Design and Technology – Curriculum Overview 2021- 22

Intent:

The D&T departmental pedagogy at SMWCA is inspired by several approaches and concepts namely:

'*Making Every Lesson Count*' : Excellence and growth = calculated effort + great teaching.

'*Kaizen – Work Smarter Not Harder*' : Kaizen is a daily process, the purpose of which goes beyond simple productivity improvement. It is also a process that, when done correctly, humanizes the work environment, eliminates overly hard work (*muri*), and teaches people how to constantly analyse the processes and input applied to work in order to make continuous improvement and increased productivity. The Toyota Way

'The Learning Rainforest – Great Teaching in real classrooms' : a powerful vision of how education can transform lives, even in the most challenging settings. Tom Sherringham.

'Principles of Instruction' – The use of cognitive science and guiding principles to enhance pedagogy and produce more effective teaching. Barak Rosenshine.

A St. Margaret Ward student who studies Design and Technology from Year 7 through to Year 11 should be a confident and independent learner who aspires to be the best they can be without limitations. They should be highly creative thinkers, explorative navigators of possible content and inclusive of iterative processes through their designing and practical outcomes. Our students should work smarter, think bigger and aim higher in all of their work outcomes and will be the next generation of creators and innovators for the future.

Year 11 Contents table:

Term / Subject	Food	Product Design	Graphics	Electronics
1a	*Unit 2 – C/A Internal Assessment practice piece.*	*NEA tasks – Completion of planning and Research.*	*Unit 3 – LO2 Final Design ideas.*	*NEA Section 1 (Research) and 2 (Designing).*
1b	*Unit 2 – C/A Internal Assessment practice piece and commencement of Actual Assessment piece.*	*NEA tasks – Practical (Making).*	*Unit 3 – LO3 Review and Evaluation.*	*NEA Section 3 – Practical (Making).*
2a	*Unit 2 – C/A internal Assessment piece – LO1, LO2, LO3.*	*NEA tasks – Evaluation.*	*Unit 4 – Graphics Portfolio – LO1, LO2 & LO3.*	*NEA section 4 – Evaluation.* *Unit 1 (exam) Mastery.*
2b	*Unit 1 – Revision in preparation of External examination – LO1, LO2, LO3, LO4, LO5.*	*Revision – in preparation of the external examination - forces, mechanisms, material selection, material properties*	*Unit 4 – Graphics Portfolio – LO1, LO2 & LO3.*	*Unit 1 (exam) Mastery sessions for concepts including: mechanisms, material selection, material properties,*

				programming microcontrollers, and developing design skills
3a	*Unit 1 – Revision in preparation of External examination – LO1, LO2, LO3, LO4, LO5.*	*Revision* - social, *cultural and environmental implications of technology*	*Revision – External 10 hour exam – exam window open late May – June.*	*Final preparation for the unit 1 exam: Social, cultural and environmental implications of technology, and further development of general skills.*
3b	*N/A – Completion of all courses.*	*N/A – Completion of all courses.*	*N/A – Completion of all courses.*	*N/A – Completion of all courses.*

Unit Year 11	
Autumn Term 1a	Term 1b
7 weeks **Food** ***WJEC Level 1&2 Hospitality and Catering*** ***Unit 2 – Hospitality and Catering in Action (Internal)*** *Controlled Assessment Practice piece.* Students complete: **LO1: Understand the importance of nutrition when planning menus -** AC1.1. AC1.2. AC1.3 & AC1.4. **LO2: Understand menu planning -** A.C.2.1. AC2.2. AC2.3 & AC2.4. **LO3: Be able to cook dishes** AC3.1. AC3.2. AC3.3. AC3.4. AC3.5. Within a practice task set by the exam board and in controlled conditions. **Product Design** Students will continue working on their NEA that they started in Y10. Complete research section and their design ideas. They will already have chosen	***7 weeks*** **Food** ***3 weeks*** ***WJEC Level 1&2 Hospitality and Catering*** ***Unit 2 – Hospitality and Catering in Action (Internal)*** *Controlled Assessment Practice piece.* Students complete: **LO1: Understand the importance of nutrition when planning menus -** AC1.1. AC1.2. AC1.3 & AC1.4. **LO2: Understand menu planning -** AC.2.1. AC2.2. AC2.3 & AC2.4. **LO3: Be able to cook dishes -** AC3.1. AC3.2. AC3.3. AC3.4. AC3.5. Within a practice task set by the exam board and in controlled conditions. ***4 weeks*** Students are set the **brief** in order to complete planning for their controlled assessment piece which will start in the Spring term and will include: **LO1: Understand the importance of nutrition when planning menus -** AC1.1. AC1.2. AC1.3 & AC1.4. **LO2: Understand menu planning -** AC.2.1. AC2.2. AC2.3 & AC2.4. **LO3: Be able to cook dishes -** AC3.1. AC3.2. AC3.3. AC3.4. AC3.5. **Product Design** Students complete the making section of their NEA. This must be completed independently, with appropriate support for health & safety.

the context offered by the exam board and begun planning in Year 10 term 3b. **Graphics** Unit 03 delivery cont'd (LO2)**:** The students will produce their final graphic design idea, they must demonstrate technical skills and effective use of resources. Students should refine and fully develop one of their ideas from LO1 to a final design. In this section, students are not required to produce or mock up a graphic product. **Electronics** *NEA section 1 & 2* Students complete sections 1 (research) and 2 (designing) of their official GCSE NEA. They will already have decided upon the context and begun planning in Year 10 term 3b.	**Graphics** Unit 03 delivery cont'd (LO3): The student should review how they met the brief including an evaluation relating to the final outcome, the purpose and impact of the graphic design. This also must highlight their effective use of resources with the addition of what went well and not so well. This skills developed within the evaluation of Unit 1 (LO3) will assist in the documentation and analysis relating to this objective. **Electronics** *NEA section 3* Students complete section 3 (making) of their official GCSE NEA. They will already have finalised a design at the end of Year 11 term 1a. This must be completed independently, with appropriate support for health & safety.
Spring Term 2a	Term 2b
6 weeks **Food** ***WJEC Level 1&2 Hospitality and Catering*** ***Unit 2 – Hospitality and Catering in Action (Internal)*** *Controlled Assessment piece* ***(9 Hours)*** Students complete: **LO1: Understand the importance of nutrition when planning menus -** AC1.1. AC1.2. AC1.3 & AC1.4. **LO2: Understand menu planning -** AC.2.1. AC2.2. AC2.3 & AC2.4. **LO3: Be able to cook dishes -** AC3.1. AC3.2. AC3.3. AC3.4. AC3.5. Within an actual task set by the exam board and in controlled conditions.	***6 weeks*** **Food** ***WJEC Level 1&2 Hospitality and Catering*** ***Unit 1 – The Hospitality & Catering Industry (External)*** *Revision for External Assessment* Students cover: **LO1: Understand the environment in which hospitality and catering providers operate -** AC1.1. AC1.2. AC1.3. AC1.4. **LO2: Understand how hospitality and catering provisions operate -** AC2.1. AC2.2. AC2.3. **LO3: Understand how hospitality and catering provision meets health and safety requirements -** AC3.1. AC3.2. AC3.3. **LO4: Know how food can cause ill health -** AC4.1. AC4.2. AC4.3. AC4.4. AC4.5. **LO5: Be able to propose a hospitality and catering provision to meet specific requirements -** AC5.1. AC5.2. Students will learn and apply content holistically through a range of scenarios inclusive of the Hospitality and Catering Industry context.

Product Design Students complete the Evaluation section of their NEA. Their product should be manufactured by now and they will review/suggest improvements. Once the NEA is finished we will focus on revising theory for the exam **Graphics** Begin delivering Unit 04 Graphic design portfolio (LO1-3). Students will use their creations from previous Units to generate a portfolio presenting their finalized outcomes. A Class discussion regarding 'How Graphic Designers present their outcomes'. Students to Prepare for External Exam 1st attempt. Exam Window: 10/02/2020-06/03/2020 **Electronics** *NEA section 4 / unit 1 (exam) mastery* Students complete section 4 (evaluation) of their official GCSE NEA. They will already have finished making their product in Year 11 term 1b. Once complete, students will begin mastery sessions focusing on systems components and circuit design.	**Product Design** Students will prepare for their exam by studying mastery sessions for concepts including: forces, mechanisms, material selection, material properties. Past exam papers/mocks will be completed **Graphics** Students will complete Unit 4 ready for internal moderation and submission of grades onto the portal. Coursework Complete: (*External exam results will be received)* Organise preparation sessions for external exam 2nd attempt (For students who wish/are required to resist). **Electronics** *Unit 1 (exam) mastery* Students will prepare for their exam by studying mastery sessions for concepts including: mechanisms, material selection, material properties, programming microcontrollers, and developing design skills for the summer examination.
Summer Term 3a	Term 3b
3 weeks **Food** ***WJEC Level 1&2 Hospitality and Catering*** ***Unit 1 – The Hospitality & Catering Industry (External)*** *Revision for External Assessment* Students cover**:** **LO1: Understand the environment in which hospitality and catering providers operate -** AC1.1. AC1.2. AC1.3. AC1.4. **LO2: Understand how hospitality and catering provisions operate -** AC2.1. AC2.2. AC2.3. **LO3: Understand how hospitality and catering provision meets health and safety requirements -** AC3.1. AC3.2. AC3.3. **LO4: Know how food can cause ill health -** AC4.1. AC4.2. AC4.3. AC4.4. AC4.5. **LO5: Be able to propose a hospitality and catering provision to meet specific requirements -** AC5.1. AC5.2. Students will learn and apply content holistically through a range of scenarios inclusive of the Hospitality and Catering Industry context. This will	**N/A** *Courses complete* N/A – Students will have completed their course of study by term 3b.

assist them in subject specific revision alongside their revision strategies **Product Design** *Final preparation for the unit 1 exam* In preparation for their summer examination, students will look at the social, cultural and environmental implications of technology, and further develop general skills for their examination. **Graphics** *Coursework Complete* Students who are resitting the external exam will continue to prepare with use of practice papers sourced by NCFE. The external exam window will fall in May/June 2021. **Electronics** *Final preparation for the unit 1 exam* In preparation for their summer examination, students will look at the social, cultural and environmental implications of technology, and further develop general skills for their examination. GCSE Design & Technology: Systems Specialism examination is at the end of May.	

Implementation:
The delivery of all four strands of Design and Technology at Key Stage 4 is underpinned by specifications from each subject area i.e.

GCSE Design & Technology: Product Design - AQA
GCSE Design & Technology: Electronic products – Edexcel
Level 1 & 2 Vocational award: Hospitality & Catering - WJEC/Eduqas
Level 1 & 2 Technical award: Graphic Design – NCFE

Detailed schemes of learning guide Teaching and Learning and although comprehensive, are not completely prescriptive therefore may be changed dependent on pace, challenge and student outcomes.

Impact:
High stakes testing of acquired knowledge and progress will take place each half term through the use of summative STR marking. There will be 3 x assessments of theory work and 3 x assessments of practical work throughout the year. The use of MAP sheets will be used where relevant to give students localised and regular feedback.
Low stakes testing will be used as and when at the teacher's discretion and will utilise a simple set of criteria and a 4-16 point score in the teacher mark book i.e. in Food students will be measured on their utilisation of **hygiene** and **safety**, **independence** and **competency** using a 4 point score from excellent to unsatisfactory.
Progress will be measured over time; contributing to whole school policies on assessment and feedback to pupils and parents. The subject teacher/DLA will liaise to discuss individual pupil's performance; ensuring appropriate interventions are put into place. Students will sit 'mock exams' to test acquired and required knowledge. These high stakes and low stakes testing measures will be analysed and discussed

between the DLA and their line manager, within DT team meeting and through DLA - staff meetings in order to move student progress forward. Challenge and differentiation is a focus point for the department in order to ensure the curriculum is inclusive to all.

Year 10 Contents table:

Term / Subject	Food	Product Design	Graphics	Electronics
1a	*Hygiene and Safety & Practical tasks* *Unit 1 LO4 : Know how food can cause ill health* *Unit 1 LO3 : Understand how Hospitality and Catering meets Health and Safety requirements* *Unit 2 LO3 : Be able to cook dishes*	*Section 1 – Core technical principals.*	*Unit 1: Delivery of (LO1): Colour, Tone, Line, Composition, Typography and Imagery.*	*Unit 1 (CORE): Sustainability, environmental issues, energy generation.* *Unit 2 (NEA): Accessibility project to develop NEA skills.*
1b	*Scenario 1- Hospitality and Catering in a real world context & Practical tasks.* *Unit 1 LO2 : Understand how Hospitality and Catering provision operates* *Unit 2 LO3 : Be able to cook dishes*	*Section 1 – Core technical principals continued.*	*Unit 1 Delivery of (LO2): Experimentation with the Graphic design components in the production of hand rendered and manipulated outcomes.*	*Unit 1 (SYSTEMS): Properties of components.* *Unit 2 (NEA): Accessibility project to develop NEA skills.*
2a	*Scenario 3- Hospitality and Catering in a real world context & Practical tasks.* *Unit 2 LO1 : Understand the importance of Nutrition when planning meals.* *LO3 : Be able to cook dishes.*	*Section B – Theoretical knowledge of technical principles – Materials and Working properties.*	*Unit 01 Delivery of (LO3): The students will review their graphic design experiments using key Graphic Design terminology.* *Unit 2: Delivery of (LO1): The students will understand the work of recognised graphic designers.*	*Mini NEA (preparation).*
2b	*Unit 2 – The Hospitality & Catering Industry. Menu planning and Practical tasks.* *Unit 2 : LO2 Understand menu planning.* *LO3 : Be able to cook dishes*	*Section B - Theoretical knowledge of technical principles – Mechanical devices including Levers, Pulleys and Rotary systems.*	*Unit 02 Delivery of (LO2): The students will produce a graphic design inspired by the work of a chosen graphic designer.*	*Mini NEA (preparation).*

3a	*Unit 1 – The Hospitality & Catering Industry. Condensed Revision for External Assessment (Revision for 1st Examination sitting). Unit 1 : LO1 Understand the environment in which Hospitality and Catering providers operate. LO2 Understand how Hospitality & Catering providers operate. Unit 2 LO3 : Be able to cook dishes.*	*NEA Preparation - Students will be led through the process of their NEA in preparation for a June start.*	*Unit 02 Delivery of (LO3): The students will review their graphic design and evaluate how their design reflects the work of the graphic designer.*	*Unit 1 (CORE): Properties of materials & material selection.*
3b	*Scenario 2- Hospitality and Catering in a real world context. Preparation for Unit 2 & Practical tasks – Revision for 1st (Unit 1) Examination sitting. Unit 1 : LO3 Understand how Hospitality provision meets Health and Safety requirements. LO5 Be able to propose a hospitality and catering provision to meet specific requirements. Unit 2 LO3 : Be able to cook dishes.*	*Students begin the research section of their official GCSE NEA.*	*Unit 03: Delivery of (LO1): The students will analyse the requirement of a Graphic Design Brief.*	*NEA section 1.*

Year 10	
Autumn Term 1a	Term 1b
7 weeks **Food** *Hygiene and Safety revisited:* ***Understand how Hospitality and Catering provision meets Health and Safety requirements.*** ***Know how food can cause ill health.*** *Be able to cook dishes.* Students will revisit Hygiene and Safety in the context of the Hospitality and Catering Industry. They will be taught more in-depth practice and will	***7 weeks*** **Food** *Scenario 1:* ***Understand how Hospitality and Catering provision operates.*** ***Be able to cook dishes.*** Students will be given a realistic scenario within the context of the Hospitality and Catering industry; which focuses on customer need, a gap in the market and employer/employee opportunity.

apply this to their work through theory and practical activities.	Each scenario covers a range of Learning Objectives and Assessment Criteria mainly from Unit 1. Practical tasks will consolidate theoretical learning and prepare students for Unit 2.
Product Design *Section 1 – Core technical principals.* Completing theory work covering a breadth of technical knowledge and understanding. This includes Sustainability, environmental issues, energy generation.	**Product Design** *Section 1 Continued – Core technical principals.* Completing theory work covering a breadth of technical knowledge and understanding. This includes methods of production, mass, batch, one off. FPT to help with this - Manufacturing Christmas decorations on a production line in the workshop
Graphics Course Induction: This will be based on previous experience the students have had in Year 9. It will provide a foundation for the course including the structure of the qualification and the assessment process. It will also help the students to develop an understanding of the assessment criteria, the range and the grading descriptors. They will be introduced to basic Graphics skills using ICT where appropriate. Unit 1: Begin Delivery (LO1): The student will show understanding of the components of graphic design. The learner must know about Colour, Tone, Line, Composition, Typography and Imagery. This will enhance the student's research skills where they will use various sources including books and the internet, with the addition of further developing their knowledge of Graphic Design components.	**Graphics** Unit 01 delivery cont'd (LO2): The students will experiment with the graphic design components producing a range of both hand rendered and manipulated outcomes. Students must demonstrate use of Colour, Tone, Line, Composition, Typography, Imagery. Experiments will explore the qualities, effects, properties etc of graphic design materials and techniques using graphic design components. The graphic design components will be shown in a variety of uses or applications. The student's experiments can take the form of mixed media, digital layouts, digital manipulation, swatches, montage, typographical layouts etc.
Electronics *Unit 1 (CORE): Sustainability, environmental issues, energy generation* Students will look at where materials are sourced from, how they can be sourced sustainably, and how they have an impact on the surrounding environment and population. They will look at how energy is generated. They will consider how a combination of all of these processes can and should have an impact on the design process. *Unit 2 (NEA): Accessibility project to develop NEA skills.* Students will complete a project over the half term where they design an electronic desk light with a feature that will support the needs of those with	**Electronics** *Unit 1 (SYSTEMS): Properties of components, microcontrollers, ethical implications of technology* Students will consider how to appropriately select components for circuits based on their properties by creating system block diagrams. They will learn how to program microcontrollers to create more complex tasks, and how microcontrollers have superseded logic gates. They will use a combination of this information to discuss the ethical implications of technology. *Unit 2 (NEA): Accessibility project to develop NEA skills.*

motor control difficulties. They will work through the research and design process, with consideration to the needs of the user.	Students will proceed through the making process, with focus on high quality finishes and appropriate casing for an electronic circuit.
Spring Term 2a	Term 2b
6 weeks **Food** *Scenario 3* ***Understand the importance of Nutrition when planning meals.*** ***Be able to cook dishes.*** Students will be given a realistic scenario within the context of the Hospitality and Catering industry; which focuses on customer need, a gap in the market and employer/employee opportunity. Each scenario covers a range of Learning Objectives and Assessment Criteria mainly from Unit 1. Practical tasks will consolidate theoretical learning and prepare students for Unit 2. **Product Design** Section B – Theory work to cover more in Depth knowledge of technical principles. Students will study materials and their working properties. **Graphics** Unit 01 delivery cont'd (LO3): The students will review their graphic design experiments using key Graphic Design terminology (displays are visible in the classroom). The learner must evaluate the visual impact of their experiments and the choices made during their experiments. This does not have to be written as one outcome, but can be separated and completed in connection with each of the students developed experiments. Students will review the choices they made when selecting and applying tools, materials and techniques, when experimenting with graphic design components. They will explain how the preceding experiments and their design intentions influence their choices. Unit 2: Begin Delivery (LO1): The students will understand the work of recognised graphic designers. This will further develop the student's research skills using techniques practiced in LO1 of	***6 weeks*** **Food** ***WJEC Level 1&2 Hospitality and Catering*** ***Unit 2 – The Hospitality & Catering Industry (Internal)*** ***Understand menu planning.*** ***Be able to cook dishes.*** *Students will analyse, synthesise and provide solutions for a range of factors affecting menu planning.* **Product Design** Section B – Students continue to cover theory work focusing on an in depth knowledge of technical principles. Students will study mechanical devices including levers, pulleys and rotary systems **Graphics** Unit 02 delivery cont'd (LO2): The students will produce a graphic design inspired by the work of a chosen graphic designer researched in LO1 of Unit 2. Students must demonstrate use of technical skills, processes, techniques, equipment, material and composition. Taking the graphic designer they chose in LO1, students will create their own graphic design inspired by that designer's work. They may look at or use components from more than one piece by the chosen graphic designer. The emphasis is to demonstrate successful application of technical skills in relation to graphic design components.

Unit 1. Students must know about examples of design practice in a chosen discipline recognised graphic designers in a chosen discipline and the characteristics of design practice **Electronics** *Mini NEA (preparation)* Students will be led through the process of their NEA in preparation for a June start. This will be done using the design contexts set by Edexcel in the previous year. Students will consider how to appropriately select a context and how to conduct research to aid them in designing creatively. They will begin designing.	**Electronics** *Mini NEA (preparation)* Students will continue learning the process of their NEA by developing their design skills. They will develop design ideas for their chosen theme and create a model/prototype of their chosen design. This will help them to understand possible pitfalls that they may face when they begin their real NEA in June, and give them the opportunity to further develop skills such as designing and modelling.
Summer Term 3a	Term 3b
6 weeks **Food** ***Understand the environment in which Hospitality and Catering providers operate.*** ***Understand how Hospitality and Catering provision operates.*** ***Be able to cook dishes.*** ***WJEC Level 1&2 Hospitality and Catering*** ***Unit 1 – The Hospitality & Catering Industry (External)*** *Condensed Revision for External Assessment* Students cover: **LO1: Understand the environment in which hospitality and catering providers operate -** AC1.1. AC1.2. AC1.3. AC1.4. **LO2: Understand how hospitality and catering provisions operate -** AC2.1. AC2.2. AC2.3. **LO3: Understand how hospitality and catering provision meets health and safety requirements -** AC3.1. AC3.2. AC3.3. **LO4: Know how food can cause ill health -** AC4.1. AC4.2. AC4.3. AC4.4. AC4.5. **LO5: Be able to propose a hospitality and catering provision to meet specific requirements -** AC5.1. AC5.2. In preparation for their exam in June 2020. **Product Design** NEA Preparation - Students will be led through the process of their NEA in preparation for a June start. This will be done using the design contexts set by AQA in the previous year. Students will consider	***7 weeks*** **Food** *Scenario 2* ***Understand how Hospitality and Catering provision meets Health and Safety requirements.*** ***Be able to cook dishes.*** Students will be given a realistic scenario within the context of the Hospitality and Catering industry; which focuses on customer need, a gap in the market and employer/employee opportunity. Each scenario covers a range of Learning Objectives and Assessment Criteria mainly from Unit 1. Practical tasks will consolidate theoretical learning and prepare students for Unit 2. **Product Design** Students begin the research section of their official GCSE NEA. They will be provided with a selection of official design context from the exam board (AQA) on June 1st and will begin their project by selecting

how to appropriately select a context and how to conduct research to aid them in designing creatively. They will begin designing.	their chosen theme for the rest of the project. They will conduct some market research in order to prepare themselves for designing in Year 11 Term 1a.
Graphics Unit 02 delivery cont'd (LO3): The student will review their graphic design and evaluate how their design reflects the work of the graphic designer including what technical skills the student has explored and their use of graphic design components, finalizing with ways of improving. In this LO students will show understanding through a review of their work focusing on the following: how their design reflects the work of the graphic designer/their technical skills/their use of graphic design components/ways of improving.	**Graphics** Unit 03: Begin delivery (LO1): The students will analyse the requirement of a graphic design brief provided by the subject teacher. They will understand the requirements and develop some possible ideas to meet the brief. Students will further develop an idea and present their final graphic design. Finally, they will analyse their work and review how they have met the brief. The student will understand the requirements of a graphic design brief. The learner must know how to respond to a brief and develop ideas. Begin External Exam preparation looking at practice papers (1 of 5 lessons per 2 weeks).
Electronics *Unit 1 (CORE): Properties of materials & material selection* Students will look at the properties of a variety of materials including textiles, metal, plastic, timber, and smart materials. They will learn to understand what is meant by a 'property', and how the properties of materials allow us to select the best possible material for a chosen product. They will look at how to write this in more depth, such as to answer a long answer question in the exam.	**Electronics** *NEA section 1* Students begin section 1 (research) of their official GCSE NEA. They will be provided with a selection of official design context from the exam board (Edexcel) on June 1st and will begin their project by selecting their chosen theme for the rest of the project. They will conduct some market research in order to prepare themselves for designing in Year 11 Term 1a.

Implementation:
The delivery of all four strands of Design and Technology at Key Stage 3 is underpinned by the National Curriculum programmes of study for D&T. The D&T department have utilised the guidance in these programmes of study to devise a 'mastery curriculum' where students aim to achieve 'milestones' at varying levels over the course of their study:

Key Stage 3 D&T Milestones:

- *Can complete a range of Creative and Practical activities.*
- *Can use Iterative processes.*
- *Can use a range of Domestic, Local and Industrial contexts.*
- *Can incorporate Designing and Making into work.*
- *Can give reference to and incorporate Different Cultures.*
- *Can understand User Needs.*
- *Can solve Design Problems.*
- *Can Reformulate Problems.*
- *Produces Innovative, Functioning and Appealing products.*
- *Can use a variety of Approaches.*
- *Can incorporate Biomimicry.*

Detailed schemes of learning guide Teaching and Learning and although comprehensive, are not completely prescriptive and may be changed dependent on pace, challenge and student outcomes. Students are issued with a self-contained booklet for each D&T strand and most (although not all) theory work will be completed within these documents; therefore providing evidence of output and acquired knowledge whilst also showing progress (see below).

Impact:
High stakes testing of acquired knowledge and progress will take place approximately each term through the use of summative STR marking and an Internal examination. There will be 1 x STR assessment of theory work and 1 x STR assessment of practical work throughout the year. The use of MAP sheets will be used where relevant to give students localised and regular feedback.
Low stakes testing will be used as and when at the teacher's discretion and will utilise a simple set of criteria and a 4-16 point score in the teacher mark book i.e. in Food students will be measured on their utilisation of **hygiene** and **safety**, **independence** and **competency** using a 4 point score from excellent to unsatisfactory.
Progress will be measured over time; contributing to whole school policies on assessment and feedback to pupils and parents. The student's progress in relation to the milestones achieved will be documented in their workbook and will show progress over time. Students work outcomes will provide the basis for analysis and intervention where appropriate and necessary; providing every student with the opportunity to be the best they can be. Challenge and differentiation is a focus point for the department in order to ensure the curriculum is inclusive to all.

Year 9 Contents table:

Term / Subject	Food	Product Design	Graphics	Electronics
1a	*Hygiene and Safety*	*Health and Safety and an introduction to tools and equipment.*	*What is Graphic Design? An introduction.*	*Mini project – Audio Amplifier. Design and Research.*
1b	*Commodities, Functions and Skills*	*Mini project – 'Plastic Fantastic'.*	*Graphics Skills leading to a Design Specification.*	*Mini project – Audio Amplifier. Final Design.*
2a	*Customer acceptability including Organoleptic descriptors, Portion control, Healthy eating and other external factors.*	*Using the Laser cutter and Engraver. CAD and 2D Design.*	*Terminology used in Graphics and how to respond to a Design Brief.*	*Mini project – Audio Amplifier. Production of Final Design – Internal Circuit.*
2b	*Food dishes from different cultures.*	*Using the Laser cutter and Engraver. CAD and 2D Design.*	*Presentational skills and how Graphic Designers present to clients.*	*Mini project – Audio Amplifier. Production of Final Design – Casing.*
3a	*Nutritional health & Special diets.*	*3D Modelling and CAD software.*	*Presentation Skills used to produce a Creative Portfolio.*	*Standalone Unit – Programming project.*
3b	*The world of work – The Hospitality and Catering Industry.*	*3D Printing and the production of a 3D product.*	*Utilisation of a range of Graphics applications to produce a Creative Portfolio.*	*Standalone Unit – New and Immerging Technologies.*

Year 9

Autumn Term 1a	Term 1b
7 weeks **Food** *Hygiene and Safety* Students will be taught concepts of Hygiene and Safety: • Basic Hygiene and Safety. • Industrial standards. • Risk Assessments and HACCP. • Equipment safety and effective use. • Food related causes of ill health. • The role of the EHO. They will complete a range of activities to show evidence of their knowledge in these areas. Students will complete a range of practical activities which focus on their theoretical knowledge base and put these into practice.	***7 weeks*** **Food** *Commodities, Functions & Skills* Students will be taught the concepts of commodities, functions and skills: • Commodities – where does our food come from? • The Functions and Properties of Commodities. • Skills and how to incorporate these within practical tasks. They will complete a range of activities to show evidence of their knowledge in these areas. Students will complete a range of practical activities which focus on their theoretical knowledge base and put these into practice

Product Design Start of a skills based year focusing on mini projects teaching them about manufacturing processes, material properties while also focusing on health and safety in the workshop. Starting with health and safety recap and introduction to new tools and equipment Start of the Plastic Fantastic Pen project (Working for Amazon to design a promotional product) - covering lamination, acrylic, bonding and vacuum forming.	**Product Design** Continue and finish the Pen project. Focus on material properties of various plastics and the use of the vacuum forming machine. Include theory based around different production methods. One off, batch, mass production, continuous production.
Graphics What is Graphic Design? Why is Graphic Design important within D&T? Throughout the Autumn term: • Discussion and introduction to the Graphic Design Components and how they can be implemented into a generated outcome. • Introduction to hand rendering techniques and the development of skills using a range of traditional materials. • Introduction to Digital Manipulation using Photoshop, how you can further develop hand rendered outcomes using a range of digital tools and software filters. (The introduction to both hand rendering and digital manipulation will be in the form of a mini project focusing on both contextual knowledge and practical skills).	**Graphics** What is Graphic Design? Why is Graphic Design important within D&T? Throughout the Autumn term: • Discussion and introduction to the Graphic Design Components and how they can be implemented into a generated outcome. • Introduction to hand rendering techniques and the development of skills using a range of traditional materials. • Introduction to Digital Manipulation using Photoshop, how you can further develop hand rendered outcomes using a range of digital tools and software filters. (The introduction to both hand rendering and digital manipulation will be in the form of a mini project focusing on both contextual knowledge and practical skills).
Electronics Students will begin a project that is designed to represent a Non-Examined Assessment. This will give students an idea of the coursework project they may complete in Year 10 and 11 in Design and Technology (if chosen). The design project is to produce an audio amplifier that could be plugged in to a phone or similar device. In term 1a, they will look at: • Design context, including consideration of the target market and design brief. • Analysis of existing products. • Research into existing and suitable materials. A design specification so that they are ready to start designing in the next half term.	**Electronics** In this half term, students will develop a final design for their audio amplifier by considering how the various parts of the design process combine together to form iterative design. This will include: • A variety of creative initial design ideas. • Modelling. • Development into a final design. • Using a variety of forms of communication. Developing knowledge of key words and vocabulary for annotation.

Spring Term 2a	Term 2b
6 weeks **Food** *Customer acceptability including Organoleptic descriptors, Portion control, Healthy eating and other external factors.* Students will be taught the concept of customer acceptability and the factors which affect these preferences: • Sensory/environmental/cultural and costing factors affecting food choice. • Organoleptic factors and customer preference. • Healthy eating and the Eat well plate. They will complete a range of activities to show evidence of their knowledge in these areas. Students will complete a range of practical activities which focus on their theoretical knowledge base and put these into practice. **Product Design** Focus – Laser Cutter / Engraver. CAD – 2D design software. This will include various FPTs covering the skills needed to use the 2D design software to a high level. Students will work through various tutorials and create their own laser cut/engraved product **Graphics** To understand terminology used in the Graphic Design Industry. How to respond a project brief? How do you incorporate client's values within your outcomes? Why and how Graphic Design Components can be used to edit/enhance your experiments? Throughout the Spring Term: • Students will be provided with a detailed project brief, learners should develop skills on how to unpick relevant information and key terminology that will provide support in the development stages • Learners will discuss and investigate the different between 'Initial Designs/Developments and Final Outcomes' • Students will be introduced to reflective documentation. This includes: How to	***6 weeks*** **Food** *Food dishes from different cultures.* Students will be taught the concept of multicultural food design with a focus on dishes from a range of cultures: • Designing multicultural meals for menus. • Consideration of cultural food preference when designing menus. • Consideration and application of a specific scenario or brief. They will complete a range of activities to show evidence of their knowledge in these areas. Students will complete a range of practical activities which focus on their theoretical knowledge base and put these into practice. They will also design a final dish in context of the scenario set and will complete a final assessed practical to produce the dish. **Product Design** *Continuation of the CAD/CAM theory* - The students will learn how to transfer/convert files and how to operate the laser cutter. They will make various products throughout. We will also look at different joining methods available through laser cutting. Finger joints/ natural hinges. **Graphics** To understand terminology used in the Graphic Design Industry. How to respond a project brief? How do you incorporate client's values within your outcomes? Why and how Graphic Design Components can be used to edit/enhance your experiments? Throughout the Spring Term: • Students will be provided with a detailed project brief, learners should develop skills on how to unpick relevant information and key terminology that will provide support in the development stages • Learners will discuss and investigate the different between 'Initial Designs/Developments and Final Outcomes' • Students will be introduced to reflective documentation. This includes: How to

communicate your process of making using Graphic Design Terminology/The importance of forming a connection between the requirements of the brief and their experiments/Peer & Self-assessment and how this can be clearly recorded/To show the students understanding of <u>why</u> they have used a particular technique in their presentation of designs (Traditional techniques/Digital Manipulation). • Students will be introduced to Collaborative working, how this can change the way they produce outcomes (e.g. how to share the responsibility and share control in the development stages) • An introduction to presentational skills and how Graphic Designers present their final outcomes to their client in a creative format (this could include PowerPoint or creative portfolio) **Electronics** Students will physically create their product (the internal circuit), including: • Techniques for high quality soldering. • How to minimise errors while working, and identify correct polarity. • Techniques for fault-finding when soldering - how to identify and repair any errors made on a circuit board. They will model and consider how to create the physical case so that it is both aesthetically appealing but also safe for the user.	communicate your process of making using Graphic Design Terminology/The importance of forming a connection between the requirements of the brief and their experiments/Peer & Self-assessment and how this can be clearly recorded/To show the students understanding of <u>why</u> they have used a particular technique in their presentation of designs (Traditional techniques/Digital Manipulation). • Students will be introduced to Collaborative working, how this can change the way they produce outcomes (e.g. how to share the responsibility and share control in the development stages) • An introduction to presentational skills and how Graphic Designers present their final outcomes to their client in a creative format (this could include PowerPoint or creative portfolio) **Electronics** Students will physically create their product (the physical case), including: • Consideration of the techniques used to cut, waste and mould materials. • Selection of the most appropriate tools and manufacturing processes. • Accurate use of the most suitable surface finish. Precise assembly of the electronic components with the finished case.
Summer Term 3a	Term 3b
6 weeks **Food** *Nutritional health & Special diets.* Students will be taught the concept of effective nutrition and the impact on health; they will consider governmental guidelines on nutrition and focus on healthy eating: • Nutritional guidelines linked to the Eat well plate. • Special diets and other factors affecting nutritional health. • Designing meals for a purpose or client. They will complete a range of activities to show evidence of their knowledge in these areas.	***7 weeks*** **Food** *The world of work – The Hospitality and Catering Industry.* Students will be taught the concept of 'the world of work' in context of the Hospitality and Catering industry: • Roles and responsibilities within the Hospitality & Catering industry. • Types of Establishment and how they operate. • Factors affecting the success of providers. They will complete a range of activities to show evidence of their knowledge in these areas.

Students will complete a range of practical activities which focus on their theoretical knowledge base and put these into practice. **Product Design** Introduction to 3D modelling – Students will follow a program of tutorials to learn how to 3D model using CAD software (currently TinkerCAD). They will also study the principals of 3D printing alongside this. **Graphics** Develop skills and knowledge regarding presentation skills through the production of a creative portfolio. • Students will, using the creative outcomes from both the mini project and their response to the project brief, create a creative portfolio to display their process of making and showcase their designs • Learners will investigate and analyse examples of presentational methods, both successful and unsuccessful attempts to generate and develop good practice • Students will explore various presentational formats, including PowerPoint/Creative Folder/ Image slideshow etc. • Learners will select their chosen presentational format, working both collaboratively with their peers and through the investigation of existing portfolios (I will show the learners mine), they will produce a Creative Portfolio mirroring the quality/presentation of ones produced within the Graphic Design Industry. **Electronics** Standalone lessons as part of a 5 week programming project. This helps students to learn: • The role of sensors in electronic systems. • The role of switches in electronic systems. • The use of control devices and components. • The role of outputs in electronic systems. • How to process and respond to inputs. How to use routines to control outputs with delays, loops and counts.	Students will complete a range of practical activities which focus on their theoretical knowledge base and put these into practice. **Product Design** *3D Printing* – Students to study the process and understand how various 3D printers work. What is the benefit to society? They will learn how to operate the 3D printer on their own and they will print at least 1 3D object that they have modelled themselves. **Graphics** Develop skills and knowledge regarding presentation skills through the production of a creative portfolio. • Students will, using the creative outcomes from both the mini project and their response to the project brief, create a creative portfolio to display their process of making and showcase their designs • Learners will investigate and analyse examples of presentational methods, both successful and unsuccessful attempts to generate and develop good practice • Students will explore various presentational formats, including PowerPoint/Creative Folder/ Image slideshow etc. • Learners will select their chosen presentational format, working both collaboratively with their peers and through the investigation of existing portfolios (I will show the learners mine), they will produce a Creative Portfolio mirroring the quality/presentation of ones produced within the Graphic Design Industry. **Electronics** Standalone lessons that consider the impact of new and emerging technology on the world around us. This will include three aspects: 1. An ethics investigation that will consider industry, enterprise, people, culture and society. 2. A look at how modern technology impact sustainability & the environment, and how designers can try to mitigate the impact of this.

	How we can use mechanisms such as levers, linkages, cams, followers, pulleys & belts. A look at the types of movement including linear, reciprocation, rotary and oscillation.

Implementation:
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- *Can use a range of Domestic, Local and Industrial contexts.*
- *Can incorporate Designing and Making into work.*
- *Can give reference to and incorporate Different Cultures.*
- *Can understand User Needs.*
- *Can solve Design Problems.*
- *Can Reformulate Problems.*
- *Produces Innovative, Functioning and Appealing products.*
- *Can use a variety of Approaches.*
- *Can incorporate Biomimicry.*

Detailed schemes of learning guide Teaching and Learning and although comprehensive, are not completely prescriptive and may be changed dependent on pace, challenge and student outcomes. Students are issued with a self-contained booklet for each D&T strand and most (although not all) theory work will be completed within these documents; therefore providing evidence of output and acquired knowledge whilst also showing progress (see below).

Impact:
High stakes testing of acquired knowledge and progress will take place approximately each term through the use of summative STR marking and an Internal examination. There will be 1 x STR assessment of theory work and 1 x STR assessment of practical work throughout the year. The use of MAP sheets will be used where relevant to give students localised and regular feedback.
Low stakes testing will be used as and when at the teacher's discretion and will utilise a simple set of criteria and a 4-16 point score in the teacher mark book i.e. in Food students will be measured on their utilisation of **hygiene** and **safety**, **independence** and **competency** using a 4 point score from excellent to unsatisfactory.
Progress will be measured over time; contributing to whole school policies on assessment and feedback to pupils and parents. The student's progress in relation to the milestones achieved will be documented in their workbook and will show progress over time. Students work outcomes will provide the basis for analysis and intervention where appropriate and necessary; providing every student with the opportunity to be the best they can be. Challenge and differentiation is a focus point for the department in order to ensure the curriculum is inclusive to all.

Year 8 Contents table:

Term / Subject	Food	Product Design	Graphics	Electronics
1a	*Hygiene and Safety*	*Health & Safety/Design brief/Research.*	*Design brief and key Components.*	*Health and Safety.*
1b	*Equipment, Processes and Skills.*	*Research and Generating design ideas.*	*Product disassembly.*	*Designing.*
2a	*Assessment and Evaluation.*	*Materials research.*	*Sketching and Hand Rendering techniques.*	*Soldering – including Health and Safety.*
2b	*Food Sources & Availability and Sensory/Organoleptic Evaluation.*	*Modelling.*	*Perspective drawing to construct 2D and 3D shapes.*	*Soldering – Quality Assurance.*
3a	*Assessment and Evaluation.*	*Practical lessons – Use of the Laser cutter and Coping saw.*	*Design stages: Initial and Final designs.*	*Vacuum forming including Health and Safety.*
3b	*Nutrition.*	*Assembly of product.*	*Final design and Evaluations.*	*Assembly/Quality Assurance/Evaluation.*

Year 8	
Autumn Term 1a	Term 1b
7 weeks **Food** *Hygiene and Safety* Pupils utilise the Food workbook to complete a range of **theory** activities around the theme of Hygiene & Safety. Pupils will complete **practical** work which allows them to implement Hygiene and Safety practices. *Practical's – 1. Cheese & Herb Scones* **Product Design** *Health & safety / design brief / research* Students will be introduced to the Product Design workshop and the various safety requirements. They will learn the importance of Product Design in society and they will produce their first design brief for a client (currently Argos). **Graphics** To explain the design brief and identify key components included within the design brief.	***7 weeks*** **Food** *Equipment, Processes and Skills* Pupils utilise the Food workbook to complete a range of **theory** activities around the themes of Equipment, Processes and Skills. Pupils will complete **practical** work which allows them to implement their knowledge of utilising Equipment, Processes and Skills. *Practical's – 2. Pastry (páte sucree)* *3. Apple pie* **Product Design** *Research and Generating design ideas* Students will continue with research for their project and learn techniques to help generate and develop design ideas. Drawing/Rendering skills will be covered as these are essential as they progress in design. **Graphics** Students will disassemble existing products and evaluate the layout and what has been included.

Introduction to the topic, including ground rules and Health and Safety. **Electronics** *Health & safety / designing* Students will be introduced to the Electronics workshop and the various safety requirements. They will begin to research and develop ideas for their nightlight project.	In addition to the layout , students will identify the labels on packaging, Explain what some labels mean and evaluate the use of labels on products. **Electronics** *Designing* Students will develop drawing and designing skills and will develop a range of creative designs for their nightlight. They will learn how to create a detailed design proposal from which they can make their product.
Spring Term 2a	Term 2b
6 weeks **Food** *Assessment and Evaluation* Pupils utilise the Food workbook to complete a range of **theory** activities around their STAR assessed work and through evaluation of prior work. Pupils will complete **practical** work which allows them to further their utilisation of Hygiene & Safety in practice, Independence and Competency. *Practical's – 4. Pasta Pomedoro* *5. Chocolate & Banana Muffins* **Product Design** Materials research – Students will study materials that they will be using for the product (Various woods and plastics). What properties do they have? Where do they come from? What makes them suitable for our product? They will then produce a final design fully annotated including measurements and materials (numeracy skills). **Graphics** Student will identify types of sketching techniques. In addition, learners will apply sketching techniques to a piece of work. Learners will explore different hand rendering techniques including identifying different types of grids and underlay's and how they can be used to assist/help in the design stages. Students will be introduced to perspective drawing. To identify what perspective drawing is, and complete simple 3D shape designs.	***6 weeks*** **Food** *Food Sources & Availability and Sensory/Organoleptic Evaluation* Pupils utilise the Food workbook to complete a range of **theory** activities focussing on where food ingredients are sourced, how ethically and sustainably they are sourced and how the senses are used to judge foods in relation to customer acceptability. Pupils will complete **practical** work which utilises the food ingredients. *Practical's – 6. Spicy Chicken Fajitas* **Product Design** Modelling – Students will learn to model their design ideas to eradicate any issues before they begin manufacture of their final product (Wall clock) They will produce a plan for manufacture. **Graphics** Learners will revisit 'perspective drawing' using more complex shapes including constructing complex 3D shapes. Students will be introduced to the importance of company logo's looking at a range of existing examples. Using the techniques developed in previous lessons, learners will design own logo for product. Once they have designed their logo for their product, leaners will create 3D sketches of initial ideas of types of packaging inclusive of logo design and packaging requirements. Also, to evaluate the effectiveness of packaging. **Electronics**

Electronics *Health & safety / soldering* Students will be introduced to the skills involved in soldering a circuit and will begin to develop their own circuit for the nightlight. They will learn how to identify components and place and solder them correctly.	*Soldering / quality assurance* Students will develop more complex soldering skills as their circuit progresses. They will learn how to 'fault find' a circuit by looking for problems, and will develop an eye for quality. They will understand why it's important for a circuit to be neat and accurate.
Summer Term 3a	Term 3b
6 weeks **Food** *Assessment and Evaluation* Pupils utilise the Food workbook to complete a range of **theory** activities around their STAR assessed work and through evaluation of prior work. Pupils will complete **practical** work which allows them to further their utilisation of Hygiene & Safety in practice, Independence and Competency. *Practical's – 7. Curry & Rice* *8. Bread & Butter pudding* **Product Design** Practical lessons – Laser Cutting / Coping saws Students will learn how to use machines and equipment safely and sensibly to manufacture their products. They will learn to work as a team and peer assess each other's work. **Graphics** Design Stages - Create ideas initial and final ideas for making prototypes. Students will be in a practical creating their prototype for their 3D designs. Students will develop time management to make sure work is completed in the allowed time. Finally, evaluate initial ideas. **Electronics** *Health & safety / vacuum forming* Students will learn how to use the vacuum former safely to create a case for their nightlight. They will learn to be cooperative and support others by working in alternating pairs. They will learn how to use knives safely and accurately.	***7 weeks*** **Food** *Nutrition* Pupils utilise the Food workbook to complete a range of **theory** activities which focus around effective nutrition and healthy eating. Pupils will complete **practical** work which allows them to consider effective nutrition in practice and to further their utilisation of Hygiene & Safety in practice, Independence and Competency. *Practical's – 9. Sweet & Sour & Noodles* **Product Design** *Assembly of product* – Students will learn the correct way to join and assemble products depending on the type of material used. Correct glues etc. Students will self-assess and peer assess each other's work and produce a short evaluation. **Graphics** Create final design for packaging and to evaluate through peer and self-assessment the successes of their creation and improvements that could be made if they did the project again. Students, once completed will complete a Leaflet to advertise their new product. **Electronics** *Assembly / quality assurance / evaluation* Students will assemble the case and the circuit together, and develop an eye for quality to ensure it has a high standard of finish. They will learn how to use suitable vocabulary to evaluate the finished product.

Implementation:
The delivery of all four strands of Design and Technology at Key Stage 3 is underpinned by the National Curriculum programmes of study for D&T. The D&T department have utilised the guidance in these programmes of study to devise a 'mastery curriculum' where students aim to achieve 'milestones' at varying levels over the course of their study:

Key Stage 3 D&T Milestones:

- *Can complete a range of Creative and Practical activities.*
- *Can use Iterative processes.*
- *Can use a range of Domestic, Local and Industrial contexts.*
- *Can incorporate Designing and Making into work.*
- *Can give reference to and incorporate Different Cultures.*
- *Can understand User Needs.*
- *Can solve Design Problems.*
- *Can Reformulate Problems.*
- *Produces Innovative, Functioning and Appealing products.*
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High stakes testing of acquired knowledge and progress will take place approximately each term through the use of summative STR marking and an Internal examination. There will be 1 x STR assessment of theory work and 1 x STR assessment of practical work throughout the year. The use of MAP sheets will be used where relevant to give students localised and regular feedback.
Low stakes testing will be used as and when at the teacher's discretion and will utilise a simple set of criteria and a 4-16 point score in the teacher mark book i.e. in Food students will be measured on their utilisation of **hygiene** and **safety**, **independence** and **competency** using a 4 point score from excellent to unsatisfactory.
Progress will be measured over time; contributing to whole school policies on assessment and feedback to pupils and parents. The student's progress in relation to the milestones achieved will be documented in their workbook and will show progress over time. Students work outcomes will provide the basis for analysis and intervention where appropriate and necessary; providing every student with the opportunity to be the best they can be. Challenge and differentiation is a focus point for the department in order to ensure the curriculum is inclusive to all.

Year 7 Contents table:

Term / Subject	Food	Product Design	Graphics	Electronics
1a	*Hygiene and Safety*	*Health & Safety/Design brief/Research.*	*Design brief and key Components.*	*Health and Safety.*
1b	*Equipment, Processes and Skills.*	*Research and Generating design ideas.*	*Product disassembly.*	*Designing.*
2a	*Assessment and Evaluation.*	*Materials research.*	*Sketching and Hand Rendering techniques.*	*Soldering – including Health and Safety.*
2b	*Food Sources & Availability and Sensory/Organoleptic Evaluation.*	*Modelling.*	*Perspective drawing to construct 2D and 3D shapes.*	*Soldering – Quality Assurance.*
3a	*Assessment and Evaluation.*	*Practical lessons – Use of the Laser cutter and Coping saw.*	*Design stages: Initial and Final designs.*	*Vacuum forming including Health and Safety.*
3b	*Nutrition.*	*Assembly of product.*	*Final design and Evaluations.*	*Assembly/Quality Assurance/Evaluation.*

Year 7	
Autumn Term 1a	Term 1b
7 weeks **Food** *Hygiene and Safety* Pupils utilise the Food workbook to complete a range of **theory** activities around the theme of Hygiene & Safety. Pupils will complete **practical** work which allows them to implement Hygiene and Safety practices. *Practical's – 1. White Chocolate & Cranberry Cookies* **Product Design** *Health & safety / design brief / research* Students will be introduced to the Product Design workshop and the various safety requirements. They will learn the importance of Product Design in society and they will produce their first design brief for a client (currently Argos).	***7 weeks*** **Food** *Equipment, Processes and Skills* Pupils utilise the Food workbook to complete a range of **theory** activities around the themes of Equipment, Processes and Skills. Pupils will complete **practical** work which allows them to implement their knowledge of utilising Equipment, Processes and Skills. *Practical's – 2. Pastry (simple shortcrust)* *3. Cheese & Tomato Quiche* **Product Design** *Research and Generating design ideas* Students will continue with research for their project and learn techniques to help generate and develop design ideas. Drawing/Rendering skills will be covered as these are essential as they progress in design.

Graphics To explain the design brief and identify key components included within the design brief. Introduction to the topic, including ground rules and Health and Safety. **Electronics** *Health & safety / designing* Students will be introduced to the Electronics workshop and the various safety requirements. They will begin to research and develop ideas for their nightlight project.	**Graphics** Students will disassemble existing products and evaluate the layout and what has been included. In addition to the layout , students will identify the labels on packaging, Explain what some labels mean and evaluate the use of labels on products. **Electronics** *Designing* Students will develop drawing and designing skills and will develop a range of creative designs for their nightlight. They will learn how to create a detailed design proposal from which they can make their product.
Spring Term 2a	Spring Term 2b
6 weeks **Food** *Assessment and Evaluation* Pupils utilise the Food workbook to complete a range of **theory** activities around their STAR assessed work and through evaluation of prior work. Pupils will complete **practical** work which allows them to further their utilisation of Hygiene & Safety in practice, Independence and Competency. *Practical's – 4. Chocolate Shortbread* *5. Apple Crumble* **Product Design** Materials research – Students will study materials that they will be using for the product (Various woods and plastics). What properties do they have? Where do they come from? What makes them suitable for our product? They will then produce a final design fully annotated including measurements and materials (numeracy skills). **Graphics** Student will identify types of sketching techniques. In addition, learners will apply sketching techniques to a piece of work. Learners will explore different hand rendering techniques including identifying different types of grids and underlay's and how they can be used to assist/help in the design stages. Students will be introduced to perspective drawing. To identify what perspective drawing is, and complete simple 3D shape designs.	***6 weeks*** **Food** *Food Sources & Availability and Sensory/Organoleptic Evaluation* Pupils utilise the Food workbook to complete a range of **theory** activities focussing on where food ingredients are sourced, how ethically and sustainably they are sourced and how the senses are used to judge foods in relation to customer acceptability. Pupils will complete **practical** work which utilises the food ingredients. *Practical's – 6. Chicken nuggets, Salad & BBQ Sauce* **Product Design** Modelling – Students will learn to model their design ideas to eradicate any issues before they begin manufacture of their final product (Wall clock) They will produce a plan for manufacture. **Graphics** Learners will revisit 'perspective drawing' using more complex shapes including constructing complex 3D shapes. Students will be introduced to the importance of company logo's looking at a range of existing examples. Using the techniques developed in previous lessons, learners will design own logo for product. Once they have designed their logo for their product, leaners will create 3D sketches of initial ideas of types of packaging inclusive of logo

Electronics *Health & safety / soldering* Students will be introduced to the skills involved in soldering a circuit and will begin to develop their own circuit for the nightlight. They will learn how to identify components and place and solder them correctly.	design and packaging requirements. Also, to evaluate the effectiveness of packaging. **Electronics** *Soldering / quality assurance* Students will develop more complex soldering skills as their circuit progresses. They will learn how to 'fault find' a circuit by looking for problems, and will develop an eye for quality. They will understand why it's important for a circuit to be neat and accurate.
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