


Design & Technology Department – Year 7

 Shirley High Curriculum Map	<i>To learn basic skills using hand tools safely. To work with metal, manmade board and plastic. To recognise types of metals and metal processes and experience mould design, mould making, casting, cutting shaping and finishing in pewter. To recognise types of plastic and plastic processes and experience mould making and Vacuum forming HIPS plastic. To learn about basic electronic systems and to experience soldering, construction and testing of a simple circuit.</i>					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Theme/Topic/Skill:	Theme/Topic/Skill:	Theme/Topic/Skill:	Theme/Topic/Skill:	Theme/Topic/Skill:	Theme/Topic/Skill:
	Health & Safety in the Workshop Pewter Keyring project	Pewter Keyring project - continued STEM Card circuit project	Health & Safety in the Workshop Pewter Keyring project	Pewter Keyring project - continued STEM Card circuit project	Health & Safety in the Workshop Pewter Keyring project	Pewter Keyring project - continued STEM Card circuit project
Why Now?	To provide learners an opportunity to build on the foundation skills learnt at KS2 about designing and making. To enable pupils to be aware of the workshop environment and to be able create their projects with a full awareness of Health and Safety in the workshop. Introducing pupils to the different types of materials they will be working with.	Introducing pupils to simple systems and base electronic components. To provide an opportunity for pupils to create basic circuits and enhance electronics theory.	To provide learners an opportunity to build on the foundation skills learnt at KS2 about designing and making. To enable pupils to be aware of the workshop environment and to be able create their projects with a full awareness of Health and Safety in the workshop. Introducing pupils to the different types of materials they will be working with.	Introducing pupils to simple systems and base electronic components. To provide an opportunity for pupils to create basic circuits and enhance electronics theory.	To provide learners an opportunity to build on the foundation skills learnt at KS2 about designing and making. To enable pupils to be aware of the workshop environment and to be able create their projects with a full awareness of Health and Safety in the workshop. Introducing pupils to the different types of materials they will be working with.	Introducing pupils to simple systems and base electronic components. To provide an opportunity for pupils to create basic circuits and enhance electronics theory.
Fundamental Concepts	Safety, Awareness in Workshop. A design and make task including theory on metal, plastics, and wood. Learning to use hand tools for cutting and smoothing materials.	Using hand tools, theory of plastics to finish pewter keyring. Evaluating projects, identifying positives and negatives of project. Recognising basic electronic systems. A design and make a simple electronic circuit construction with some components.	Safety, Awareness in Workshop. A design and make task including theory on alloys, casting metals and the use of hand tools for cutting and smoothing.	Using hand tools, theory of plastics to finish pewter keyring. Evaluating projects, identifying positives and negatives of project. Recognising basic electronic systems. A design and make a simple electronic circuit construction with some components.	Safety, Awareness in Workshop. A design and make task including theory on alloys, casting metals and the use of hand tools for cutting and smoothing.	Using hand tools, theory of plastics to finish pewter keyring. Evaluating projects, identifying positives and negatives of project. Recognising basic electronic systems. A design and make a simple electronic circuit construction with some components.
Students will...	<p>Health & Safety in Workshop Being aware of the workshop environment</p> <p>Identifying potential health and safety hazards in the workshop.</p> <p>Learning to use only tools that pupils have been taught and shown how to use.</p> <p>Learning to use Personal Protective Equipment: aprons and goggles in all practical lessons.</p> <p>Pewter Keyring Project Encourage Creative design with examples & research into jewellery from different cultures</p> <p>Create success criteria with pupils for a layout design sheet.</p> <p>Use of basic scale, when measuring and marking designs on materials.</p> <p>Introduce pupils to pewter as a metal alloy and its properties.</p> <p>Introduce pupils to MDF as a manufactured board, as one of the families of wood.</p> <p>Introduce pupils to acrylic as a thermoplastic, as one of the families of plastics.</p> <p>Learning to cut and smooth MDF.</p> <p>Learning to cut and smooth acrylic.</p>	<p>Pewter Keyring Project - continued Learning to cast and smooth Pewter.</p> <p>Learning to mark, drill and cut Pewter.</p> <p>Learning to smooth and finish Pewter.</p> <p>Learning to evaluate their own design, identifying, positives, negatives and areas where improvement is required</p> <p>STEM Card Circuit project Learning basic systems (inputs, outputs, process)</p> <p>Creating initial ideas and developing ideas with annotation.</p> <p>Developing skills: Mould making using card; Safely cutting and drilling.</p> <p>Electrical Theory: Understanding basic electrical theory and recognising basic circuit diagrams, basic components.</p> <p>Developing Further Skills: Practice soldering exercises, building basic safe soldering skills for circuit construction. Learning to cut, strip and tin wires for soldering.</p> <p>Learning to use and manipulate copper strip to create simple circuits.</p> <p>Learning about LEDs and batteries. Learning how to incorporate LEDs into a circuit for STEM paper circuit.</p> <p>Learning to evaluate projects against requirements.</p>	<p>Health & Safety in Workshop Being aware of the workshop environment</p> <p>Identifying potential health and safety hazards in the workshop.</p> <p>Learning to use only tools that pupils have been taught and shown how to use.</p> <p>Learning to use Personal Protective Equipment: aprons and goggles in all practical lessons.</p> <p>Pewter Keyring Project Encourage Creative design with examples & research into jewellery from different cultures</p> <p>Create success criteria with pupils for a layout design sheet.</p> <p>Use of basic scale, when measuring and marking designs on materials.</p> <p>Introduce pupils to pewter as a metal alloy and its properties.</p> <p>Introduce pupils to MDF as a manufactured board, as one of the families of wood.</p> <p>Introduce pupils to acrylic as a thermoplastic, as one of the families of plastics.</p> <p>Learning to cut and smooth MDF.</p> <p>Learning to cut and smooth acrylic.</p>	<p>Pewter Keyring Project - continued Learning to cast and smooth Pewter.</p> <p>Learning to mark, drill and cut Pewter.</p> <p>Learning to smooth and finish Pewter.</p> <p>Learning to evaluate their own design, identifying, positives, negatives and areas where improvement is required</p> <p>STEM Card Circuit project Learning basic systems (inputs, outputs, process)</p> <p>Creating initial ideas and developing ideas with annotation.</p> <p>Developing skills: Mould making using card; Safely cutting and drilling.</p> <p>Electrical Theory: Understanding basic electrical theory and recognising basic circuit diagrams, basic components.</p> <p>Developing Further Skills: Practice soldering exercises, building basic safe soldering skills for circuit construction. 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Learning to cut, strip and tin wires for soldering.</p> <p>Learning to use and manipulate copper strip to create simple circuits.</p> <p>Learning about LEDs and batteries. Learning how to incorporate LEDs into a circuit for STEM paper circuit.</p> <p>Learning to evaluate projects against requirements.</p>
Language for Life (Key terms/Vocabulary)	Safety, hazardous, protective equipment, aprons, goggles, designing, colouring, annotating, pewter, metal, alloys, acrylic, thermoplastics, plastics, crude oil, reusable, recycle, reuse, reduce, sustainable, sustainable forest, FSC Compliant, Medium Density Fibreboard (MDF), Manufactured Boards, wood, coping saw, metal vice, riser, needle files, flat file, wet and dry paper, molten, ladle, smoothing, finishing, cutting, wet and dry paper, emery cloth, aluminium soft jaws, pewter mould risers	Initial ideas, rendering, annotation, single-core wire, wire strippers, side cutters, long nose pliers, soldering iron, soldering iron stand, solder, flux, wires, copper strip, card mould, safety, aprons, goggles, hair tied back, ventilation, light emitting diode (LED), battery, tinning, wires, thermoplastics, plastics, crude oil, reusable, recycle, reuse, reduce, sustainable	Safety, hazardous, protective equipment, aprons, goggles, designing, colouring, annotating, pewter, metal, alloys, acrylic, thermoplastics, plastics, crude oil, reusable, recycle, reuse, reduce, sustainable, sustainable forest, FSC Compliant, Medium Density Fibreboard (MDF), Manufactured Boards, wood, coping saw, metal vice, riser, needle files, flat file, wet and dry paper, molten, ladle, smoothing, finishing, cutting, wet and dry paper, emery cloth, aluminium soft jaws, pewter mould risers	Initial ideas, rendering, annotation, single-core wire, wire strippers, side cutters, long nose pliers, soldering iron, soldering iron stand, solder, flux, wires, copper strip, card mould, safety, aprons, goggles, hair tied back, ventilation, light emitting diode (LED), battery, tinning, wires, thermoplastics, plastics, crude oil, reusable, recycle, reuse, reduce, sustainable	Safety, hazardous, protective equipment, aprons, goggles, designing, colouring, annotating, pewter, metal, alloys, acrylic, thermoplastics, plastics, crude oil, reusable, recycle, reuse, reduce, sustainable, sustainable forest, FSC Compliant, Medium Density Fibreboard (MDF), Manufactured Boards, wood, coping saw, metal vice, riser, needle files, flat file, wet and dry paper, molten, ladle, smoothing, finishing, cutting, wet and dry paper, emery cloth, aluminium soft jaws, pewter mould risers	Initial ideas, rendering, annotation, single-core wire, wire strippers, side cutters, long nose pliers, soldering iron, soldering iron stand, solder, flux, wires, copper strip, card mould, safety, aprons, goggles, hair tied back, ventilation, light emitting diode (LED), battery, tinning, wires, thermoplastics, plastics, crude oil, reusable, recycle, reuse, reduce, sustainable
Extended writing Opportunities	Pure Metals and Metal Alloys. Safety procedures and hazards in the workshop. Personal Protective Equipment. Pewter Project evaluation	Systems & Electronic components, Sustainability	Pure Metals and Metal Alloys. Safety procedures and hazards in the workshop. Personal Protective Equipment. Pewter Project evaluation	Systems & Electronic components, Vac forming	Pure Metals and Metal Alloys. Safety procedures and hazards in the workshop. Personal Protective Equipment. Pewter Project evaluation	Systems & Electronic components, Vac forming

Maths Across the Curriculum	Design and mould making in MDF - Marking, measuring, drawing to scale, basic geometry.	Design and mould making in card - Marking measuring, drawing to scale, basic geometry.	Design and mould making in MDF - Marking, measuring, drawing to scale, basic geometry.	Design and mould making in card - Marking measuring, drawing to scale, basic geometry.	Design and mould making in MDF - Marking, measuring, drawing to scale, basic geometry.	Design and mould making in card - Marking measuring, drawing to scale, basic geometry.
Links to careers/ aspirations	Health and Safety Officer, Graphic Design, Metal Worker, Blacksmith, Jeweller, Artisan	Electrical Engineer, Electronics technician	Health and Safety Officer, Graphic Design, Metal Worker, Blacksmith, Jeweller, Artisan	Electrical Engineer, Electronics technician	Health and Safety Officer, Graphic Design, Metal Worker, Blacksmith, Jeweller, Artisan	Electrical Engineer, Electronics technician
Cultural Capital	Exploring designs including the most ancient use of Pewter jewellery - Egypt	Exploring simple electronic circuits and components with a view to what may be used at home	Exploring designs including the most ancient use of Pewter jewellery - Egypt	Exploring simple electronic circuits and components with a view to what may be used at home	Exploring designs including the most ancient use of Pewter jewellery - Egypt	Exploring simple electronic circuits and components with a view to what may be used at home
Practical Application of Skills	Increased confidence, safety and skills use of hand tools can be applied around the home and outside school.	Build practical making skills, including electronic soldering, testing and basic system evaluation. These skills can be applied in projects at home or outside school. Recognise the social and environmental implications in the use of plastics	Increased confidence, safety and skills use of hand tools can be applied around the home and outside school.	Build practical making skills, including electronic soldering, testing and basic system evaluation. These skills can be applied in projects at home or outside school. Recognise the social and environmental implications in the use of plastics	Increased confidence, safety and skills use of hand tools can be applied around the home and outside school.	Build practical making skills, including electronic soldering, testing and basic system evaluation. These skills can be applied in projects at home or outside school. Recognise the social and environmental implications in the use of plastics