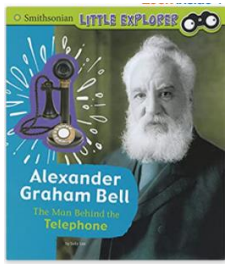
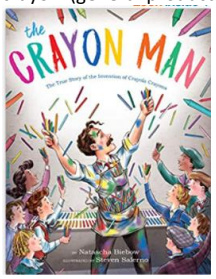
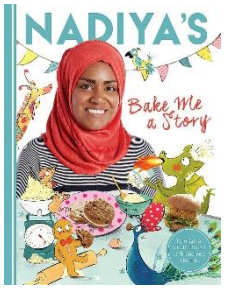
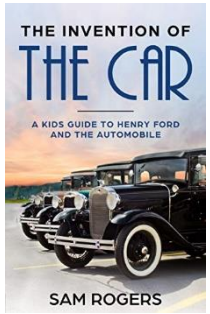
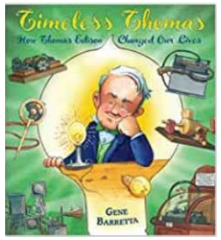
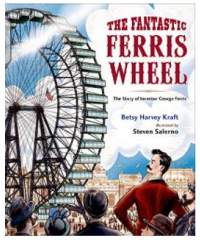
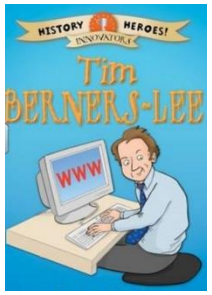
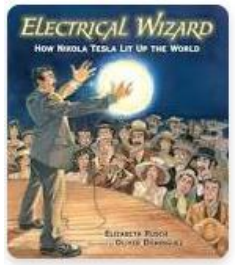
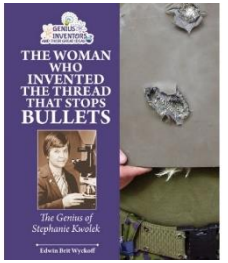
LONGMAN'S HILL CP SCHOOL CURRICULUM PROGRESSION TABLE- DESIGN TECHNOLOGY

DESIGN TECHNOLOGY	EYFS : Expressive arts and design: Creating with Materials & Physical Development		
EYFS Development Matters Statements for Reception Children...	Examples of how we support this...	Enabling Environments	Specific Longman's Hill examples...
 Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills. **[EAD P73]**  Develop their small motor skills so that they can use a range of tools competently, safely and confidently. **[PD P42]**	• Provide opportunities to work together to develop and realise creative ideas. • Provide children with a range of materials for children to construct with. Encourage them to think about and discuss what they want to make. Discuss problems and how they might be solved as they arise. Reflect with children on how they have achieved their aims. • Teach children different techniques for joining materials, such as how to use adhesive tape and different sorts of glue. • Provide a range of materials and tools and teach children to use them with care and precision. Promote independence, taking care not to introduce too many new things at once. • Offer children activities to develop and further refine their small motor skills. Suggestions: threading and sewing, woodwork, pouring, stirring, dancing with scarves, using spray bottles, dressing and undressing dolls, planting and caring for plants, playing with small world toys, and making models with junk materials, construction kits and malleable materials like clay. • Regularly review the equipment for children to develop their small motor skills. Is it appropriate for the different levels of skill and confidence of children in the class? Is it challenging for the most dexterous children?	• Provide resources for mixing colours, joining things together and combining materials, demonstrating where appropriate. • Provide children with opportunities to use their skills and explore concepts and ideas through their representations. • Have a 'holding bay' where models and works can be retained for a period for children to enjoy, develop, or refer to.	• Children will have the opportunity to use different malleable materials and 'messy play' materials. EG: playdough, clay, noodles, rice, plasticine and flour and water. • Provide children with a range of recycled junk that can be used to make models. Highlight the importance of reusing and recycling. • Provide small scale construction opportunities both in the indoor and outdoor provision. • Children may have the opportunity to access and join in with STEM activities and school STEM days.

ELG: Creating with Materials (Expressive Arts and Design)
Children at the expected level of development will:
- 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
ELG: Fine Motor Skills (Physical Development)
Children at the expected level of development will:
- Use a range of small tools, including scissors and paint brushes;

DESIGN TECHNOLOGY		YEAR 1 & 2 (CYCLE A)	YEAR 1 & 2 (CYCLE B)	YEAR 3 & 4 (CYCLE A)	YEAR 3 & 4 (CYCLE B)	YEAR 5 & 6 (CYCLE A)	YEAR 5 & 6 (CYCLE B)
THRESHOLD CONCEPTS FOR D.T		← Designing, Making, Evaluating and Improving →					
		← Taking Inspiration from Designers Throughout History →					
		← Mastering Practical Skills →					
THRESHOLD CONCEPT: DESIGNING, MAKING, EVALUATING AND IMPROVING	Design	Design purposeful, functional, appealing products for themselves and other users based on design criteria-refining design as work progresses Generate, develop, model and communicate their ideas through templates, mock-ups and, where appropriate, information and communication technology	Design purposeful, functional, appealing products for themselves and other users based on design criteria-refining design as work progresses Generate, develop, model and communicate their ideas through templates, mock-ups and, where appropriate, information and communication technology	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose Generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups Generate, develop, model and communicate their ideas through discussion, cross-sectional and exploded diagrams, and computer aided design	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose (motivated by the service a product will offer) Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes-Through stages of prototypes	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups Generate, develop, model and communicate their ideas through discussion, pattern pieces and computer-aided design tracking changes as work progresses
	Make	Select from and use a range of tools and equipment to perform practical tasks (for example joining and finishing.) Select from and use a wide range of materials and components, including construction materials and ingredients and textiles, according to their characteristics. 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).	Select from and use a range of tools and equipment to perform practical tasks (for example cutting, shaping) Select from and use a wide range of materials and components, including construction materials according to their characteristics. 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).	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining) accurately Select from and use a wider range of materials and components, including construction materials, ingredients, according to their functional properties and aesthetic qualities. Cut materials accurately and safely by selecting appropriate tools. Measure and mark out to the nearest millimetre. Select appropriate joining techniques.	Select from and use a wider range of tools and equipment to perform practical tasks [Focusing on finishing) Select from and use a wider range of materials and components, including construction materials and textiles according to their functional properties and aesthetic qualities. Cut materials accurately and safely by selecting appropriate tools. Measure and mark out to the nearest millimetre. Select appropriate joining techniques.	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining], accurately Select from and use a wider range of materials and components, including construction and textiles materials, according to their functional properties and aesthetic qualities. 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).	Select from and use a wider range of tools and equipment to perform practical tasks (Focusing on finishing], accurately Select from and use a wider range of materials and components, including ingredients, according to their functional properties and aesthetic qualities. 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).

THRESHOLD CONCEPT: DESIGNING, MAKING, EVALUATING AND IMPROVING 	Evaluate & Improve	Evaluate; explore and evaluate a range of existing products Evaluate their ideas and products against design criteria	Evaluate; explore and evaluate a range of existing products Evaluate their ideas and products against design criteria	Investigate and analyse a range of existing products Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	Investigate and analyse a range of existing products Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

THRESHOLD CONCEPT: TAKING INSPIRATION FROM DESIGNERS THROUGHOUT HISTORY	KNOWLEDGE (Semantic)	Have an awareness of significant individuals and products that have helped shape the world. Telephone = Alexander Graham-Bell (products)  Edwin Binney – invented the crayon (general products)  Zahia Hadid – Architect (structures)  **ALSO** Compare and discuss everyday products eg. Chair, clothes, cereals or brands eg Innocent (smoothies)	Begin to know and understand about significant individuals and key events that have helped shape the world. Food- Nadiya Hussein  	Understand how key events and individuals in DT have helped shape the world. Steve Jobs (programming)  Food – Jamie Oliver Henry Ford (automobiles with wheels and axles)  	Understand how key events and individuals in DT have helped shape the world. Thomas Edison – inventor of the light bulb (electrical systems)  	Understand how key events and individuals in DT have helped shape the world George Ferris – inventer and developer of the Ferris Wheel.(structures)  Food – Heston Blumenthal Tim Berners-Lee (programming)  	Understand how key events and individuals in DT have helped shape the world Nikola Tesla – electrical engineer and inventor (electrical systems)  Stephanie Kwolek – inventor of Kevlar (textiles) 

 THRESHOLD CONCEPT: MASTERING PRACTICAL SKILLS	Structures	Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. Build structures (animal home) exploring how they can be stronger, stiffer and more stable **ZAHA HADID**			Apply their understanding of how to strengthen, stiffen and reinforce more complex structures – Focus on textiles (see below) Design/ make a cushion		Apply their understanding of how to strengthen, stiffen and reinforce more complex structures – Focus on textiles (see below) Design / make a kite **STEPHANIE KWOLEK**
	Mechanics	Create products using **sliders and winding**. Explore and use mechanisms in their products. Design and make a Christmas card with a moving picture for a customer. **EDWARD BINNEY**	Create products using **wheels & axles.** Explore and use mechanisms (for example wheels and axes,) in their products. Design and make a seasonal rotating calendar for a customer	Choose suitable techniques to construct products or to repair items. Strengthen materials using suitable techniques. Create products using **wheels, axles and winder** mechanisms. Design and make a carnival float **HENRY FORD**		Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as **levers, winding** mechanisms, **pulleys and gears**). Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding). Convert rotary motion to linear using cams. Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages Design a fairground toy **GEORGE FERRIS**	

	Food	Cooking and nutrition; use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from Use techniques such as cutting and peeling. Prepare simple dishes safely and hygienically, without using a heat source Design / make a fruit salad with Handa's fruit	Cooking and nutrition; use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from Use techniques such as cutting, peeling and grating. Prepare simple dishes safely and hygienically, without using a heat source Design / make a sandwich for a picnic **NADIYA HUSSEIN**	Understand and apply the principles of a healthy and varied diet Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques Focusing on: preparing ingredients hygienically and using appropriate utensils. Following a recipe Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, and baking Design/ make dips and dippers for a party **JAMIE OLIVER**	Understand and apply the principles of a healthy and varied diet Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques Focusing on: preparing ingredients hygienically and using appropriate utensils, following a recipe Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading and baking Design / make a seasonal soup celebrating cultures **PAUL HOLLYWOOD**	Understand and apply the principles of a healthy and varied diet Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques Focusing on: preparing ingredients hygienically and using appropriate utensils, following a recipe Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking Design / make bread as a side dish for a soup or stew **PAUL HOLLYWOOD**	Understand and apply the principles of a healthy and varied diet Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques Focusing on: preparing ingredients hygienically and using appropriate utensils, following a recipe Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed Recipes can be adapted to change the appearance, taste, texture and aroma Different food and drink contain different substances – nutrients, water and fibre – that are needed for health. Design / make Greek salad for healthy picnic choice **HESTON BLUMENTHAL**
	Electrical systems				Understand and use electrical systems in their products creates series circuits Create series circuits Design / make a torch **THOMAS EDISON**		Understand and use electrical systems in their products (EG: circuits, switches, bulb, buzzers Create series and parallel circuits Design / make a buzzer game **NIKOLA TESLA**
	Programming			Apply their understanding of computing to programme and control their products Design / make wearable fitness device using Microbit **STEVE JOBS**		Apply their understanding of computing to programme, monitor and control their products Use innovative combinations of electronics (or computing) and mechanics in product designs. Design / make adventure map and floor robot for other children to play **TIM BERNERS-LEE**	

 THRESHOLD CONCEPT: MASTERING PRACTICAL SKILLS	Textiles		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). Design and make a coin purse		Understand the need for a seam allowance. Join textiles with appropriate stitching. Select the most appropriate techniques to decorate textiles. Create objects (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). Design / make a cushion		Understand the need for a seam allowance. Join textiles with appropriate stitching. Select the most appropriate techniques to decorate textiles. Create objects (a bag/purse) 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, plus other stitching as appropriate). 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). Design / make a kite that can fly **STEPHANIE KWOLEK**

SUBJECT SPECIFIC VOCABULARY		Mechanism Slider winding Nutrition Healthy Diet Ingredients Hygiene Recipe Technique Cut peeling Measure Mark Shape Fold Glue Structure Stiffen Strong Stable Hinges Screw Tear Grate Prepare	Previous plus … Wheel Axles Textile Fabric Dye Print Running stitch template	Previous plus … Reinforce Millimetre Accurate Perimeter Slot Repair Construct Levers Linkage Savoury Seasonality Reared Processed Utensil Slice Mix spread Programme Prototype Device Code debug	Previous plus … Electrical Series Parallel Monitor Control Circuit Bulb Switch Battery / cell buzzer Seam allowance Back stitch Tactile Visual Heat Bake	Previous plus … Pulleys Gears Cams Rotary motion Linear motion Sanding Kneading Dough Prove Yeast	Previous plus … Storage Handling Strengthen Reinforce Precision Texture Aroma Adapt Substitute Fibre nutrients