Carmel College Curriculum Implementation – KS 4 Long term plan Subject: **Design Technology –Creative Craft Certificate, GCSE Design Technology 2023-24**

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|  | Year 10 Creative Craft  | Year 11 Creative Craft | Y10 GCSE Design Technology | Y11 GCSE Design Technology  |
| Autumn half term 1Sequential knowledge and skills | **Coat hook: Unit 1 & 3** with accompanying subject knowledgeDevelop skills & understanding of construction techniques; 1.1 Assess the properties of available materials for craft item(s) including the visual and tactile qualities (metals)Develop skills & understanding (practical skills); 1.2 Select materials, tools, equipment and techniques to support craft ideas and give reasons for choices 1.3/1.5 Use appropriate tools and equipment for selected technique1.4 Develop craft techniques, making effective use of materials, tools and equipment-Center Punch, Scribe, Steel Rule, Engineer Square, Pillar Drill, Hand Drill, Flat file, Toggle Clamp, Ceramic chip forge work, Mole Grips, Metal Vice .Health & Safety.1.5 Maintain a safe working environment by ensuring safe use of materials, tools and equipment1.2 Finishing Methods: Cross & Draw Filing, Abrasion paper. Type: Metal paint with brush. Application of Danish oil to timber backing plate.Develop subject knowledge of Materials; Metal types, Joining Metals, Production planning, Use of Moulds, Jigs, formers, Ergonomics & Anthropometrics, Product Analysis.Develop CAD skills; using 2D design & laser cutter; to create engraved graphic for the timber back.**Unit4**1.3 Display craft work in an appropriate way/setting.2.1 Evaluate the creative process2.2 Review final craft item to identify opportunities for improvement or further development | **Unit 2 Business including Advent Angel**Develop skills & understanding of enterprise;1.1Explore enterprises within a chosen craft area1.2 Explain what makes them successful1.3 Describe the market(s) for chosen craft area1.4 Identify opportunities in chosen market(s)1.5 Explain the importance of listening to stakeholders when developing ideas1.6 Explain the importance of balancing risk against the potential reward of creative ideas1.7 Identify appropriate financial tools to support creative enterprising ideas1.8 Identify ways to market a creative product2.1 Explore employment opportunities within a chosen craft area2.2 Describe the characteristics of an enterprising individual in a chosen craft area2.3 Identify own strengths and areas for development within a chosen craft area2.4 Produce an action plan for personal development/career aspirations**Unit 2 Business** Develop skills & understanding of enterprise;1.1Explore enterprises within a chosen craft area1.2 Explain what makes them successful1.3 Describe the market(s) for chosen craft area1.4 Identify opportunities in chosen market(s)DIRT- complete any missing work for units 1,2,4 | **Clock Shop Project** with accompanying CAD work & subject knowledgeDevelop skills & understanding of construction techniques; Timber joining methods \*methods used in industry to ensure quality control for consistency, accuracy (jigs & templates).Develop skills & understanding (practical skills); Timber (Marking out; Try Square, Steel Rule, Pillar Drill, Tenon saw, Junior Hacksaw, G clamp. Screwdriver & relevant Health & Safety.Finishing Methods: Disc Sander, Glass paper. Type: Danish Oil, with cloth.Develop subject knowledge of Materials; Timbers & Boards, Scales of Production, Quality Assessment & Quality Control & Joining Methods, Ergonomics & Anthropometrics, Product Analysis.Develop CAD skills; using 2D design & laser cutter; to create an industry standard Orthographic Drawing & personalized Set Square.Drawing skills | **Design Technology NEA** Section A;DIRTSection B;Design Ideas -annotated & Design Testing Section C;Design Brief Detailed Final Specification Section D;Design idea development (sketches) \*tested CAD model  |
| Assessment Content and methods used to judge learning | On going assessment of Subject knowledge work. Final Product Outcome. | Design Exam | On going assessment of Subject knowledge work. Final Product Outcome, & Materials Test. | Assessment based on progress on NEA and Subject knowledge test.  |

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| Autumn half term 2Sequential knowledge and skills | **Hanging Basket bracket Unit 1 & 3** Develop skills & understanding of construction techniques; 1.1 Assess the properties of available materials for craft item(s) including the visual and tactile qualitiesDevelop skills & understanding (practical skills); 1.2 Select materials, tools, equipment and techniques to support craft ideas and give reasons for choices 1.3/1.5 Use appropriate tools and equipment for selected technique1.4 Develop craft techniques, making effective use of materials, tools and equipment-Center Punch, Scribe, Steel Rule, Engineer Square, Pillar Drill, Hand Drill, Flat file, Toggle Clamp, Mole Grips, Metal Vice & relevant Health & Safety.1.5 Maintain a safe working environment by ensuring safe use of materials, tools and equipment1.2 Finishing Methods: Cross & Draw Filing, Abrasion paper. Type: Metal paint with brush Develop subject knowledge of Materials; Metal types, Joining Metals, Production planning, Use of Moulds, Jigs, formers, Ergonomics & Anthropometrics, Product Analysis.**Unit 4**1.3 Display craft work in an appropriate way/setting.2.1 Evaluate the creative process2.2 Review final craft item to identify opportunities for improvement or further development | **Clock Project: Unit 3**1.1 Design brief and Task analysis1.1 “Clock styles” mood board1.2 Range of designs for CLOCK project with annotation1.2 Clock number designs/ Lettering styles1.3 Peer assessment and suggestions for improvements1.3 1.4 Modelling clock and modificationsUse of Cad &Cam to produce models and final product1.3 Evaluation of designs and changes-Explanation of changes1.4 3D final CLOCK design in colour with sizes- EXAM1.5 Give reasons for choosing their final design | **Continue Clock Shop project****Advent Angel** with accompanying CAD work & subject knowledgeDevelop skills & understanding of finishing techniques; Torching Develop skills & understanding (practical skills); Hand cutting and finishing skills. Use of Adhesives (PVA & Araldite) Finishing Methods: Glasspaper, Disc Sander, Brazing hearth (torching)Develop subject knowledge of Materials; Use of Templates.Develop CAD skills; using 2D design Drawing skills, accurate Isometric Circles | **Design Technology NEA** Section D;Developed Design Proposal.Appropriate materials & Construction Investigation, Developed Design using Google Sketch upProduct Sizing Modelling Practice Construction Methods Final Design Proposal  |
| Assessment Content and methods used to judge learning | On going assessment of Subject knowledge work. Final Product Outcome. | Unit 2: Internal written exam | On going assessment of Subject knowledge work. Final Product Outcome, End of project Test. | Ongoing assessment of NEA & subject knowledge assessment. |
| Spring half term 3Sequential knowledge and skills | **Cracket: Unit 1 & 3** Develop skills & understanding of Material properties 1.1 Assess the properties of available materials for craft item(s) including the visual and tactile qualities (Wood)Develop skills & understanding (practical skills); 1.2 Select materials, tools, equipment, and techniques to support craft ideas and give reasons for choices 1.3/1.5 Use appropriate tools and equipment for selected technique1.4 Develop craft techniques, making effective use of materials, tools and equipment- Steel Rule, Try Square, Pillar Drill, Hand Drill, Flat file, Hegnar saw, Clamp, Morticing machine, table router, glass paper | **Clock project continued**Followed by **Finger Joint Box: Unit 1 & 3** Develop skills & understanding of construction techniques; 1.1 Assess the properties of available materials for craft item(s) including the visual and tactile qualitiesDevelop skills & understanding (practical skills); 1.2 Select materials, tools, equipment and techniques to support craft ideas and give reasons for choices 1.3/1.5 Use appropriate tools and equipment for selected technique1.4 Develop craft techniques, making effective use of materials, tools and equipment.Health & Safety.1.5 Maintain a safe working environment by ensuring safe use of materials, tools and equipment1.2 Finishing Methods: Finishing, Cross & Draw Filing, Abrasion paper. Type: Danish OilDevelop subject knowledge of Materials; Timber types, Joining Timbers, Production planning. | **Mild Steel Wall Bracket / Coat Hook**with accompanying CAD work & subject knowledgeDevelop skills & understanding of construction techniques; Laminating Timber \*methods used in industry to ensure quality control for consistency, accuracy (formers).Develop skills & understanding (practical skills); Center Punch, Scribe, Steel Rule, Engineer Square, Pillar Drill, Hand Drill, Flat file, Toggle Clamp, Joining & Finishing Metals, Mole Grips, Metal Vice & relevant Health & Safety.Finishing Methods: Cross & Draw Filing, Abrasion paper. Type: Metal paint with brush Develop subject knowledge of Materials; Metal types, Joining Metals, Production planning, Use of Moulds, Jigs, formers, Develop CAD skills; using 2D design to create Orthographic projection of Clock Drawing skills | **Design Technology NEA** Section E;Practical work - Practice Construction Methods (personal to each pupil)Final Product Construction **Design Technology Exam Revision**Communication techniques  |
| Assessment Content and methods used to judge learning | On going assessment of Subject knowledge work. Final Product Outcome. Completion of unit work  | On going assessment of Subject knowledge work. Final Product Outcome. Completion of unit work  | On going assessment of Subject knowledge work.  | Assessment based on progress on NEA.Communication techniques subject knowledge Assessment. |
| Spring half term 4 Sequential knowledge and skills | **Cracket: Unit 1 & 3 *(continued)***Health & Safety.1.5 Maintain a safe working environment by ensuring safe use of materials, tools and equipment1.2 Finishing Methods:  Abrasive paper. Type: Application of Danish oil to timber backing plate.Develop subject knowledge of Materials; Wood types, Joining Timber, Use of template and jigs Develop CAD skills; using 2D design & laser cutter; to create engraved graphic for the table. | **Finger Joint Box: (continued) Unit 4**1.3 Display craft work in an appropriate way/setting.2.1 Evaluate the creative process2.2 Review final craft item to identify opportunities for improvement or further development | **Laminated Wine Bottle Holder**with accompanying CAD work & subject knowledgeDevelop skills & understanding of construction techniques; Laminating Timber \*methods used in industry to ensure quality control for consistency, accuracy (moulds).Develop skills & understanding (practical skills); Shaping (Hegner Saw & relevant Health & Safety.Finishing Methods: Disc Sander, Glass paper. Type: Quick dry varnish (with brush) Develop subject knowledge of Materials; Bending Timber, Timber finishes. Develop CAD skills; using 2D design & laser cutter; to create Wine bottle design. Drawing skillsDevelop subject knowledge of Materials; Thermoplastic & Thermosetting plastic, Polymer Processes in Industry.Develop CAD skills; Using Google Sketchup for create 3D drawings with a variety of materials. Drawing skills | Section E;Final Product Construction Continued.Final Design Proposal Materials ListProduction PlanningSection F;Evaluation of productEvaluation against specification Evaluation by third party.**Design Technology Exam Revision**3.2.1 Selection of Materials |
| Assessment Content and methods used to judge learning | Ongoing assessment of Subject knowledge work. Final Product Outcome. Completion of unit work | Final Product Outcome. Completion of all units | On going assessment of Subject knowledge work. Final Product Outcome, End of project Test. | Final completed NEA Materials subject knowledge Assessment. |
| Summer half term 5 Sequential knowledge and skills | **Candle holder: Unit 1 & 3** This includes practical skills with accompanying subject knowledgeDevelop skills & understanding of construction techniques; 1.1 Assess the properties of available materials for craft item(s) including the visual and tactile qualities (metals)Develop skills & understanding (practical skills); 1.2 Select materials, tools, equipment and techniques to support craft ideas and give reasons for choices 1.3/1.5 Use appropriate tools and equipment for selected technique1.4 Develop craft techniques, making effective use of materials, tools and equipment- Beaten metal work, Tinsnips, Brazing , Spot welding, Center Punch, Scribe, Steel Rule, Engineer Square, Pillar Drill, Hand Drill, Flat file, Toggle Clamp, Ceramic chip forge work, Mole Grips, Metal Vice Health & Safety.1.5 Maintain a safe working environment by ensuring safe use of materials, tools and equipment1.2 Finishing Methods: Cross & Draw Filing, Abrasion paper. Type: Metal paint with brush. Application of Danish oil to timber backing plate.Develop subject knowledge of Materials; Metal types, Joining Metals, Production planning, Use of Moulds, Jigs, formers, Ergonomics & Anthropometrics, Product Analysis.**Unit4**1.3 Display craft work in an appropriate way/setting.2.1 Evaluate the creative process2.2 Review final craft item to identify opportunities for improvement or further development | **Unit 4 -Practical work** Complete practical work.Present evidence in folio.This will involve the students the opportunity to demonstrate the ability to use safely, and accurately a wide range of tools, processes, and techniques which they have learned throughout the whole of the course. | **3D Printing / Cold Casting *(continued* -to be developed)**Develop subject knowledge of Materials; Vacuum Forming, casting, use of additivesDevelop CAD skills; Using Google Sketchup for create 3D drawings with a variety of materials. To develop skills creating high quality products using CAM -3D printer & Laser cutter.Drawing skills | **Design Technology Exam Revision**3.2.1 Selection of Materials (continued)3.2.8 Specialist techniques & processes 3.3.9 Material Management |
| Assessment Content and methods used to judge learning | On going assessment of Subject knowledge work. Final Product Outcome. Completion of unit work | Completion of all units for submission to NCFE | Ongoing assessment of Subject knowledge work. Final Product Outcome, End of project Test. | Ongoing assessment of subject knowledge work for each area. |
| Summer half term 6Sequential knowledge and skills | **Unit 4**1.3 Display craft work in an appropriate way/setting.2.1 Evaluate the creative process2.2 Review final craft item to identify opportunities for improvement or further development | **Unit 4 -Practical work** Complete practical work.Present evidence in folio.**Unit 4 -Evaluation (for project)**1.3 Evaluation and changes-Explanation of changesDIRT - complete any missing work for all units. | **Design Technology NEA** Section A;Task Investigation, Task Analysis, Plan of Research, Style Mood board (x2) Product Analysis (x2)Consumer Profile,Consumer QuestionnaireSection C;Initial Design Ideas  | 3.2.3 Ecological & social footprint3.3.2 Environmental, social & economical challenge |
| Assessment Content and methods used to judge learningAssessment | On going assessment of Subject knowledge work. Final Product Outcome. Completion of unit work |  | Ongoing assessment of Subject knowledge work. Final Product Outcome, End of project Test. | Ongoing assessment of subject knowledge work for each area. |