Oxley Park Academy DT Progression

Master practical skills This concept involves developing the skills needed to make high quality products							
KC: To master techniques							
		Milestone 1		Milestone 2		Milestone 3	
	Early years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Food	Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe. They manage their own basic hygiene and personal needs successfully, including dressing and going to the toilet independently  	Cut, peel or grate ingredients safely and hygienically.    Measure or weigh using measuring cups or electronic scales  Assemble or cook ingredients.   		Prepare ingredients hygienically using appropriate utensils. Measure ingredients accurately.  Follow a simple recipe. Assemble or cook ingredients 		Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. Demonstrate a range of baking and cooking techniques  Create and refine recipes, including ingredients, methods, cooking times and temperatures. 	

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Materials	Children sing songs, make music and dance, and experiment with ways of changing them. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. 	Cut materials safely using tools provided. Measure and mark out to the nearest centimetre.  Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).  Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).		Cut materials accurately and safely by selecting appropriate tools.  Measure and mark out to the nearest millimetre.   Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). Select appropriate joining techniques.			Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper).

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Textiles	Children sing songs, make music and dance, and experiment with ways of changing them. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.    		Shape textiles using templates.  Join textiles using running stitch.  Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing).	Understand the need for a seam allowance. Join textiles with appropriate stitching.  Select the most appropriate techniques to decorate textiles. 		Create objects (such as a cushion) that employ a seam allowance. Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).  Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion). 	

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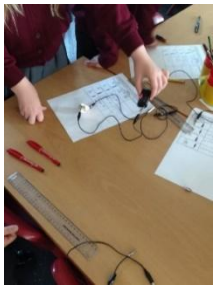
Electricals and Electronics	Children find out about and use a range of everyday technology. <u>They select appropriate applications that support an identified need</u> - for example in deciding how best to make a record of a special event in their lives, such as a journey on a steam train. Children show good control and co-ordination in large and small movements. They move confidently in a range of ways, safely negotiating space. <u>They handle equipment and tools effectively,</u> including pencils for writing.  Using magnets to make objects move. 		Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage)		Create series and parallel circuits 		Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).  

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Computing	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.    	Model designs using software. 		Control and monitor models using software designed for this purpose – computing lessons	Write code to control and monitor models or products – computing lessons

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Construction	Children sing songs, make music and dance, and experiment with ways of changing them. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.     	Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products.  		Choose suitable techniques to construct products or to repair items. Strengthen materials using suitable techniques. 		Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding).

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Mechanics	Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.    		Create products using levers, wheels and winding mechanisms.		Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).  	Convert rotary motion to linear using cams. Use innovative combinations of electronics (or computing) and mechanics in product designs.	

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Key Concepts: **Design, make, evaluate and improve**							
		Milestone 1		**Milestone 2**		**Milestone 3**	
	Early years	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Design, make, evaluate and improve This concept involves developing the process of design thinking and seeing design as a process.	Children talk about what they have made and how it could be better.  	Design products that have a clear purpose and an intended user. Make products, refining the design as work progresses. Use software to design.		Design with purpose by identifying opportunities to design. Make products by working efficiently (such as by carefully selecting materials).  Refine work and techniques as work progresses, continually evaluating the product design. Use software to design and represent product designs.		Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). Make products through stages of prototypes, making continual refinements. Ensure products have a high quality finish, using art skills where appropriate. Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.	

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Take inspiration from design throughout history This concept involves appreciating the design process that has influenced the products we use in everyday life.	Children in EYFS will look at a variety of products and explore and talk about how they work  	Explore objects and designs to identify likes and dislikes of the designs. Suggest improvements to existing designs. Explore how products have been created.	Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. Improve upon existing designs, giving reasons for choices.  Disassemble products to understand how they work.	Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. Create innovative designs that improve upon existing products. Evaluate the design of products so as to suggest improvements to the user experience.