LONDON MEED PRIMARY SCHOOL

Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition

Design Technology	Autumn	Spring	Summer
EYFS	• Choose the right resources to carry out their own plan - Construction materials outside to make 3 bears cottage/rockets/fire engines… small world construction (lego/duplo/sticklebricks) to make chosen plan (boats in lost and found, different sized furniture in 3 bears cottage), junk modelling to make chosen creations (rockets, boats - do they float or sink?) • Use one-handed tools and equipment, for example, making snips in paper with scissors, holepunch, stapler, paper clips, split pins. • Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. - Using the blocks to build a representation of burgess hill- how can you make the different buildings? Can you make a bridge for the gingerbread man to cross the river- what will you use? How can you make it stronger? • Explore different materials freely, in order to develop their ideas about how to use them and what to make. • Develop their own ideas and then decide which materials to use to express them. • Safely use and explore a variety of materials (paper, card), tools and techniques (scissors, holepunch, stapler, paper clips, split pins, spoons, measuring scales), experimenting with colour, design, texture, form and function. - Make pancake mixture, help to measure out flour/ crack eggs, mix. Make gingerbread men- measure, mix, roll, cut. - Using playdough- knead, roll, cut. • Share their creations, explaining the process they have used. • Use a range of small tools, including scissors, paintbrushes, pencils, holepunch, stapler, paper clips, split pins and cutlery.		
Y1	**<u>Structures</u>** **A chair for baby bear** **Begin to build structures with some independence exploring how they can be made stronger, stiffer and more stable.** **Explore vocabulary here:** ● **Structure**	**<u>Mechanisms</u>** **a land vehicle for The Jolly Rogers (wheels and axles)** Key knowledge (including terminology): Design (do the wheels turn, is there space for treasure, is it waterproof, does it protect the driver), wheels, axels, buggy, similarities, waterproof, curved, edge, spinning, join. Key Skills: Researching what makes a good beach buggy, designing a beach buggy,	***Food and nutrition*** **fruit kebabs** Key knowledge (including terminology): Where does fruit come from, local, tropical, hot/cold climates, texture- soft, crunchy, smooth, hard. Key Skills: Design a kebab (fruits you like, range of textures), using knives safely for cutting, Evaluate their kebab for taste/texture. Specific tools: Plastic knives, skewers

	• **Stable** • **Rigid** Key knowledge (including terminology): stronger, design, layers, join, suspension, bridge, cable-stayed, beam, arch, weaker, stable. Key Skills: Strengthening paper, joining with tape, folding, layering, oral evaluation, Researching types of bridge and comparing,testing products (using weights), Key text: A chair for baby bear Goldilocks and the three bears Specific tools: Paper, masking tape, glue, sellotape.	testing wheels and axels with cotton reels, lego, dowling, blutac plastic lids, buttons, straws, written evaluation. Key text: Pirates next door inventor: Henry Ford Specific tools: Lego, cotton reels, dowling, blutack	
Yr 2	**<u>Textiles</u>** **- create a Christmas stocking (hessian and red thread)** Key knowledge (including terminology):, Material, fabric, sewing, stitches, design, thread, blanket stitch, running stitch Key Skills: Research existing stockings, To write success criteria for their stocking, to design, sewing, cutting, written evaluation- what was	**<u>Food and nutrition</u>** **create an energy bar** Key knowledge (including terminology): Carbohydrates, dairy, protein, fat, sugar, healthy, energy Key Skills: Research purpose of energy bar and come up with success criteria (small, tasty, gives you energy, has protein, hold together), write ingredients and recipe for energy bar, mash, mix.	**<u>Mechanisms</u>** **Create a moving picture / model (levers)** Key knowledge (including terminology): levers, fixed, moving, fulcrum. Key Skills: Research mechanisms within structures (London Eye, London Bridge), investigate how levers work, design a vehicle with a lever flag pole make holes using a pencil and blutac, make wheeled box with lever flag pole. Specific tools: Split pins, dowelling, cardboard/wooden wheels, washers, glue.

	good, what could be better, blanket stitch, running stitch, measure. Key text: The Empty Stocking Specific tools: scissors, needles, thread, fabric	Specific tools: spoon, fork, plate.	
Yr 3	**Food and Nutrition** **seasonal food** Key knowledge Understand and apply the principles of a healthy and varied diet. Key Skills:Prepare and cook a variety of dishes using a range of cooking techniques (crumble and savoury tart) Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. Understand the impact of non-seasonal produce on the planet. Specific tools: knives, chopping boards	**Mechanisms** **Create a dragon that moves using pneumatics** Key knowledge (including terminology): layout, size, movement, model, measure, cut, fix, strengthen, reinforce, Key Skills: Investigate pneumatics by looking at pre existing products Investigate ways of using pneumatics to make the mouth of a dragon open and close. Use tape, blu tac, split pins ect to support the task. make it following design plan, written evaluation. Assembling, joining, cutting, measuring, fixing, using tools safely, following a plan. Key text: Specific tools: Split pins, glue, tape, blu tack, paper clips, rubber bands, treasury tags, stapler syringe, piping	**Structures - aqueducts** key knowledgeBuild structures with increasing independence . Begin to demonstrate a growing understanding of how to reinforce and strengthen their finished products key skills Assemble, join, combine, strengthen, stiffen, secure, strong, stable, waterproof, structure, space, fastening, sturdy. ● The wider the base, the more stable the structure. ● Triangular frames make stronger structures. ● The Frame is the base structure that gives shape and supports the other parts and is usually the first part constructed.
Yr 4	**Mechanisms** **Winding up** Key knowledge (including terminology): cams, handles, levers,	**Textiles** **Sewing (butterflies)**	**Food and nutrition** **make a flavoured bread**

	fulcrums, mechanism, pulley, gear, prototype, rotate, rotating shaft, components, dowel, follower, slider, Key Skills: Look at existing products (actual not images) play with and see how they work, label toys, explore different movements, design and construct a moving toy. Key inventor: Specific tools: dowel, handles, reels, scissors, sellotape,	Key knowledge (including terminology): cross stitch, running stitch, blanket stitch textile, Key Skills: Research butterflies, stitches, fabrics. planning butterfly- keeping design simple so it is achievable, cross stitch, running stitch, thread a needle, tie the thread, sew on a button, cut, shape, join fabric. Specific tools: Needles	Key knowledge (including terminology): Wheat, harvest, bread, yeast, process, dough, sweet, savoury, knead, prove, ferment. Key Skills: Work in groups to design a bread, come up with success criteria, kneading, measuring, baking. Key texts: Greek recipes Specific tools: oven, chosen ingredients and anything needed to prepare these.
Yr 5	**<u>Food and nutrition</u>** **seasonal eating - pasta with tomato sauce** Key knowledge (including terminology): Key Skills: Evaluate a product against the original design specification Evaluate it personally and seek evaluation from others draw up a specification for their design suggest alternative methods of making Use results of investigations, information sources, including ICT when developing design ideas Measure and mark out accurately Use skills in using different tools and equipment safely and accurately Weigh and measure accurately (time, dry ingredients, liquids) Apply the rules for basic food hygiene and	**<u>Structures</u>** **scaled shelter building** Build innovative, functional, appealing, structures that are fit for purpose. Evidence how products can be made stronger and more stable. Use finishing techniques to strengthen and improve the appearance of their models. Key knowledge (including terminology): Assemble, join, combine, strengthen, stiffen, secure, strong, stable, weatherproof, structure, space, fastening, sturdy. ● The wider the base, the more stable the structure. ● Triangular frames make stronger structures. ● The Frame is the base structure that gives shape and supports the other parts and is usually the first part constructed. ● The strut is a connector designed to	**<u>Electrical systems</u>** **Micro Bits - Creating a temperature monitor for pets and designing a suitable case using lego and 3D modelling** Key knowledge (including terminology): monitoring device, electronic, sensor, thermoscope, thermometer, research, design brief, design criteria, development, inventor, vivarium, programming loop, programming comment, alert, ambient, duplicate, copy, value, variable, model, sustainability, plastic, microplastics, decompose, plastic pollution, man-made, synthetic, molecules, reformed, moulded, transparent, opaque, versatile, lightweight, strong, water-resistant, durable, 3D models, consumables, CAD, shape properties, Tinkercad, workplane, group, ungroup ● To know that a 'device' means equipment created for a certain purpose or job and that monitoring devices observe and record. ● To know that a sensor is a tool or device that is designed to monitor, detect and respond to changes for a purpose. ● To understand that conditional statements in programming are a set of rules which are followed if certain conditions are met.

	other safe practices e.g. hazards relating to the use of ovens Use skills in using different tools and equipment safely and accurately Specific tools: knives, chopping boards	withstand tension. ● Braces form a triangular frame to support rectangular corners to make them more sturdy. Key Skills: Strengthening, stiffening, reinforcing. Building shelter using natural materials and making it strong enough to be in. Compare different images of shelters. Design a shelter for a lego figure and test it. Specific tools: Saws, card triangles, drills, hammers, nails, wood glue, joining corners,	Key Skills: ● Researching (books, internet) for a particular animal's needs. ● Developing design criteria based on research. ● Generating multiple housing ideas using building bricks. ● Understanding what a virtual model is and the pros and cons of traditional and CAD modelling. ● Placing and maneuvering 3D objects, using CAD. ● Changing the properties of, or combining one or more, 3D objects using CAD. ● Understanding the functional and aesthetic properties of plastics. ● Programming to monitor the ambient temperature and coding an (audible or visual) alert when the temperature moves out of a specified range. ● Stating an event or fact from the last 100 years of plastic history. ● Explaining how plastic is affecting planet Earth and suggesting ways to make more sustainable choices. ● Explaining key functions in my program (audible alert, visuals). ● Explaining how my product's programmed features would be useful for an animal carer. Specific tools: microbits, Tinkercad, Lego
Yr 6	**<u>Electrical systems</u>** **Torches** Key knowledge (including terminology): Purpose, simulation, design brief, specification, component, cross-section, , circuit,	**<u>Food and Nutrition - WWII soup</u>** Key knowledge (including terminology): Difference between reared, caught and processed food, hazards, knife safety, food hygiene, allergic reactions, cross-contamination, vitamins, minerals, food pyramid, fibre, balanced diet,	**<u>Structures/Mechanisms</u>** **- design and make play props** This topic should be a culmination of all the skills, knowledge and techniques they have used over their time at school. The props they are making should be purposeful, some of them should function and they should involve a range of skills such as

	LED, circuit resistor, battery, wires, soldering. Key Skills: Investigate a range of existing helmets with head torches, annotate and say what the function of different parts are. Design a hard hat with helmet for a target audience and with a specific audience in mind, give it design requirements. Design a circuit for the head torch and show the electrical circuit. Schematic design and pictorial design and computer model. Build a circuit, make papier mache, use a soldering iron, glue gun. Test out product and evaluate. Specific tools: Soldering iron, glue gun, needle and thread.	Key Skills: Chopping, peeling, claw grip, bridge grip, blending, grating. Write a recipe and follow it. Evaluate the food you have made. Specific tools: Chopping board, knife, peeler, grater, blender.	cutting (with scissors, saws, wire cutters, fabric scissors), Joining (with glue, glue gun, wood glue, nails, staples, cross stitch/running stitch, soldering…) and using different materials (fabric, wood, metal, cardboard/paper). There should be time for the children to explore the materials and tools so they can decide how they are going to make them, and for them to make equipment with moving parts- levers/wheels/gears/pulleys/cams.