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|  | **Year 7** | **Year 8** | **Year 9** |
| **Food Preparation and Nutrition** | Develop understanding of hygiene and safety, the Eatwell Guide, menu analysis, pizza design and methods of evaluation. Students also learn how to plan, prepare and cook a range of dishes including salads, kebabs and soup, and analyse and evaluate aspects of nutrition, food, cooking and preparation, including food made by themselves. | Develop understanding of diet analysis and dietary goals (eat less fat and sugar and eat more fibre). Students learn how to plan, prepare and cook a wider range of more complicated dishes including spaghetti bolognese, lasagne, sweet and sour, pasta bake and curry in addition to further developing their analysis and evaluation skills.  | Students learn about the “8 Top Tips” to gain a more in-depth understanding of nutritional information. Increased emphasis is placed on independence when carrying out practical work with students choosing between two dishes for each activity, or making their own choice of dish.  |
| **Food Science and Nutrition** | Develop understanding of healthy eating and food choices (5-a-day, dietary goals and nutritional analysis), buying and storing food (packaging, labelling and temperature control) and food issues relating to obesity, heart disease and dental health.  | Through a range of investigations and other activities, students develop understanding of photosynthesis, what food is, taste, digestion and iron in food. Students also learn other scientific and nutritional content, such as what makes bread rise and about foods of the future.  | Develop understanding of how butter is made, heat transfer, why food is cooked, protein, gluten, carbohydrates, fruits and vegetables, fats, oils and microorganisms in food.  |
| **Designing** | **Designing for others in a familiar context**Research, design and produce an architectural model of an area of school that could be redeveloped.  | **Iterative design and modelling in an unfamiliar context**Research, design and model a product to enable use of electronic devices whilst camping in a remote area. | **Design inspiration from other sources**Understanding how factors such as biomimicry and the work of others can provide important stimuli and a greater understanding of design.  |
| **Materials** | **Introduction to safe and accurate manufacturing in a workshop**Develop knowledge and understanding of a range of materials, processes and equipment by manufacturing a desk tidy from softwood and acrylic.  | **Advanced materials**Develop greater understanding of material by using more complex processes, forming and joining techniques to achieve better construction and finish. Manufacture a personalised storage solution.  | **Commercial manufacturing processes**Understand how production aids, including templates and a range of jigs, can be used to improve production speed and quality control. Manufacture a batch of identical adjustable plywood lamps using these techniques. |
| **Systems** | **Introduction to circuit theory and production, batch production and CNC machines**Manufacture a mood light by soldering together a circuit, assembling this into a vacuum formed casing and manufacturing a personalised diffuser using CAD software and laser cutter.  | **Structural and mechanical systems**Develop understanding of forces and designing for structural integrity by designing and manufacturing a scale version of a bridge. This is tested to destruction to establish strength-to-weight ratio and facilitate objective evaluation. Develop understanding of four types of motion and basic mechanisms including cam and follower and linkages.  | **Microcontrollers and complex mechanical systems**Use software to programme, test and download instructions onto microcontrollers to control traffic lights and robots. This will aid understanding of how we use electronics to embed intelligence in everyday products.  Build products with simple and compound gear trains using laser cut gears. Modify and test vehicles to investigate, calculate and understand the effects of changing gear ratio. |

**Key Stage 4**

In years 10 and 11 student can opt to study the following courses:

* GCSE Design and Technology
* Level 1/2 Cambridge National in Health and Social Care
* GCSE Food Preparation and Nutrition

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| **GCSE Design and Technology** |
|   | **Year 10** |  **Year 11** |
| **Half term 1** | **Investigation, primary and secondary data**Primary and secondary data, target market, ergonomics and anthropometrics, design briefs and specifications**Iterative design and make project**Modelling and producing a product to assist with storage of clothing and/or accessories | **Investigation, primary and secondary data**Primary and secondary data, target market, ergonomics and anthropometrics, design briefs and specifications**Design strategies**Systems approach, user-centred design, iteration by evaluation and improvement, collaboration, avoiding design fixation.**NEA**Complete sections A and B |
| **Half term 2** | **Design strategies**Systems approach, user-centred design, iteration by evaluation and improvement, collaboration, avoiding design fixation.**Communication of design ideas**2D and 3D drawing techniques including systems diagrams, schematic drawings, annotation, exploded drawings, 3rd angle projection, dimensioning, using scale drawings, computer and mathematical modelling, communicating through modelling, range of techniques including freehand, crating and CAD. **Focused practical task**Manufacturing multi-functional product from mild steel. | **Core and Specialist Technical Principles**Recap of topics answered badly in preparation for mock exam.**Communication of design ideas**2D and 3D drawing techniques including systems diagrams, schematic drawings, annotation, exploded drawings, 3rd angle projection, dimensioning, using scale drawings, computer and mathematical modelling, communicating through modelling, range of techniques including freehand, crating and CAD. **NEA**Complete section C and start section D |
| **Christmas** |
| **Half term3** | **Environmental, social and economic challenge**Sustainable design, deforestation and how to mitigate, global warming due to product design, Fairtrade.**Prototype development**How to develop prototypes to satisfy the brief and client requirements. Demonstrate innovation, aesthetics, ensure it is marketable, reflect critically to feedback, and use evaluation to improve. **Casting with low temperature alloy**Design and laser cut a personalised mould for casting a key ring or pendant.  | **Prototype development**How to develop prototypes to satisfy the brief and client requirements. Demonstrate innovation, aesthetics, ensure it is marketable, reflect critically to feedback, and use evaluation to improve. **Environmental, social and economic challenge**Sustainable design, deforestation and how to mitigate, global warming due to product design, Fairtrade.**Selection of materials and components**Understand the difference between materials and components. Understand how to choose materials and components considering functional need, cost and availability in relation to paper and board, timber, metals, polymers, textiles, electronics and mechanical devices. NEAComplete section D |
| **Half term 4** | **Selection of materials and components**Understand the difference between materials and components. Understand how to choose materials and components considering functional need, cost and availability in relation to paper and board, timber, metals, polymers, textiles, electronics and mechanical devices. **Tolerances**Understand what tolerances are and how products can still function as intended even if they are not the exact size. Tolerances in industry and quality control. **Focused practical tasks in wood, polymers and microelectronics**Develop skills in working with a wide range of materials and equipment but undertaking a range of focused practical tasks.  | **Mock exam preparation**Address common misconceptions from the previous mock exam and prepare for the forthcoming exam. **Tolerances**Understand what tolerances are and how products can still function as intended even if they are not the exact size. Tolerances in industry and quality control. **NEA**Sections E and F.  |
| **Easter** |
| **Half term 5** | **Material management**Minimising waste, stock sizes, seam allowance, joint overlap, measuring, datum points, production aids (jigs/templates etc.), tessellation, calculating material area and volume, calculating costs, using CAD for efficient layout**Understanding command words**Discussion of different styles of questions and model how to answer using teaching sequence for writing. **Iterative design and development project**Develop an item of kitchen equipment for specific user requirements. Emphasis on iteration, evaluation and strategies to avoid design fixation and improve ergonomics and anthropometrics.  | **Material management**Minimising waste, stock sizes, seam allowance, joint overlap, measuring, datum points, production aids (jigs/templates etc.), tessellation, calculating material area and volume, calculating costs, using CAD for efficient layout**Revision and past papers** |
| **Half term 6** | **Core Technical Principles** Revisit topics relating to CTP in preparation for the assessment.**Start NEA**Responding to context from AQA (issued 1/6/2022) students will undertake Section A of the NEA, worth 50% of the GCSE grade.  |   |

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| **Level 1/2 Cambridge National - Health and Social Care** |
|   | **Year 10** |  **Year 11** |
| **Half term 1** | **RO25 - Understanding Life Stages**Students must understand the stages of development, with regards to all aspects of PILES, from young people to adulthood as well as gain a clear understanding of the different factors that affect growth and development throughout the 3 stated life stages.  | **RO25 – Understanding Life Stages**Students must understand the stages of development, with regards to all aspects of PILES, from young people to adulthood as well as gain a clear understanding of the different factors that affect growth and development throughout the 3 stated life stages.Students must understand the ageing process, with regards to all aspects of PIES and demonstrate a clear understanding on the change of role in life through this life stage.Students must know which medical conditions may affect progress through the life stages and explain a range of both birth and non-birth medical conditions.Students must be able to create support plans and to communicate this information clearly, sensitively and appropriately to different audiences.**RO21 –Essential Values of Care**Students must understand what the rights of individuals are, how to support individuals to maintain their rights and why it is important to do so.Students must understand the importance of the values of care and how they are applied in health settings, social care settings and early years settings.  |
| **Half term 2** | **RO25 - Understanding Life Stages** Students must understand the ageing process, with regards to all aspects of PIES and demonstrate a clear understanding on the change of role in life through this life stage. |
| **Christmas** |
| **Half term 3** | **RO25 - Understanding Life Stages** Students must know which medical conditions may affect progress through the life stages and explain a range of both birth and non-birth medical conditions. | **RO22 – Communication and working with individuals in health, social care and early years setting**Students must understand how to communicate effectively. Students must understand the personal qualities that contribute to effective care.Students must be able to communicate effectively within a health, social care and early years setting. **RO21 –Essential Values of Care**Students will continue to learn and understand the importance of the values of care and how they are applied in health settings, social care settings and early years settings.Students will begin to look at different legislations and how these impact on care settings.Students will begin to learn how personal hygiene, safety and security measures protect individuals.  |
| **Half term 4** | **RO25 - Understanding Life Stages** Students must be able to create support plans and to communicate this information clearly, sensitively and appropriately to different audiences. |
| **Easter** |
| **Half term 5** | **RO23 – Understanding Body Systems** * Cardiovascular system
* Respiratory system
* Digestive system

Students must know how the three different body systems work and understand the disorders that affect them. Students will be taught how to measure health using 3 different methods relating to the different body systems. | Students will revise for their external examination through a variety of techniques, including - but not exclusively, past paper questions, note taking, group activities etc. |
| **Half term 6** | **RO23 – Understanding Body Systems** Students will measure body rates and interpret results.**RO22 – Communication and working with individuals in health, social care and early years settings**Students must understand how to communicate effectively. |   |

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| **GCSE Food Preparation and Nutrition** |
|   | **Year 10** |  **Year 11** |
| **Half term 1** | Macronutrients: protein. Definition, role, function, sources, dietary reference values, consequences of malnutrition. | Complete NEA 1Practical revision tasks into a range of foods including bread, cakes and pastry.  Revision of food, nutrition and health and food choice.  |
| **Half term 2** | Macronutrients: fats, carbohydrates, fibre. Definition, role, function, sources, dietary reference values, consequences of malnutrition.Micronutrients: fat soluble vitamins, water soluble vitamins, minerals.In addition, in half-terms 1 and 2 the following skills and techniques will be addressed:* Prepare, combine and shape
* Tenderise and marinate
* Select and adjust a cooking process
* Water based methods of using the hob
* Dry heat and fat based methods of using the hob
* Using the grill
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| **Christmas** |
| **Half term3** |  Nutritional needs and health |  NEA task 2 Revision of food science  |
| **Half term 4** |  Diet related health conditions |
| **Easter** |
| **Half term 5** |  Cultural, religious and moral food choices |  Revision of food safety and food provenance.Exam technique and revision skills.  |
| **Half term 6** |  Exam preparations and revision |   |

**Key Stage 5**

Students can opt to study the following courses in years 12 and 13:

* A-level Product Design
* Cambridge Technical Extended Certificate Level 3 in Health and Social Care

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| **A-level Product Design** |
|   | **Year 12** |  **Year 13** |
| **Half term 1** | * Materials and their applications
* Performance characteristics of materials
* Recap basic workshop skills
* Programming microcontrollers
* 3D CAD and 3D printing
* Low temperature casting
 | * Design processes
* Critical analysis and evaluation
* Selecting appropriate tools, equipment and processes
* Feasibility studies
* NEA section A and B - complete
* NEA section C - start
 |
| **Half term 2** | * Performance characteristics of materials
* Design methods and processes
* Design theory
* Design and make task - iterative design and modelling
 | * Enterprise and marketing in the development of products
* Responsible design
* National and international standards in product design
* Requirements for product design and development
* NEA section C - complete
 |
| **Christmas** |
| **Half term3** | * Design processes
* Accuracy in design and manufacture
* Engineering processes for forming, fabrication and addition
 | * Design for manufacture and project management
* Design for manufacture, maintenance, repair and disposal
* NEA section D - start
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| **Half term 4** | * Forming, redistribution and addition processes
* The use of finishes
* Polymer processes
* Laminating and bending timber-based materials
 | * Health and safety
* Protecting designs and intellectual property
* Digital design and manufacture
* NEA complete all sections
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| **Easter** |
| **Half term 5** | * How technology and cultural change can impact on the work of designers
* Selecting appropriate tools, equipment and processes
* Design communication
* Introduction to NEA - discussion of contexts
 | * Revision and exam preparation
 |
| **Half term 6** | * Critical analysis and evaluation
* Modern industrial and commercial practice
* NEA section A
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| **Cambridge Technical Extended Certificate Level 3 in Health and Social Care** |
| **Year 12** |  **Year 13** |
|  **Sexual health, reproduction and early development stages*** Sexual health and contraception
* The importance of prenatal health and the process of conception
* The factors which could affect health in pregnancy and the success of the birth
* The stages of pregnancy and birth and the postnatal care of the mother
* The care and development of the baby in the first year of life

**This is a 60GLH unit; therefore this unit will be delivered throughout Year 12 in 1 single period per week.** | **Nutrition for Health*** Nutritional and diet guidelines
* The functions of nutrients
* The factors which influence nutritional health
* How to make recommendations to improve nutritional health

 **This is a 30GLH unit; therefore, this unit will be delivered throughout the autumn term of Year 13 in a double period per week.** |
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| **Anatomy and Physiology*** The cardiovascular system, malfunctions and their impact on individuals
* The respiratory system, malfunctions and their impact on individuals
* The digestive system, malfunctions and their impact on individuals
* The muscular-skeletal system, malfunctions and their impact on individuals
* The control and regulatory systems, malfunctions and their impact on individuals

**This is a 90GLH unit; therefore this unit will be delivered throughout Year 12 in 1 double period per week.** | **Building Positive Relationships*** The different types of relationships in health, social care or childcare environments
* The factors that influence the building of relationships
* How a person-centred approach builds positive relationships in health, social care or childcare environments
* How to use communication skills effectively to build positive relationships in a health, social are or childcare environment

 **This is a 60GLH unit; therefore this unit will be delivered throughout Year 13 in a double period per week.** |
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| **Equality, Diversity and Rights** * Concepts of equality, diversity and rights and how these are applied in the context of health, social care and childcare environments
* The impact of discriminatory practices on individuals in health, social care and childcare environments
* How current legislation and national initiatives promote anti-discriminatory practice in health, social care and child care environments
* How equality, diversity and rights in health, social care and childcare environments are promoted.

**This is a 60GLH unit; therefore, this unit will be delivered throughout Year 12 in 1 double period per week.** | **Health, Safety and Security in Health and Social Care*** The potential hazards in health, social care and childcare environments
* How legislation, policies and procedures promote health, safety and security in health, social care and childcare environments
* The roles and responsibilities involved in health, safety and security in health, social care and childcare environments
* How to respond to incidents and emergencies in a health, social care or childcare environment

 **This is a 60GLH unit; therefore, this unit will be delivered throughout the spring (and part of summer) term of Year 13.** |
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