Carmel College Curriculum Implementation – KS 3 Long term plan Subject: Design Technology –CAD 2022-23

\*All projects are designed to progress from the previous in terms of the use of tools & equipment & processes to cover as many as possible throughout the course. Assessed homework tasks are designed to cover the design process (design, development & final design) throughout the key stage.

Y7 pupils are taught on a 2 week rotation

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|  | Year 7 | Year 8 | Year 9 |
| Autumn half term 1  Sequential knowledge and skills | **2D Design Key Skills: Basic skills;** line, shape, delete, edit etc  Develop subject knowledge CAD/CAM: Adv/Disadvantages of CAD/CAM, Software, Hardware; Laser Cutter, 3D printer, Vinyl Cutter.  Develop CAD skills; using 2D design. |  |  |
| Assessment Content and methods used to judge learning | Subject knowledge assessment, with 2D design skills assessment to draw a house  Ongoing assessment of homework tasks |  |  |
| Autumn half term 2  Sequential knowledge and skills | **2D Design Key Skills: Extended skills;** vectorise, contour etc  Develop subject knowledge CAD/CAM: Mechanical Motions (Linear, Rotary, Reciprocating, Oscillating) & Levers  Develop CAD skills; using 2D design. |  |  |
| Assessment Content and methods used to judge learning | Assessed Automata design ideas  Ongoing assessment of homework tasks |  |  |
| Spring half term 3  Sequential knowledge and skills | **2D Design Key Skills: Keyring**  ***Pupils develop skills on 2D design to create a personalised keyring cut out of Acrylic on the laser cutter.***  Develop subject knowledge CAD/CAM: Linkages  Develop CAD skills; using 2D design, laser cutter. |  |  |
| Assessment Content and methods used to judge learning | Ongoing assessment of homework tasks  Final product outcome and skills assessment. Design assessment; to design ‘Grabber Toy’ |  |  |
| Spring half term 4 Sequential knowledge and skills | **2D Design Key Skills: 'Grabber’**  ***Pupils develop skills on 2D design to create a personalised moving ‘Grabber Toy’ -to be cut out on Cardboard on the laser cutter***  Develop subject knowledge CAD/CAM: Linkages (Parallel, reverse motion, Bell Crank)  Equipment (Vinyl Cutter, 3D Pinter, Vinyl Cutter)  Develop CAD skills; using 2D design, laser cutter. |  |  |
| Assessment Content and methods used to judge learning | Assessed Automata design ideas  Ongoing assessment of homework tasks |  |  |
| Summer half term 5 Sequential knowledge and skills | **Automata Toy**  ***Whilst learning about motion and CAMS pupils use 2D design skills to create an automata toy based on a theme of their choice cut on the laser cutter.***  Develop CAD skills; using 2D design, laser cutter.  Develop subject knowledge of CAMS: Round, Eccentric, Egg, Snail, Hexagon |  |  |
| Assessment Content and methods used to judge learning | Assessed Automata design ideas  Ongoing assessment of homework tasks |  |  |
| Summer half term 5  Sequential knowledge and skills | **Automata *(continued)***  Develop skills & understanding (practical skills); Joining (finger joints) Adhesives (PVA Glue) & relevant Health & Safety.  Develop subject knowledge of CAMS: Software |  |  |
| Assessment Content and methods used to judge learning  Assessment | End of Year assessment; subject knowledge & 2D design skills |  |  |