

DESIGN ENGINEERING PATHWAYS

YEAR 8 555 FAN LP

DECLARATIVE KNOWLEDGE I know		PROCEDURAL KNOWLEDGE I can do	
K1	The following electronic components and tools: Components: 555 Timer IC, resistors, Diode, 8-Pin chip carrier, DC motor, TIP41C transistor, Potentiometer and toggle switch. Tools: Soldering iron, side cutter, wire stripper, solder station, long nose plier and safety goggles.	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): 555 Timer IC, resistors, Diode, 8-Pin chip carrier, DC motor, TIP41C transistor, Potentiometer and toggle switch.
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 resistor: Potentiometer	C3	With minimal help and support, calculate the different resistance on each of a potentiometer sides and place a potentiometer in an electronic circuit to create a pulsed output.
K4	The following SolidWorks tools: Corner rectangle Circle Smart Dimension Trim entities Boss extrude Mate	C4	With minimal help and support use SolidWorks to fully develop a fan blade design.
K5	Identify the following materials and tools: 3mm Plywood Long nose pliers PVA glue Masking tape	C5	With minimal help and support, use the appropriate tools and pre-cut Plywood parts to manufacture a 555 Fan project.
K6	The following Circuit Wizard tools: Drag and place, rotate left and right, play and stop, add track, add pad, normal – real world – artwork – current views and the circuit – PCB tabs	C6	With minimal help and support, explain how PWM works. Build a Genie 08 circuit using PWM.
K7	Identify Pulse width modulation (PWM) in a circuit.	C7	With minimal help and support, use progression over time, independently evaluate the quality of the product, related research and design tasks.

DESIGN ENGINEERING PATHWAYS

YEAR 8 555 FAN LP

K8	Reflecting on work completing will help improve future learning		C8	With minimal help and support, identify targets for improvement in future products.	
----	---	--	----	---	--