YEAR 3

DIGITAL WORLD – ELECTRONIC CHARM

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
DESIGNING	**The three Prime ELGS of Communication and Language, PSED and Physical Development provide the foundations of which all other learning is built upon.** **Specific:** **Creating with Materials ELG** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function. Share their creations, explaining the process they have used. **People Culture and Communities ELG** Describe their immediate environment using knowledge from observation, discussion, stories,	Use own ideas to design something Describe how their own idea works Design a product which moves Explain to someone else how they want to make their product Make a simple plan before making	Think of an idea and plan what to do next Explain why they have chosen specific criteria	Prove that a design meets a set criteria Design a product and make sure that it looks attractive Choose a material for both its suitability and its appearance	Use ideas from other people when designing Produce a plan and explain it Persevere and adapt when original ideas do not work Communicate ideas in a range of ways, including by sketches and drawings which are annotated	Come up with a range of ideas after collecting information from different sources Produce a detailed step-by-step plan Explain how a product will appeal to a specific audience Design a product that requires pulleys or gears	Use market research to inform plans and ideas Follow and refine original plans Justify planning in a convincing way Show that culture and society is considered in plans and designs

	non-fiction texts, and maps.						
MAKING	**The three Prime ELGS of Communication and Language, PSED and Physical Development provide the foundations of which all other learning is built upon.** **Specific:** **Creating with Materials ELG** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function. Share their creations, explaining the process they have used.	Use own ideas to make something Make a product which moves Choose appropriate resources and tools	Choose tools and materials and explain why they have chosen them Join materials and components in different ways Measure materials to use in a model or structure	Follow a step-by-step plan, choosing the right equipment and materials Select the most appropriate tools and techniques for a given task Make a product which uses both electrical and mechanical components Work accurately to measure, make cuts and make holes	Know which tools to use for a particular task and show knowledge of handling the tool Know which material is likely to give the best outcome Measure accurately	Use a range of tools and equipment competently Make a prototype before making a final version Make a product that relies on pulleys or gears	Know which tool to use for a specific practical task Know how to use any tool correctly and safely Know what each tool is used for Explain why a specific tool is best for specific action
EVALUATING	**The three Prime ELGS of Communication and Language, PSED and Physical Development provide the foundations of which all other**	Describe how something works Explain what works well and not so well in the model they have made	Explain what went well with their work	Explain how to improve a finished model Know why a model has or has not been successful	Evaluate and suggest improvements for designs Evaluate products for both their purpose and appearance	Suggest alternative plans; outlining the positive features and draw backs Evaluate appearance and function against original criteria	Know how to test and evaluate designed products Explain how products should be stored and give reasons

	learning is built upon. **Specific:** **Creating with Materials ELG** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function. Share their creations, explaining the process they have used.				Explain how the design has been improved Use IT where appropriate to add to the quality of the product		Evaluate product against clear criteria
TECHNICAL KNOWLEDGE		Make their own model stronger Make a model stronger and more stable Use wheels and axles, when appropriate to do so		Know how to strengthen a product by stiffening a given part or reinforce a part of the structure Use a simple IT program within the design Know how to be hygienic and safe when using food Bring a creative element to the food product being designed		Link scientific knowledge to design by using pulleys or gears Use more complex IT program to help enhance the quality of the product produced Use electrical systems correctly and accurately to enhance a given product Know which IT product would enhance a specific product Use knowledge to improve a made product by strengthening, stiffening or reinforcing	
FOOD TECHNOLOGY		Cut food safely Weigh ingredients to use in a recipe Describe the ingredients used when making a dish or cake		Describe how food ingredients come together Weigh out ingredients and follow a given recipe to create a dish Talk about which food is healthy and which food is not Know when food is ready for harvesting Describe how food ingredients come together Weigh out ingredients and follow a given recipe to create a dish		Be both hygienic and safe in the kitchen Know how to prepare a meal by collecting the ingredients in the first place Know which season various foods are available for harvesting Explain how food ingredients should be stored and give reasons Work within a budget to create a meal Understand the difference between a savoury dish and sweet dish.	

			Talk about which food is healthy and which food is not Know when food is ready for harvesting			

DIGITAL WORLD – ELECTRONIC CHARM COMPOSITES Design, make and evaluate an Echarm, Pouch and Point of sale badge using simple IT programmes.						
COMPONENTS						
	1	**2**	**3**	**4**	**5**	**End Point**
	What is a digital world? **What is digital revolution?** **How can I use an IT program within my design?**	**How can I program an Echarm?** **What is a 'loop' when programming?**	**What is a pouch?** **How can I create a template?**	**What is the purpose of a point of sale display?** **How can we persuade others to buy our Echarms?**	**Use if needed for extra lesson.**	**Children will know what a digital world is and be able to identify aspects of digital revolution.** **Children will confidently be able to use a simple IT programme to aid and create a design. They will be able to loop the programme to create flashing LED lights.** **Children will know the features of an Echarm. They will be able to create an appealing and functioning Echarm.** **Children will have thought about their target audience and brainstormed ways they could persuade the consumers to buy their product.**
CONCEPTS **Link to concept map**	Design		Design			Children will have designed an Echarm, pouch and point of sale display, following a set criterion, ensuring it looks attractive and has used suitable materials.

	Purpose	Purpose	Purpose	Purpose		Children have considered the consumer and the purpose for the charm
		Technical	Technique			Children will have followed a plan, selecting the correct equipment and materials to create their products. Children will use appropriate techniques and simple IT programmes to create their products. Children will work accurately, making scores to create their template.
				Critical Thinking		Children will discuss, evaluate and test their design in response to the key criteria.
SKILLS	Use a simple IT program within the design Prove that a design meets a set criteria Design a product and make sure that it looks attractive Choose a material for both its suitability and its appearance	Use a simple IT program within the design Explain how to improve a finished model Know why a model has or has not been successful Follow a step-by-step plan, choosing the right equipment	Work accurately to measure, make cuts and make holes Follow a step-by-step plan, choosing the right equipment and materials Select the most appropriate tools and techniques for a given task	Prove that a design meets a set criteria Design a product and make sure that it looks attractive Choose a material for both its suitability and its appearance. Select the most appropriate tools and techniques for a given task Make a product which uses both electrical components. Explain how to improve a finished model		Children will understand what properties would make a good pouch. They will be able to use simple IT software to programme an Echarm. Children will construct a template ensuring their Echarm can safely fit inside. Children will test and evaluate their design. Children will know and discuss where improvements can be made to enhance their product.

				Know why a model has or has not been successful		
KNOWLEDGE Z:\Hubs\Science and DT\DT\2023-2024\KAPOW\YEAR 3\DIGITAL WORLD - Electronic Charm\Electronic Charm - Knowledge Organiser.pdf	Know how to incorporate IT within a design Know what the design criteria is and follow it accurately. Know who the product audience is and base the design on this.	Know how to use a technology to program an Echarm. Know how to follow a set of instructions and sets to ensure their Echarm will be programmed correctly. Know how to test their product and problem solve if faced with any challenges or problems.	Know how to accurately score and cut to create a pouch. Know which equipment is best to use to create a pouch for an Echarm. Know which tools and techniques are suitable to use to create a pouch for an Echarm.	Know how to use a simple IT program to create a point of sale badge. Know who our product is being designed for and create a product that is appealing to them. Know how to evaluate their product and identify and improvements they can make.		Children will understand what properties would make a good pouch. They will be able to use simple IT software to programme an Echarm. Children will construct a template ensuring their Echarm can safely fit inside. Children will test and evaluate their design. Children will know and discuss where improvements can be made to enhance their product.
LESSON LINK	KAPOW Digital world Electronic charm	KAPOW Digital world Electronic charm	KAPOW Digital world Electronic charm	KAPOW Digital world Electronic charm	KAPOW Digital world Electronic charm	
PROGRESSIVE VOCABULARY	smart wearables product design digital revolution technology analogue digital feature	smart wearables electronic products micro: bit program loops initiate electronic	template develop fasten test user key features	cad (computer-aided design) point of sale display badge stand net		Articulate and recognise subject specific vocabulary

	function digital world micro: bit	simulator control monitor sense		product design requirements layers		
CURRICULUM EXPERIENCES		Use an IT programme to program an Echarm.	Create a pouch using a range of resources and materials.			
END POINT	Children will be able to identify some key product developments that occurred as a result of digital revolution. Children will analyse and evaluate existing products. Children will design their own Echarm using simple IT technology. Children will problem solve by suggesting potential features on the Micro: bit.	Children will have written a program to control (button press) and/or monitor (sense light) to initiate a flashing LED algorithm. Children will understand what a loop is in programming Children will be able to explain the basic functionality of my eCharm program	Children will be able to identify the key features of a pouch Children will have developed design ideas for a technology pouch Children will have used a template when cutting and assembling the pouch	Children will have drawn and manipulated 2D shapes, using computer-aided design, to produce a point of sale badge. Children will understand what is meant by 'point of sale display'. Children will have followed a list of design requirements		

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