Curriculum Overview | KS3 Technology

What will my child learn in Technology?

	Term 1	Term 2	Term 4	Term 5	Term 6
All Year 7 students will complete a 12 week rotation in the following areas: Computing, Food, Textiles and Product Design					
Year 7	**Computing (12 weeks)** ○ **Computer System:** E-safety, Passwords, File Management, Cloud Computing ○ **Hardware:** Input/Output, Secondary Systems ○ **Computational Thinking:** Abstraction, Decomposition, Pattern Recognition, Algorithms ○ **Data Representation:** Binary, Image Representation, File types, Quality	**Food (12 weeks)** ○ Introduction to Health Hygiene & Omelette ○ Knife Safety & Fruit Salad ○ Eatwell Guide and Pizza Bread ○ Introduction to Nutrients and Stir Fry ○ Product Analysis & Scones Experiment ○ Food miles, the environment and coleslaw. ○ Seasonality and Soup. ○ Effects of Sugar, weighing and measuringShortening and apple crumble. ○ Homemade verses shop brought. experiments. ○ Quality control and cookie making. ○ Egg fried rice.	**PD Plus: Product Design and Textiles (12 weeks)** Learning about metals, their origins and properties and making a dog tag. Learning about textiles their origins and properties and making a bookmark using transfer printing. Learning about woods, their origins and properties and making a packman using the coping saw, sanding and decorating. Learning about plastics, their origins and properties and making a wind chime. Learning about different technical drawing techniques and applying them to design a product.		

Curriculum Overview | KS3 Technology

What will my child learn in Technology?

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
All Year 7 students will complete a 12 week rotation in the following areas: Computing, Food, Textiles and Product Design						
Year 8	**Computing (12 weeks)** ○ **Hardware:** CPU, Performance, Memory, Secondary Storage ○ **Networking:** LAN/WAN/PAN, Hardware, Connection and Network security. ○ **Computational Thinking:** Developing Algorithms, Sequence, selections, Iterations, Testing, Debugging ○ **Data Representation:** Binary conversions, Additions, Scripting, Character Sets, Units of data	**Food (12 weeks)** ○ Introduction to Health Hygiene and Hokey Pokey ○ Coagulation and Cooking with eggs and bacon. ○ Product Analysis and Smoothies Experiment ○ Redraft and Mac n Cheese ○ American Cooking and Burgers ○ Italian Cooking and Spaghetti Bolognese ○ Indian Cooking and Curry ○ Peoples' Nutritional Needs ○ Cake making methods Lemon Cake. ○ Assessed practical. ○ Jollof rice.	**PD plus (Product Design and Textiles)** **Textiles -** Cushion • Learn how to safely operate the sewing machine • Learning how to pin for the machine, iron safely, allocate seam allowances and sew basic seams. • Learn how to use fabric pens and bondaweb to applique your design to your cushion. • Learn pattern cutting and develop your sewing and seam allowance skills. • work with different fabrics and components whilst monitoring quality control and evaluating your work. • Finishing a product to a good standard. **Product design** – Picture Frame • Learning about health and safety around the workshop and how to use the tools. • Analysis of products using ACCESS FM • Learning about the origins of materials such as wood, manufactured wood and plastic and learn about the environmental impacts these materials have. • Learning about different types of wood joints that are used in various products. • Learning how to make a picture frame safely by accurately marking out, cutting using the mitre guillotine, sanding and finishing the frame. • Evaluating and reflecting on the production of the picture frame.			

Curriculum Overview | KS3 Technology

What will my child learn in Technology?

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
All Year 9 students will complete a 12 week rotation in the following areas: Computing, Food, Textiles and Product Design						
Year 9	**Computing (12 weeks)** ○ **System Security:** Malware, Protection methods, encryption ○ **Networking:** Sequencing and Variables, ○ **Algorithms and Programming** ○ **Practical Application of Programming**	**Food (12 weeks)** ○ Introduction to Health Hygiene and Jerk chicken skewers ○ Food Safety & Meat balls ○ Lasagna ○ Cooked v's ready made experiment ○ Food Poisoning Savoury rice ○ Dietary Needs and pancake tasting. ○ Factors that affect food choices and recipe selection. ○ Pizza. ○ Assessed practical. ○ Pear marble cake. ○ Fish cakes and sustainability. ○ Homemade noodles and stir-fry.	**Textiles (6 weeks)** • create a fish soft toy using fleece made from recycled plastic • Learning about sustainability with DT – fair trade, lifecycle anaylsis, product lifecycles. • How to safely operate a sewing machine to construct your final product. • Sewing essential skills such as pinning for the machine, ironing safely, allocating seam allowances, and hand stitching. • Pattern cutting • work with different fabrics and components, monitor quality control, and evaluate your work.		**Product Design (6 Weeks)** ○ Health and safety in and around the workshop and how to use each tool/machine safely. ○ Learning about sustainability, energy sources and material properties & origins ○ Learning about Fairtrade. ○ Learning to solder and what function each electrical component has. ○ Using a variety of tools to produce a lamp including the belt sander, fret saw, Pillar drill and hand etching tool. ○ Evaluating and reflecting on the production of the lamp.	

In Year 10 and 11 students can study a range of courses in this subject

Eduqas Design and Technology *(With DT or Textiles Specialism)*

Eduqas Food Preparation and Nutrition.

Cambridge Nationals in Engineering Design

Curriculum Overview | KS4 Design Technology Y10

What will my child learn in Technology?

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 10	**UNIT – MATERIALS** • Papers and boards • Natural and manufactured timbers • Ferrous and non ferrous metals • Thermosetting and thermoplastics • Natural, synthetic, blended and mixed fibres, and woven, non-woven and knitted textiles	**UNIT – Smart materials, composites and technical textiles** • Modern materials • Smart materials • Composites • Technical textiles 1 • Technical textiles 2	**New and Emerging Technologies & Informing Design Decisions & Energy Generation and Storage** • New and emerging technologies: product life cycle • New and emerging technologies: production techniques • Critical evaluation of new and emerging technologies: sustainability and the environment • Critical evaluation of new and emerging technologies: future developments • Energy generation and storage: fossil fuels	**UNIT - Design and Technology and Our World - New and Emerging Technologies & Informing Design Decisions & Energy Generation and Storage** • Energy generation and storage: renewable energy • Energy generation and storage: nuclear power • Energy generation and storage: energy storage	**UNIT - Electronic systems, Mechanical components and programmable components** • Input and output devices • Feedback and control devices • Processes and microcontrollers • Types of movement, levers and linkages • Rotary systems	<u>NEA 1</u> ○ Introduction to the coursework and go through contexts ○ Mind map of ideas page ○ Client profile/mood board ○ Existing Products – analysis ○ Company research ○ Questionnaire page Start of NEA Subject specific Knowledge (Textiles OR Product Design)

NEA Coursework Preparation Content and Practice

- understanding design and technology practice, understanding user needs
- writing a design brief and specifications, investigating challenges
- developing ideas and investigating the work of others
- using design strategies and communicating ideas
- developing a prototype and making decisions

In-depth knowledge and understanding is presented in five clear topic areas:

- selecting and working with materials and components
- marking out
- using tools and equipment
- using specialist techniques
- using surface treatments and finishes

Curriculum Overview | KS4 Design Technology

What will my child learn in Technology?

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 11	**Y11 NEA:** Students to complete Section A (research) Students to complete Section B (design brief and specification Students to start Section C (Generating and developing design ideas) **Exam content:** **UNIT – Continuing with Mechanical components and programmable components** Types of movement, levers and linkages Rotary systems	**Y11 NEA:** Students to continue and complete Section C (Generating and developing design ideas) **Exam content:** **UNIT – In depth knowledge and understanding.** Students will learn about either Timbers or Textiles as part of their in depth knowledge section for part B of their exam	**Y11 NEA:** Students to start Section D (Manufacturing a prototype) **Exam content:** **UNIT – In depth knowledge and understanding - Continued** Students will continue to learn about either Timbers or Textiles as part of their in depth knowledge section for part B of their exam	**Y11 NEA:** Students to complete Students to Start and complete Section E (Manufacturing a prot **Exam content:** **Exam revision on 'core knowledge and understanding'** Students will revisit areas taught in Y10 and Y11 to boost their knowledge leading up to their summer exam	**Y11 NEA:** **Exam content:** **Exam revision on 'core knowledge and understanding'** Students will revisit areas taught in Y10 and Y11 to boost their knowledge leading up to their summer exam	Exam revision

In Year 10 and 11 students can study a range of courses this includes:

- Eduqas Design and Technology *(With DT or Textiles Specialism)*
- Eduqas Food Preparation and Nutrition.
- Cambridge Nationals in Engineering Design

Curriculum Overview | KS4 Hospitality Y10

What will my child learn in Hospitality and Catering?

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
GCSE Food Preparation and Nutrition						
Year 10	**Unit 1** 1.1.1 Hospitality and catering providers 1.1.2 Working in the hospitality and catering industry 1.1.3 Working conditions in the hospitality and catering industry 1.1.4 Contributing factors to the success of hospitality and catering provision **Unit 2** Building of practical skills, techniques and evaluation, nutritional understanding and target groups.	Unit 1 1.2.1 The operation of the front and back of house 1.2.2 Customer requirements in hospitality and catering 1.2.3 Hospitality and catering provision to meet specific requirements **Unit 2** Building of practical skills, techniques and evaluation, nutritional understanding and target groups.	Unit 1 ○1.3.1 Health and safety in hospitality and catering provision 1.3.2 Food Safety 1.4.1 Food related causes of ill health 1.4.2 Symptoms and signs of food-induced ill health **Unit 2** Building of practical skills, techniques and evaluation, nutritional understanding and target groups.	Unit 1 1.4.3 Preventative control measures of food-induced ill health 1.4.4 The Environmental Health Officer (EHO) Unit 2 2.1.1 Understanding the importance of nutrition 2.1.2 How cooking methods can impact on nutritional value	Unit 1 revision for Mock exams Unit 2 2.2.1 Factors affecting menu planning 2.2.2 How to plan production. 2.3.1 How to prepare and make dishes 2.3.2 Presentation techniques 2.3.3 Food safety practices Start mock NEA 2	Unit 2 Completion of Mock assessment. Revision and mock exams. Reteach areas identified and taught.

In Year 10 and 11 students can study a range of courses this includes:

Eduqas Design and Technology *(With DT or Textiles Specialism)*

Eduqas Food Preparation and Nutrition.

Cambridge Nationals in Engineering Design

Curriculum Overview | KS4 Food GCSE

What will my child learn in Food?

	○ Term 1	○ Term 2	○ Term 3	○ Term 4	○ Term 5	○ Term 6
Year 11	NEA 1 released 1st September 15% of the Final grade: Food science experiment Including research, hypothesis, methodology, experiment and conclusion. Homework on revision topics set in line with the mock paper they will sit in November and any areas of content that still need to be covered by the specificatio	Mock exams Mock exam feedback NEA 2 brief released mid-November. Worth 35% of the final grade. Begin research for NEA2 – Section A 15 marks Homework on revision topics set in line with the mock paper they will sit in February.	Continuation of research for NEA 2 Final choices made and justification and planning for the practical assessment.	Mock exams Mock exam feedback NEA2 section B: 3 hour practical assessment. NEA section C Evaluation Revision session begin. Homework guided revision for the final exam.	**Targeted revision for the GCSE Exam 50% of the final grade and Other Final exams** **Homework guided revision for the final exam.**	**Final exams**

Curriculum Overview | KS4 Engineering

What will my child learn in Engineering?

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 10	**R038 Principals of Engineering Design** Designing processes ○ Stages involved in design strategies ○ Stages of the iterative design process ○ Design Requirements ○ Types of criteria included in an engineering design specification. **R039 Communicating designs** ○ Task 1: Manual production of freehand sketches	**R038 Principals of Engineering Design** ○ Types of criteria included in an engineering design specification. **Communicating design outcomes.** Types of drawings used in Engineering - Free hand sketches, oblique, isometric, orthographic, exploded view, assembly drawings, block diagrams, flowcharts, circuit diagram and wiring diagram. Using CAD drawing software **R039 Communicating designs** ○ Task 2: Manual production of developed design.	**R039 Communicating designs** ○ Task 3: Orthographic drawing, assembly drawing, section drawing.	**R038 Principals of Engineering Design** ○ Stages of the iterative design process, and the activities carried out within each stage of this cyclic approach. Make and Evaluate. **R039 Communicating designs** ○ Task 4: CAD	**R038 Principals of Engineering Design** Design Requirements ○ How manufacturing considerations affect design.	**R038 Principals of Engineering Design** ○ How manufacturing considerations affect design. ○ Influences on Engineering product design. **R040 Design, evaluation and modelling** ○ Task 1 Product Analysis
Y10 NEA R039					**Y11 NEA** R040	

Curriculum Overview | KS4 Engineering

What will my child learn in Engineering?

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 11	**R038 Principals of Engineering Design** Design Requirements ○ Working drawings R038: Freehand drawings Different drawing styles Drawing Notation **R040 Design, evaluation and modelling** ○ Task 1 Product Analysis, Strengths and Weaknesses and Ranking Matrix. ○ Task 2 Product Disassembly.	**R038 Principals of Engineering Design** Evaluating Design Ideas ○ Methods of evaluating design ideas ○ Modelling Methods ○ Methods of evaluating a design outcome. **R040 Design, evaluation and modelling** ○ Task 3 CAD modelling. ○ Task 4 Production Planning	**R038 Principals of Engineering Design** Exam Content Revision **R040 Design, evaluation and modelling** ○ Task 5 Prototype making	**R038 Principals of Engineering Design** Exam Content Revision **R040 Design, evaluation and modelling** ○ Task 6 Evaluation	**R038 Principals of Engineering Design** Exam Content Revision GCSE exam	

Y11 NEA
- R040