KS 3 Design and Technology

<table>
<tr><th></th><th>Year 7</th><th>Year 8</th><th>Year 9</th></tr>
<tr><td>Autumn 1</td><td rowspan="2">Health and Safety induction
Workshop induction
Automata
Introduction to safe use of workshop machines
Woods and manmade boards
Marking out, cutting, shaping and sanding
Mechanisms - Input process output
Review</td><td rowspan="3">Health and Safety
Workshop safety recap
Wacky Racers
Electronics and mechanical system
Plastics
System blocks
Specification
Develop creativity skills and presentation techniques
Develop a design
Orthographic drawing
Modal a design using modelling foam
Making an electronic circuit
Using heat to shape and form plastics (Vacuum Forming)
Assembling an electro mechanical system
Review
Picture frame and blister pack (CADCAM)
Creating a range of ideas
2 CAD design for laser cutting (Adobe Illustrator)
2 CAD packaging insert (Adobe Illustrator and Photoshop)
CAM laser cutter in action demonstration
Using heat to shape and form plastics (Vacuum Forming)</td><td>Health and Safety
Workshop safety recap
Presentation techniques - 3D Sketching and rendering
Isometric drawing
Product rendering skills and colour theory
Two point perspective
Orthographic drawing
Final presentation drawings</td></tr>
<tr><td>Autumn 2</td><td rowspan="3">Electronic dice board game
Programmable microcontrollers theory
Research existing products
Game design ideas
Layout design
Develop a design using 2D CAD (Adobe Illustrator, Photoshop)
Creating a complex electronic system including a PIC microcontroller
Programming a Pic
Making using card
Assembly and applying surface graphics
Project review</td></tr>
<tr><td>Spring 1</td><td rowspan="2">Drawing skills and use of colour
Accurate use of line and colour
Computer Buddy
Electronics and plastics
Introduction to electronic circuits
Introduction to Circuit Wizard (software)
Develop creativity skills and presentation techniques
Introduction on how to develop a design
Making an electronic circuit
Thermo and thermosetting plastics
Using heat to shape and form plastics (oven and linebender)
Review</td></tr>
<tr><td>Spring 2</td></tr>
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Summer 1		**Illustration - book cover design** ● Develop creativity skills and presentation techniques ● Interpret a story in images ● Creating typography and image ● Composition and layout design	**Architecture** Exploring existing products Develop techniques to be more creative Design ideas Develop a design 3D CAD modelling (Google sketchup)
Summer 2	**CAD/CAM Sweets Packaging** ● Introduction to typography, colour and composition ● Product Analysis ● Font design ● Layout design ● 2D CAD (Adobe Illustrator) ● CAM using CNC plotter	**Google Sketchup Boat** ● 3D CAD modelling, introduction to Google Sketchup exercises ● Create a 3 CAD model of a boat ● 3D CAD Photorealistic images	**Packaging design perfume/aftershave** ● Typography, colour and composition ● Product Analysis ● Font design ● Layout design ● Prototyping ● 2D CAD (Adobe Illustrator, Photoshop) ● CAM using CNC plotter