

## DESIGN ENGINEERING PATHWAYS

### YEAR 8 LICENSE LP

<b>DECLARATIVE KNOWLEDGE</b> <b>I know</b>		<b>PROCEDURAL KNOWLEDGE</b> <b>I can do</b>	
K1	The following electronic components: 78L05 voltage regulator, resistors, Diode, 8-Pin chip carrier, LEDs, Download socket.	C1	With minimal help and support, I know how to place and solder the following components on a PCB (which way around they should be placed): 78L05 voltage regulator, resistors, Diode, 8-Pin chip carrier, LEDs, Download socket.
K2	The resistor colour code	C2	With minimal help and support, read the values of fixed resistors using the colour code
K3	The following variable resistors: LDR (Light Dependent Resistor)	C3	With minimal help and support, measure the resistance values of the following variable resistors: LDR (Light Dependent Resistor)
K4	The following SolidWorks tools: Corner rectangle Circle Smart Dimension Trim entities Boss extrude Mate Saving files as a .dxf file	C4	With minimal help and support use SolidWorks to fully develop a design idea from an initial drawing to a full assembled, completed design, ready for CAM.
K5	The following TechSoft 2D Designs tools: Layout Paste image Zoom in and out Bitmap vectorising Cutting pathway colours Text tool Importing .dxf files	C5	With minimal help and support use the laser cutter to cut and engrave images onto the required parts for the independently designed housing for the project.
K6	The following flowchart symbols: Start Digital Decision Analogue Decision Outputs Wait Tune Stop	C6	With minimal help and support, write basic microcontroller programs using flowchart symbols
K7	Identify the difference between an analogue and a digital input	C7	With minimal help and support, download a flowchart program to a microcontroller and test

## DESIGN ENGINEERING PATHWAYS

### YEAR 8 LICENSE LP

K8	Identify how to connect a microcontroller to a PC		C8	With minimal help and support, use progression over time, independently evaluate the quality of the product, related research and design tasks.	
K9	Reflecting on work completing will help improve future learning		C9	With minimal help and support, identify targets for improvement in future products.	