

YEAR 10 Design and Technology 'I can do'...Statements



Kings Langley School
Unlocking Potential for Life

Phase 2: Energy, materials, systems and devises	Check 1	Check 2	Final check
Lesson 1: Energy generation			
I can list energy sources			
I can Understand how power is generated from fossil and nuclear fuels, wind, solar, tidal, hydroelectric and biomass			
I can be aware of the arguments for and against the selection of fossil fuels, renewable energy and nuclear power			
Lesson 2: Energy Storage			
I can identify mechanical power and understand how it is stored			
I can understand pneumatics and hydraulics as examples of kinetic pumped storage systems			
I can understand the functional properties of alkaline and rechargeable batteries			
Lesson 3: Modern Materials			
I can recognise a range of modern materials			
I can describe developments made through the invention of new or improved processes involving modern materials			
I can explain how modern materials can be used to alter functionality			
Lesson 4: Smart Materials			
I can recognise a range of smart materials			
I can understand how the functional properties of a range of smart materials can be changed by external stimuli			
Lesson 5: Composite materials and technical textiles			
I can understand how material properties can be enhanced by combining two or more materials			
I can recognise a range of composite materials and technical textiles			
I can understand how fibres can be manipulated to create technical textiles			

Lesson 6: Systems approach to design			
I can understand the principles of electronic systems			
I can use systems diagrams and flowcharts to analyse and solve a given problem			
I can understand the use of open and closed loop systems and subsystems			
I can recognise and understand common electronic input and output components			
Lesson 7: Electronic systems			
I can understand the difference between analogue and digital signals			
I can understand how microcontrollers are programmed as counters, timers and for decision making to provide functionality to products and processes			
I can understand the use of buzzers, speakers and lamps to provide functionality to products and processes			
Lesson 8: Mechanical Devices			
I can recognise and identify a range of movements			
I can understand the functions of mechanical devices to produce linear, rotary, reciprocating and oscillating movements			
I can understand how mechanisms can be used to change magnitude and direction of force, including levers, linkages and rotary systems			
Lesson 9: Assessment			
I can apply my knowledge in answers to a range of questions			
I can highlight areas of strength and any gaps in my understanding of this unit			