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| **Design Technology Year 9 Curriculum Intent**   |
|  | **Autumn Term** | **Spring Term** | **Summer Term** |
|  | **The 3 areas of Design Technology are taught on a termly rotation**   |
|  | **1** | **2** | **1** | **2** | **1** | **2** |
| Key Concepts  | Technology-To develop Engineering Drawing Skills | Engineering-To design and manufacture a Night Light | Food Technology- Understand and apply the principles of nutrition and learn how to cook |
| Knowledge & Understanding | NC- develop and communicate design ideas using annotated sketches, detailed plans, oral. Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others’ needs, wants and values. K&U- This covers the design process as well as some practical graphical skills and the leads onto the skills required in future years at GCSE. It also promotes literacy and numeracy in order to strengthen these skills which may have been neglected during lockdown. Hand Engineering and CAD Skills are developed. | NC- develop and communicate design ideas using annotated sketches, detailed plans, oral. Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others’ needs, wants and values. Students will select from and use specialist tools, techniques, processes, equipment and machinery precisely,K&U- This unit is aimed at giving students an insight into the design and make process. This covers the design process as well as some practical manufacturing skills and the leads onto the skills required in future years. It also promotes literacy and numeracy in order to strengthen these skills which may have been neglected during lockdown. | NC- understand and apply the principles of nutrition and health, students will cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet. Students will become competent in a range of cooking techniques by selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes. They will also understand the source, seasonality and characteristics of a broad range of ingredientsK&U- This unit is aimed at giving insight on how to make a range of different food products and develop a wide range of different food products and develop a wide range of skills that will equip them for life. It also promotes literacy and numeracy in order to strengthen these skills which may have been neglected during lockdown.  |
| Assessment | Students will be assessed throughout through teacher assessment, both verbal, written and graphically and peer/self-assessment.  | Students will be assessed throughout through teacher assessment, both verbal and written, peer/self-assessment and an end of topic assessment on students practical skills.  | Students will be assessed through teacher assessment, bother verbal and written, peer/self-assessment and an end of unit test.Students will be accessed on six dishes they cook. The assessment will incorporate skills learnt to make the dish and theory students have learnt. |
| Why this? Why now? | At Key Stage 2 students again a basic understanding of drawing skills and CAD. This project aims to build on those skills to devlop drawings to an international standard that engineers would be able to understand and use the program 2D Design. This helps prepare students for NCFE Level ½ Technical Award in Engineering as three of the nine content areas for the exam cover Engineering Drawings. Students also need to produce both Hand and CAD drawings for their NEA, this is for the product they will be producing.  | In Key stage 2, pupils studied DT. They learnt how to generate, develop, model and communicate their ideas through discussion, annotated sketches. At Key stage 2 students learnt how to investigate and analyse a range of existing products and evaluate their ideas and products against their own design criteria and consider the views of others to improve their work, they will build on this using GCSE terminology of ACCESSFMM. This may be the first time students have used tools and equipment, this project is to start to develop manufacturing skills in the workshop and raise an awareness of health and safety.  | Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Cooking is a life long skill. Students will also have the opportunity to cook one sweet dish. Students will work to a breif and design their own dish, this is a skill which is required for WJEC Level 1 / 2 Hospiality and Catering.  |
| Skills & Characteristics | * Understand what freehand sketches are Produce freehand sketches from given products
* Create freehand sketches in a time limit
* Gain an understanding of oblique
* Create an oblique drawing
* Gain an understanding of 1 point perspective
* Create a 1 point perspective drawing
* Gain an understanding of 2 point perspective
* Create a 2 point perspective drawing
* Develop accurate marking and measuring skills
* Gain an understanding of isometric drawing
* To understand what an orthographic projection is
* Understand what an exploded drawing is and why they are needed
* Understand what scale is
* To know the 3 types of scale
* Knowledge of CAD
* Knowledge of the program 2D design and its functions
* Gain skills using 2D Design
* Learn how to draw in isometric using CAD
 | * Explain why safety is important in a workshop
* Students to understand the properties of materials.
* Students to know about what equipment they will be using.
* Students will be able to understand the advantages and disadvantages of different materials and tools.
* Categorize materials
* Know the primary sources of natural and manufactured timbers
* Understand how the physical and working properties of a range of natural and manufactured timbers affect their performance.
* Understand the physical and working properties for a range of Thermoforming and Thermosetting
* Understand what Analysis is.
* Students to be able to use ACCESS FM to help with analysis.
* Students to understand what Redesign is and how to apply it.
* Students to understand what CAD/CAM is
* Students to be able to operate the CAD program 2D design.
* Students will be able to understand how CAM works (Laser Cutter).
* To select the correct tools/equipment
* To use tools/equipment safety
* To explain why tools/equipment have been chosen
* To explain how to use tools/equipment safety
* Name tools
* Recall tools used
* Explain how tools are used
* Give advantages of different tools
* To explain the importance of an evaluation
* To complete an evaluation of the project To complete an evaluation of the project and suggest improvements
 | * Knowledge and understanding is applied to the context of the question/task.
* Is able to form a developed interpretation
* Evidence is selected to construct a developed argument, that may not be presented in equal measure
* Use of terminology
* Understand the importance of good kitchen hygiene and routines
* Describe consequences of not following personal hygiene and kitchen routines
* Learn how to use equipment safely
* Be able to use sensory evaluation to review a dish
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| Aspirations & Careers | We have many company links at Southmoor- Seta, Nissan, Komatsu, Vantec and Unipress. Jobs students may go into are: Tradesman: Electrician, Plumer, Joiner, Builder. Engineer: Materials, Civil, Automotive, Design, Chemical, Clinical, Games Designer, Graphic Designer, Product Designer, Construction Manager CAD Technician, Secondary School Teacher, Data Analysis | We have many company links at Southmoor- Seta, Nissan, Komatsu, Vantec and Unipress. Jobs students may go into are: Tradesman: Electrician, Plumer, Joiner, Builder. Engineer: Materials, Civil, Automotive, Design, Chemical, Clinical, Games Designer, Graphic Designer, Product Designer, Construction Manager CAD Technician, Secondary School Teacher, Data Analysis | Industrial baker, baking operative, artisan baker, craft baker, Bartender, Barista, Butcher, Butler, Cake decorator, Catering manager, Food service manager, Cellar technician, dispense technician, cellar service engineer, beer quality technician, Chef, Cook, Crew member, fast-food service assistant, food and beverage server, Fishmonger, Food factory worker, Food manufacturing inspector, Food scientist, Waiter, Waitress, waiting staff, server, Waiters serve food and drinks to customers in restaurants and cafes, take orders and handle payments. |

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|  | **Basic****(Lower Ability End Points)** | **Clear** **(Middle Ability End Points)** | **Detailed** **(Higher Ability End Points)** |
| Y9 Technology  | * Create a range of design ideas
* Identify different drawing techniques
* Use CAD to draw 2D and 3D shapes and apply colour/texture
* Use CAD to draw a range of basic shapes/products showing a range of skills/techniques
 | * Develop and communicate design ideas
* Understand why different drawing techniques are used
* Use CAD to design realistic solutions showing a range of skills
* Use CAD to design realistic and creative solutions showing a range of skills/techniques
 | * Develop and communicate detailed design ideas
* Understand why different drawing techniques are used and create them accurately
* Use CAD to design realistic and creative solutions showing a range of skills
* Use CAD to independently design realistic and creative solutions showing a range of skills/techniques
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| Y9 Food Technology  | * Shows some accurate knowledge.
* Demonstrates some understanding that is relevant to the demands of the question.
* Some use of appropriate terminology.
* Knowledge and understanding is partially applied to the context of the question/task.
* Practical skills are of a medium to low-level standard.
* Is able to form some interpretation that shows some accuracy.
* Analysis and evaluation skills are used in a suitable way with a sound level of competence but may lack precision.
* Evidence is selected to construct a one-sided argument
* Evaluation that offers generalised judgements and conclusions, with minimal use of evidence.
 | * Includes accurate knowledge.
* Demonstrates sound understanding that is relevant to the demands of the question/task
* Generally precise use of terminology.
* Knowledge and understanding is mainly applied to the context of the question/task.
* Practical skills are appropriately applied and are of a medium standard.
* Is able to form a sound interpretation that is generally accurate.
* Analysis and evaluation skills are used in an appropriate and sound way.
* Evidence is selected to construct a sound argument
 | * Has a range of detailed and accurate knowledge.
* Demonstrates well developed understanding that is relevant to the demands of the question.
* Precise use of terminology.
* Knowledge and understanding is applied to the context of the question/task.
* Practical skills are effectively applied and are of a high to medium standard.
* Is able to form a developed interpretation that is mostly accurate.
* Analysis and evaluation skills are used in an effective way.
* Evidence is selected to construct a developed argument, that may not be presented in equal measure.
* Detailed evaluation that offers generally secure judgements, with some link between rational conclusions and evidence.
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| Y9 Engineering  | * Identify material categories
* You used the equipment and attempted your practical activity when marking out, Shaping, drilling, cutting, finishing and assembly
* You followed health and safety rules. You used the equipment and attempted your practical activity: Marking out, Drilling, Shaping, Cutting and Filing.
* Use CAD to draw a range of basic shapes/products showing a range of skills/techniques
* Make any final changes to work. Complete any outstanding work
 | * Match materials to different categories
* You used tools and equipment fairly accurately
* You followed health and safety rules. You used tools and equipment fairly accurately. You reflected as you worked, Marking out, Drilling, Shaping, Cutting and Filing.
* Use CAD to design realistic and creative solutions showing a range of skills/techniques
* Explain how you could further improve the design or your finished outcome.
 | * Explain the uses and properties of different materials
* You followed health and safety rules. You can correct your mistakes and produce alternative improvements; you worked with precision and produced a finished product of high quality. You reflected on you work as it developed identifying what worked well modifying where necessary.
* An excellent quality light.
* Use CAD to independently design realistic and creative solutions showing a range of skills/techniques
* Explain how you could further improve the design or your finished outcome.
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