area. Such skills include sketching, drawing techniques, rendering and using CAD/CAM to develop and enhance their designs. Students complete a packaging project where they are tasked to design and create a piece of packaging and logo for a mood light company. Students will work with the computers and machinery available in the department to design their own mood light. Gaining skills in using computers to design and learning how CAD/CAM and new technologies are used in the industry and the wider world. Key Learning Objectives: Designing and developing using computer aided design Computer aided manufacturing techniques Electronic skills and techniques New technologies Selecting tools and equipment Packaging development Working to a design brief Working with a client

	Life Skills • Creativity and courage: Generating and developing original ideas • Adaptability: Refining designs based on feedback and client needs • Teamwork and communication: Working in a collaborative design environment • Digital confidence: Using technology to solve real-world problems • Critical thinking: Evaluating and improving design outcomes
Food Preparation and Nutrition	Food: students further establish their knowledge of safe food practice and nutrition. Students learn to make a variety of more complex dishes that build their skills and understanding of how to prepare and handle food safely. They will also carry out a mini science investigation exploring how starches thicken liquids. Key Learning Objectives Knife skills Following more complex recipes Ingredients and their purpose Safe food handling and storage Meat handling and risk assessment. Life Skills Independence: Following more complex recipes confidently Organisation: Managing time, ingredients and multiple processes Responsibility: Handling food safely, including meat and high-risk ingredients Resilience: Learning from errors and improving practical outcomes Healthy decision-making: Understanding ingredients and nutrition
Assessments	Students' work is assessed throughout the D&T rotation and will be given a level during each rotation. As well as marking and feedback in books, students will also have two formative assessments at mid points through the module to monitor their progress. They will be assessed across two of the key areas of focus, seen below, during each rotation: Investigation and Research Design and Development Manufacture Evaluation and Analysis. For each of these areas, students will gain a mark from T5, T6, 1, 2, 3, 4, 5, and 6. In addition to this, students will sit an end of rotation test to check their understanding of the topics taught. • Assessment also recognises: • Resilience and perseverance • Independence and initiative • Teamwork and communication • Accuracy and quality of work This reinforces that both technical progress and personal development are valued.
Homework Structure	Homework is set twice a rotation giving a range of Design and Technology homework activities that complement and extend the rotations curriculum and include different levels of challenge. Students will complete the activities once a half term.
School-based enrichment opportunities	Trips and visits to be arranged.
Resources available for home-based study	www.technologystudent.com Exploring Design and Technology for Key Stage 3: Boost eBook (hoddereducation.co.uk)

Design and Technology – Year 9

Key Learning Objectives	At The Grange School, the Year 9 Design and Technology curriculum is designed to empower students to become confident, creative and capable problem-solvers, preparing them for progression into KS4 pathways including BTEC Construction, GCSE Design & Technology, and Food Preparation and Nutrition. Our intent is to deliver a curriculum that balances technical knowledge with the development of essential life skills, ensuring students are fully prepared for both further education and life beyond school. Through practical, engaging and challenging experiences, we explicitly develop key attributes including: • Resilience and perseverance through iterative design and making • Teamwork and collaboration through shared problem-solving • Independence and adaptability in response to challenges • Accuracy and precision in practical work • A positive, can-do attitude and courage to take creative risks We aim to ensure all students leave Year 9 as: • Confident problem-solvers with the ability to think critically • Independent learners who can manage projects and make informed decisions • Creative thinkers who can generate and develop ideas • Responsible individuals who understand safety, quality, and sustainability • Collaborative contributors who value and respect others' ideas These are essential life skills, ensuring students are fully prepared for both further education and life beyond school. Long-Term Impact Students are equipped with: • Transferable skills essential for further education, employment and life • A growth mindset and can-do attitude towards challenges • The confidence to engage with an ever-changing technological world • The ability to apply creativity and problem-solving in real-life contexts The Year 9 Design & Technology curriculum ensures that students not only gain strong technical foundations, but also develop the life skills, mindset and attributes necessary to succeed in school and beyond. Through a carefully sequenced and skill-rich curriculum, students become creative, resilient and capable individuals ready for KS4 and the wider world
Curriculum Content: The Year 9 curriculum is structured through three key subject areas, each intentionally designed to develop both technical competence and transferable life skills.	
Design and Technology: Product Design	Project Title: Product Design – Pinball Game Project Students design and manufacture a working product, developing their understanding of materials, tools and workshop processes. Implementation of skills: • Regular opportunities for iterative design, building resilience and perseverance • Structured practical tasks to develop accuracy, precision and safety awareness • Independent project management to promote ownership and accountability • Teacher modelling and feedback to refine problem-solving approaches

Design and Technology: Compliant Materials	Project title: Compliant Materials – Accessible Controller Students explore inclusive and user-centred design using CAD, branding and prototyping techniques. Implementation of skills: • Design tasks that develop empathy and collaboration through understanding user needs • Opportunities to adapt and refine ideas based on feedback • Creative challenges that encourage risk-taking and innovation • Group discussion and critique to enhance communication skills
Food Preparation and Nutrition	Food Preparation and Nutrition: Students develop advanced cooking skills while deepening their understanding of food science, safety and nutrition. Implementation of skills: • Practical lessons that develop independence, organisation and time management • Real-world contexts promoting responsibility and safe working practices • Opportunities to learn from mistakes, building resilience and confidence • Collaborative working to develop teamwork and communication A variety of topics and skills are covered including: • Batch production and quality control • Exploring pastry • Cultural Cuisine • Design and make a healthy snack • Exploration of raising agents • Hazards, hygiene and handling of high-risk foods.
Assessments	Students' work is assessed throughout the D&T rotation and will be given a level during each rotation. As well as marking and feedback in books, students will also have two formative assessments at mid points through the module to monitor their progress. They will be assessed across two of the key areas of focus, seen below, during each rotation: • Investigation and Research • Design and Development • Manufacture • Evaluation and Analysis. For each of these areas, students will gain a mark from T5, T6, 1, 2, 3, 4, 5, and 6. In addition to this, students will sit an end of rotation test to check their understanding of the topics taught. Assessment is designed to value both: • Technical outcomes • Learning behaviours and life skills, including resilience, independence and collaboration Regular formative assessment, mid-point checks and end-of-unit tests ensure: • Progress is monitored • Feedback is actionable and specific • Students understand how to improve both skills and outcomes
Homework Structure	Homework is set twice a rotation giving a range of Design and Technology homework activities that complement and extend the rotations curriculum and include different levels of challenge. Students will complete the activities once a half term. They are marked from 1-3 (Good, Very Good and Outstanding) with achievement points awarded accordingly.
School-based enrichment opportunities	Trips and visits to be arranged.
Resources available for home-based study	www.technologystudent.com Exploring Design and Technology for Key Stage 3: Boost eBook (hoddereducation.co.uk)

Construction and the Built Environment

Course Details	Exam Board: Edexcel Level: Tech Level 2 Examination Structure: • Two internal set units Construction in Practice and Construction and Design. • One External (exam) Construction Technology The three components focus on the assessment of applied knowledge, skills and practices. These are all essential to developing a basis for progression and therefore learners need to achieve all components in order to achieve the qualification. Written exam: Component 1: Construction Technology (1 ½ Hours). 60 marks (January/February) Coursework/Controlled Assessment: • Component 2: Construction in Practice • Component 3: Construction and Design
Key Learning Objectives	This course allows you to study construction and the built environment, giving you the opportunity to gain a broad knowledge and understanding of the industry. You will develop skills such as interpreting and analysing information, identifying the infrastructure required for safe and efficient work, and understanding how client needs can shape building design. Learners will have the opportunity to develop applied knowledge and practical skills in the following areas: • Construction technology • Construction in practice • Construction and design. You will build on the knowledge gained in the mandatory units by completing the Exploring Carpentry and Joinery Principles unit. This will provide you with an opportunity to develop a wider understanding and appreciation of a specific aspect of the construction industry.
Curriculum Content	
Autumn Term (September – December)	In the Autumn term of Year 10, students will begin their first assignment brief, Component 2: Construction in practice. This unit is the practical element of the course and in this term, students will be able to explore working in the workshop using the tools and machinery. In this component, you will learn and apply vocationally correct techniques to perform construction activities which include the appropriate selection and use of a range of tools to perform construction activities. In doing this you will develop some understanding of working safely in a craft role in the construction industry. You will also have to analyse hazards and risks and then complete some practical work in carpentry and joinery. Learning Outcomes In this unit you will: A - Be able to understand hazards and risk for safe production of a practical construction outcome B - Be able to produce a practical construction outcome. As well as building a frame with 4 different types of joints, they will be tasked to complete a risk assessment and to demonstrate their understanding of tools and machinery.

	Alongside component 2 student will also be developing their knowledge and understanding of component 1: Construction technology (exam) This component will develop knowledge and understanding of processes, terminology and technology used in the construction of the built environment. An exam worth 60 marks will be completed under supervised conditions. The supervised assessment period is a maximum of 1.5 hours and should be arranged in the period timetabled by Pearson. The assessment availability is January/February and May/June. Assessment Objectives AO1 Demonstrate knowledge of work of the construction industry and the different technology used in low-rise construction projects AO2 Demonstrate understanding of work of the construction industry and the different technology used in low-rise construction projects AO3 Be able to make connections between different construction technologies to ensure appropriateness of low-rise construction projects in different scenarios
Spring Term (January - April)	During this term the student will continue to work on component 2: Construction in practice and prepare themselves for the assessment in March. Student will continue to develop their knowledge and understanding of component 1: Construction technology (exam).
Summer Term (May - July)	In the Summer term, students will go on to begin their third assignment brief Component 3: Construction and design. Learners will gain an understanding of clients' needs and develop skills in producing building design briefs and sketches that consider construction constraints. Learning Outcomes In this unit you will: A - understand the needs of a client and the constraints on design when designing a low-rise building B - be able to graphically communicate the design of a low-rise building. The component will bring together knowledge and understanding from other components in order for you to gain an insight into the work of the designer. This will give you a broad understanding of construction and enable you to make informed choices when considering your post-16 education. It will facilitate pathways into technician or craft education and further training.
Curriculum Content – Year 11	
Autumn Term (September – December)	During this term the student will continue to work on component 3: Construction in practice and prepare themselves for the assessment in November. Student will continue to develop their knowledge and understanding of component 1: Construction technology (exam).
Spring Term (January - May)	In January of this term student will take their exam (Component 1).
Assessments	Students will carry out tasks/assignments throughout the course. Their teacher will mark these, and students will receive feedback as to how they are getting on. • Construction technology (exam) Externally marked • Construction in practice – Assignment internally marked • Construction and design – Assignment internally marked

Homework / independent study	Over the duration of the course, students will be set homework regularly in order to improve understanding of the topics covered in theory lessons.
School-based enrichment opportunities	Afterschool sessions are often run for students who would like to improve their work. Students should ask their teacher for more details with regards to which days of the week they may stay.
Books suggested for independent/wider reading	BTEC First Construction and the Built Environment Student Book
Resources available for home-based study	

Design and Technology - Product Design

Course Details	Exam Board: AQA Level: GCSE Grades 9-1 Examination Structure: 50% Coursework 50% Exam Written exam: 2 hours (100 marks) 50% of GCSE • Section A: Core Technical Principles (20 marks) • Section B: Specialist Technical Principles (30 marks) • Section C: Designing and Making Principles (50 marks) Coursework / Controlled Assessment: Non-exam assessment (NEA): 30-35 hours approx. (100 marks) 50% of GCSE • Core Technical Principles. • Specialist Technical Principles. • Designing and Making Practice.	
Key Learning Objectives	In KS4 Design and Technology, students will gain a breadth of knowledge that covers the whole Design and Technology Curriculum. This includes building on knowledge they have gained in KS3 during both Product Design and Compliant materials units. During Year 10, students will be able to complete a series of projects building on their designing, making and CAD skills, preparing them for year 11 when they start their NEA (design and make project). The project includes researching and investigating a design context, generating, and developing ideas, realising and making prototypes and evaluating the design process. Students following the Product Design pathway will work with and develop skills and knowledge of woods, plastic and metals.	
Curriculum Content – Year 10		
Autumn Term (September – December)	What will be covered? • New and emerging technologies. • Sustainability in Design and Technology (Finite and non-finite resources, disposal of waste). • Enterprise in Design and Technology (Crowdfunding, virtual marketing, and fair-trade). • Culture and Society in Design and Technology (SMSC considerations in Design). • Environment and Design and Technology (Continuous improvement, efficient working, pollution and global warming). • Production Techniques and Systems (automation, CAD, CAM, FMS, JIT and lean manufacturing). • Fossil fuels (Coal, oil and gas), Nuclear Power and Renewable Energy (Wind, solar, tidal, hydro-electrical, biomass), Energy Storage.	Project: NEA Prep Introduction to the design context. Researching and investigating. Analysing the task/context. Investigating a client. Writing a design specification
Spring Term (January - April)	• Modern Materials (New or improved processes), Function alterations (LCDs, Nanomaterials). • Smart Materials and their properties. • Composite Materials and Technical Textiles. • Electronics (Inputs, processes and outputs). • Different types of movement (Linear, rotary, reciprocating and oscillating). • Levers, linkages and rotary systems. (1st, 2nd, 3rd order, bell cranks, push/pull, CAMS, gears, pulleys and belts).	Year 10 NEA Preparation Project Generating and presenting ideas around the context. Developing ideas through a range of methods. Realising Ideas and creating a final prototype.

	• Materials and their working properties (Papers and boards, timbers, metals, polymers and textiles). • Skills Build Projects.	
Summer Term (May - July)	Students begin final assessed project (NEA). Theory lessons covering: • selecting materials (functionality, aesthetics, environmental factors, availability, cost, social factors, cultural factors and ethical factors) • testing materials against forces and stresses (tension, compression, bending, torsion and shear) • improving properties of materials (lamination, bending, folding, webbing, fabric interfacing) • carbon footprint and Ecological issues in design and manufacture (Deforestation, mining, drilling and farming) • the 6 R's (reduce, refuse, re-use, repair, recycle and rethink) • social issues (safe working conditions, reducing pollution).	
Curriculum Content – Year 11		
Autumn Term (September – December)	What will be covered? • Primary sources of materials. • Properties of materials. • Modification of material properties for specific purposes. • Shaping and forming using cutting, abrasion and addition. • Stock forms, types and sizes of materials. • Scales of production (Prototype, batch, mass and continuous).	Project: NEA Prep Students continue to develop final NEA. Generating and developing their ideas.
Spring Term (January - May)	• The use of production aids (patterns, jigs, templates). • Tools, equipment and processes (wastage, addition, deforming and reforming). • Industrial processes. • The preparation and application of treatments and finishes. • Application of quality control.	Students continue to develop final NEA. Realising and evaluating their ideas. Completion of final NEA project
Assessments	Students will be assessed on their final NEA project and exam. These parts of the course are both worth 50%. Throughout the course, students' progress will be monitored closely. In Year 10, students will be assessed in the same way that they will be assessed in Year 11, enabling them to understand the criteria and assessment procedure for their final NEA in Year 11.	
Homework / independent study	Over the duration of the course, students will be set homework regularly in order to improve understanding of the topics covered in theory lessons. Students will gain an understanding of how to work independently as this is essential for their final project. Afterschool sessions are often run for students who would like to improve their work.	
School-based enrichment opportunities	Afterschool sessions are often run for students who would like to improve their work. Students should ask their teacher for more details with regards to which days of the week they may stay.	
Books suggested for independent/wider reading	AQA GCSE (9-1) Design and Technology - Authors: Michael Ross	

	http://www.aqa.org.uk/resources/design-and-technology/gcse/design-and-technology/teach/textbooks - See the AQA website for books more closely relating to each specialist topic.
Resources available for home-based study	http://www.bbc.co.uk/schools/gcsebitesize/design/ https://senecalearning.com/en-GB/

Design and Technology - Graphic Products GCSE

Course Details	Exam Board: AQA Level: GCSE Grades 9-1 Examination Structure: 50% Coursework 50% Exam Written exam: 2 hours (100 marks) 50% of GCSE • Section A: Core Technical Principles (20 marks) • Section B: Specialist Technical Principles (30 marks) • Section C: Designing and Making Principles (50 marks) Coursework / Controlled Assessment: Non-exam assessment (NEA): 30-35 hours approx. (100 marks) 50% of GCSE • Core Technical Principles. • Specialist Technical Principles. • Designing and Making Practice.	
Key Learning Objectives	In Key Stage 4 Design and Technology, students will gain a breadth of knowledge that covers the whole Design and Technology Curriculum. This includes building on knowledge they have gained in Key Stage 3 during both Product Design and Compliant materials units. During Year 10, students will be able to complete a series of projects building on their designing, making and CAD skills, preparing them for Year 11 when they start their NEA (design and make project). The project includes researching and investigating a design context, generating, and developing ideas, realising and making prototypes and evaluating the design process. Students following the Graphic Products pathway will work with and develop skills and knowledge of Cards, paper, and plastic. They will produce a graphic outcome for their final make.	
Curriculum Content – Year 10		
Autumn Term (September – December)	What will be covered? • New and emerging technologies. • Sustainability in Design and Technology (Finite and non-finite resources, disposal of waste). • Enterprise in Design and Technology (Crowdfunding, virtual marketing, and fair-trade). • Culture and Society in Design and Technology (SMSC considerations in Design). • Environment and Design and Technology (Continuous improvement, efficient working, pollution and global warming). • Production Techniques and Systems (automation, CAD, CAM, FMS, JIT and lean manufacturing). • Fossil fuels (Coal, oil and gas), Nuclear Power and Renewable Energy (Wind, solar, tidal, hydro-electrical, biomass), Energy Storage.	Project: NEA Prep Introduction to the design context. Researching and investigating. Analysing the task/context. Investigating a client. Writing a design specification

Spring Term (January - April)	• Modern Materials (New or improved processes), Function alterations (LCDs, Nanomaterials). • Smart Materials and their properties. • Composite Materials and Technical Textiles. • Electronics (Inputs, processes and outputs). • Different types of movement (Linear, rotary, reciprocating and oscillating). • Levers, linkages and rotary systems. (1st, 2nd, 3rd order, bell cranks, push/pull, CAMS, gears, pulleys and belts). • Materials and their working properties (Papers and boards, timbers, metals, polymers and textiles). • Skills Build Projects.	Year 10 NEA Preparation Project Generating and presenting ideas around the context. Developing ideas through a range of methods. Realising Ideas and creating a final prototype.
Summer Term (May - July)	Students begin final assessed project (NEA). Theory lessons covering: • selecting materials (functionality, aesthetics, environmental factors, availability, cost, social factors, cultural factors and ethical factors) • testing materials against forces and stresses (tension, compression, bending, torsion and shear) • improving properties of materials (lamination, bending, folding, webbing, fabric interfacing) • carbon footprint and Ecological issues in design and manufacture (Deforestation, mining, drilling and farming) • the 6 R's (reduce, refuse, re-use, repair, recycle and rethink) • social issues (safe working conditions, reducing pollution).	
Curriculum Content – Year 11		
Autumn Term (September – December)	What will be covered? • Primary sources of materials. • Properties of materials. • Modification of material properties for specific purposes. • Shaping and forming using cutting, abrasion and addition. • Stock forms, types and sizes of materials. • Scales of production (Prototype, batch, mass and continuous).	Project: NEA Prep Students continue to develop final NEA. Generating and developing their ideas.
Spring Term (January - May)	• The use of production aids (patterns, jigs, templates). • Tools, equipment and processes (wastage, addition, deforming and reforming). • Industrial processes. • The preparation and application of treatments and finishes. • Application of quality control.	Students continue to develop final NEA. Realising and evaluating their ideas. Completion of final NEA project
Assessments	Students will be assessed on their final NEA project and exam. These parts of the course are both worth 50%. Throughout the course, students' progress will be monitored closely. In Year 10, students will be assessed in the same way that they will be assessed in Year 11, enabling them to understand the criteria and assessment procedure for their final NEA in Year 11.	
Homework / independent study	Over the duration of the course, students will be set homework regularly in order to improve understanding of the topics covered in theory lessons.	

	Students will gain an understanding of how to work independently as this is essential for their final project. Afterschool sessions are often run for students who would like to improve their work.
School-based enrichment opportunities	Afterschool sessions are often run for students who would like to improve their work. Students should ask their teacher for more details with regards to which days of the week they may stay.
Books suggested for independent/wider reading	AQA GCSE (9-1) Design and Technology - Authors: Michael Ross http://www.aqa.org.uk/resources/design-and-technology/gcse/design-and-technology/teach/textbooks - See the AQA website for books more closely relating to each specialist topic.
Resources available for home-based study	http://www.bbc.co.uk/schools/gcsebitesize/design/ https://senecalearning.com/en-GB/

Food Preparation and Nutrition - GCSE

Course Details	Exam Board: AQA Level: GCSE 9-1 Examination Structure: Multiple choice and extended answers - 50% of final grade. Coursework/Controlled Assessment: Coursework - 50% of final grade. NEA1: Food Investigation (15%, 10 hours). NEA2: Food Preparation Task (35%, 20 hours and 3-hour practical exam).
Key Learning Objectives	The specification sets out the knowledge, understanding, and skills required to cook and apply the principles of food science, nutrition, and healthy eating. Students will learn about how to apply nutrition through practical work, cooking of food and heat transfer, functional and chemical properties of food, food spoilage and contamination, principles effecting food safety, sustainability, food labelling and marketing, food processing and production and sensory evaluation. Throughout Year 10, students will acquire knowledge and practise the acquisition of food preparation skills. They will complete 2 pieces of NEA in Year 11 which are timed. The first piece of coursework is a science investigation with a focus on the functional and chemical properties of food. The second piece of coursework involves showcasing food preparation methods to make three dishes based on a topic set by AQA. Students will then have a written examination at the end of Year 11.
Curriculum Content – Year 10	
Autumn Term (September – December)	Students will acquire knowledge on the specification topics in order to apply this in the practical classroom. This is to prepare students with the knowledge required for their written examination. Learning in depth food preparation skills. Students will also apply nutritional knowledge to dishes produced and explore the different types of food chemistry and functions. This is to prepare students for their NEA in Food Science and their NEA in Food Preparation.
Spring Term (January - April)	Students will continue to acquire knowledge on the specification topics in order to apply this in the practical classroom. Research tasks, preparation for practical dishes exploring the knowledge learnt in nutrition and food chemistry through further practical exploration. Mock exam - Food Preparation Assessment Introduction to NEA2 in preparation for their Yr11 assessment. Using task previously set by exam board AQA. Produce 3 dishes showing as many preparation skills as possible. Maximum of 20 hours. 3 hours for the practical production as an exam.
Summer Term (May - July)	Mock exam (written exam paper) – this paper will be shortened to run in 1Hr. Introduction to the written exam paper in preparation for their final Yr11 exam. Mock Exam - Food Science Investigation Introduction to NEA1 in preparation for their Yr11 assessment. Students spend a maximum of 10 hours experimenting with different types of food products and their functions in recipes. They then produce a written or electronic report including photographs (1500 - 2000 words).

Curriculum Content – Year 11	
Autumn Term (September – December)	NEA1 Food Science investigation (15%) Released by AQA on 1st September. Applying food science and chemistry knowledge to experiments and writing up your findings in a 1500—2000 word report / essay with photographs. NEA2 Food Preparation (35%) Released by AQA on 1st November. Produce three dishes around a set brief within a 3-hour timed assessment showing as many food preparation skills as possible. Write up and evaluate your findings within a 20-hour written report.
Spring Term (January - May)	Revision programme for the end of Year 11 Revisiting topics learnt in year 10 Written examination (50% of final grade).
Assessments	Written examination 1hour 45 minutes (50% of final grade)—multiple choice, descriptive and essay/extended writing style questions. Question themes: How you can apply nutrition through practical work, cooking of food and heat transfer, functional and chemical properties of food, food spoilage and contamination, principles effecting food safety, sustainability, food labelling and marketing, food processing and production, sensory evaluation. NEA1: Food Investigation (15% 10 hours) NEA2: Food Preparation Task (35% 20 hours and 3-hour practical exam)
Homework / independent study	A commitment is required to bring ingredients in on a regular basis and complete homework that builds on the theoretical knowledge gained in class.
School-based enrichment opportunities	Culinary Skills Build afterschool clubs. Future Chef & Rotary Club competition entry.
Resources available for home-based study	‘AQA GCSE Food Preparation & Nutrition’ by Anita Tull ‘AQA GCSE Food Preparation & Nutrition Revision guide’ by CGP AQA Illuminate digital textbook.

KS5 Food Science and Nutrition

Course Details	Exam Board: WJEC Level: Alternative Academic Qualification (AAQ) in 'Food Science and Nutrition' Examination Structure: Completion of 4 units of 5 <table border="1"> <tr> <td>Unit 1: Nutritional Needs Across the Life Stages (mandatory, Yr12)</td><td>Written exam (1 hr 30 min)</td></tr> <tr> <td>Unit 2: Developing Practical Food Production Skills (mandatory, Yr12)</td><td>NEA (9 hrs 30 min)</td></tr> <tr> <td>Unit 3: Principles of Food Hygiene and Food Safety in Food Production (mandatory, Yr13)</td><td>Written exam (1 hr 30 min)</td></tr> <tr> <td>Unit 4: Experimenting to Solve Food Production Problems (<i>optional, Yr13</i>) or</td><td>NEA (12 hrs)</td></tr> <tr> <td>Unit 5: Current Issues in Food Science and Nutrition (<i>optional, Yr13</i>)</td><td>NEA (12 hrs)</td></tr> </table> Assessment: External examinations: 50% - Unit 1: Nutritional Needs Across the Life Stages = 25% - Unit 3: Principles of Food Hygiene and Food Safety in Food Production = 25% Coursework / Controlled Assessment (NEA): 50% - Unit 2: Developing Practical Food Production Skills = 25% - Unit 4 <i>or</i> Unit 5 (optional unit) = 25%	Unit 1: Nutritional Needs Across the Life Stages (mandatory, Yr12)	Written exam (1 hr 30 min)	Unit 2: Developing Practical Food Production Skills (mandatory, Yr12)	NEA (9 hrs 30 min)	Unit 3: Principles of Food Hygiene and Food Safety in Food Production (mandatory, Yr13)	Written exam (1 hr 30 min)	Unit 4: Experimenting to Solve Food Production Problems (<i>optional, Yr13</i>) or	NEA (12 hrs)	Unit 5: Current Issues in Food Science and Nutrition (<i>optional, Yr13</i>)	NEA (12 hrs)
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Key Learning Objectives	An understanding of food science and nutrition is valuable across a wide range of industries and professional roles, including dietetics, nutrition, public health, food product development, food manufacturing and food research. The WJEC Level 3 Alternative Academic Qualification (AAQ) in Food Science and Nutrition has been designed for learners who wish to progress to higher education and careers within the food, nutrition and health sectors. Through a combination of academic study and applied learning, learners develop knowledge, understanding and practical skills in nutrition, food production, food safety and scientific investigation, enabling them to tackle real-world challenges such as improving health outcomes, food sustainability and food security. Unit 1 enables learners to develop an understanding of nutrition across the life stages, including the properties and functions of nutrients, the relationship between diet and health, and the planning of nutritional requirements for different individuals and groups. Unit 2 provides opportunities to develop practical food production skills through planning, preparing, cooking and presenting nutritious food products that meet specific needs and requirements. Unit 3 develops learners' understanding of food hygiene and food safety, including the impact of microorganisms, food-borne illness, allergens and the control measures required to ensure food is safe for consumption. <i>Learners then select one of two optional units:</i> Unit 4, which focuses on investigating the scientific properties of food and solving food production problems through experimentation, or Unit 5, which develops research, analysis and evaluation skills through the investigation of current issues in food science and nutrition.										
Curriculum Content – Year 1											
Autumn Term (September – December)	Unit 1: Nutritional Needs Across the Life Stages; developing knowledge and understanding in preparation for application in Unit 1 and 2 assessments. Unit 2: Developing Practical Food Production Skills; development of practical skills and presentation of dishes in preparation for application in Unit 2 NEA (practical exam).										

Spring Term (January - April)	Complete Unit 2 NEA (planning, practical production and evaluation) Unit 1 mock examination Unit 2 mock Food practical examination Continue Unit 1 theory
Summer Term (May - July)	Finish and internally assessed Unit 2 live NEA using exam provided brief (Practical linked NEA); complete Mark Record sheet and observation sheet. SEND TO WJEC FOR MODERATION BY 15 MAY, then REVISION FOR UNIT 1 Nutritional Needs Across the Life Stages External WRITTEN PAPER: JUNE <i>After exams:</i> begin Unit 3 - Principles of Food Hygiene and Food Safety in Food Production and introduction to Unit 4 or Unit 5.
Curriculum Content – Year 2	
Autumn Term (September – December)	Complete Unit 3: Food Hygiene and Food Safety. Begin covering content for Unit 4 or Unit 5 NEA. Mock Unit 4 or Unit 5 NEA assignment.
Spring Term (January - April)	Complete the optional unit coursework Unit 4 or Unit 5 Live NEA. Unit 3 mock examination (food hygiene and food safety).
Summer Term (May - July)	Finish and internally assessed Unit 4 or 5 live internal assessment: complete Mark Record sheet and observation sheet. SEND TO WJEC FOR MODERATION BY 15 MAY, then Unit 3 preparation and revision for the Unit 3 external examination paper, (food hygiene and food safety). Preparation for Unit 1 revision and recall activities (if resitting).
Assessments	The WJEC Alternative Academic Qualification (AAQ) in ‘Food Science and Nutrition’ is assessed through a combination of two external written exams (one in Yr12 and one in Yr13) and two internal assignments set by WJEC and centre marked and submitted.
Homework / independent study	A variety of tasks are set in response to ongoing studies.
School-based enrichment opportunities	Develop community ties with local food businesses.
Resources available for home-based study	Access to Jenny Ridgewell Nutrition Program, supporting nutritional analysis, costing and sensory analysis.