

**Design & Technology at Alexandra Primary 2021/2022**

	<b>Autumn 2</b>	<b>Spring 2</b>	<b>Summer 2</b>
<b>Year 1</b>	<b>Structures</b> <b>Making Houses</b> Interiors and exteriors	<b>Mechanisms</b> <b>Moving pictures</b>	<b>Food</b> <b>Turkish food</b> Preparing fruit and vegetables
LOs for all topics	Create simple designs for a product Use pictures and words to describe what she wants to do Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing Use a range of tools to cut, join and combine materials and components safely Ask simple questions about existing products and those that they have made		
LOs for each topic	Build structures, exploring how they can be made stronger, stiffer and more stable	Use wheels and axles in a product YR 2 LO: Explore and use mechanisms e.g. levers, sliders, wheels and axles in their products	Talk about what they eat at home and begin to discuss what healthy foods are Say where some food comes from and give examples of food that is grown Use simple tools with help to prepare food safely
Key Vocab	Structures, evaluate, product, design, create, explore Cutting, shaping, joining, finishing Materials, components, Build, Interiors, exteriors, combine, stronger, stiffer, more stable	Mechanisms, evaluate, product, design, create, explore Cutting, shaping, joining, finishing Materials, components, Moving pictures, wheels, axles, levers, sliders	Food, evaluate, product, design, create, explore Healthy, grown, Knife, spoon, fork, cut, safety, techniques Names of different fruit and vegetables they explore
<b>Year 2</b>	<b>Structures</b> <b>Freestanding Structures</b> In the playground, the common, Wood Green	<b>Textiles</b> <b>Flags to represent me</b>	<b>Food</b> <b>Healthy Eating</b> Preparing fruit and vegetables
LOs for all topics	Design purposeful, functional, appealing products for themselves and other users based on design criteria Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology Choose appropriate tools, equipment, techniques and materials from a wide range Safely measure, mark out, cut and shape materials and components using a range of tools Evaluate and assess existing products and those that they have made using a design criteria		
LOs for each topic	Investigate different techniques for stiffening a variety of materials and explore different methods for enabling structures to remain stable	Year 2 Art LO: Use running stitch and over stitch.	Understand the need for a variety of food in a diet Understand that all food has to be farmed, grown or caught Use a wider variety of cookery techniques to prepare food safely
Key Vocab	Structures, free-standing, evaluate, product, design, create, explore, purposeful, functional, appealing, design criteria Generate, develop, model, communicate, ideas Talking, drawing, templates, mock-ups Tools, equipment, techniques, materials Measure, mark out, cut, shape, components Evaluate, assess, Stiffening, stable	Textiles. evaluate, product, design, create, explore, purposeful, functional, appealing, design criteria Generate, develop, model, communicate, ideas Talking, drawing, templates, mock-ups Tools, equipment, techniques, materials Material, fabric, measure, mark out, cut, shape, components Join, glue, staple, sew running stich, over stitch,	Food. evaluate, product, design, create, explore Variety, diet, farmed, grown, caught, Cookery techniques, preparation, cut, slice, chop
<b>Year 3</b>	<b>Mechanical Systems</b> <b>Moving Monsters</b> Pneumatic systems	<b>Food</b> <b>Healthy Eating</b> Healthy wraps	<b>Structures</b> <b>Mini greenhouses</b>
LOs for all topics	Use knowledge of existing products to design their own functional products Create designs, using annotated sketches, cross-sectional diagrams and computer programmes Safely measure, mark out, cut, assemble and join with some accuracy Make suitable choices, from a wider range of tools and unfamiliar materials and plan out the main stages of using them Investigate and analyse a wide of products, including those they have made, considering a wide range of factors		

LOs for each topic	Understand how mechanical systems such as levers and linkages or pneumatic systems create movement	Talk about different food groups and name food from each group (link to Science curriculum in Year 3 – Animals Including Humans) Understand that food has to be farmed, grown or caught in Europe or the wider world Use a wider variety of ingredients and techniques to prepare and combine food ingredients safely	Strengthen frames using diagonal struts
Key Vocab	Mechanical systems, evaluate, investigate, analyse, product, design, create, explore, purposeful, functional, appealing, design criteria Annotated sketches, cross-sectional diagrams, computer programmes Measure, mark out, cut, assemble, join, accuracy Choice, tools, materials, plan, stages Pneumatic systems, movement	Food, food groups, carbohydrates, protein, fats, vitamins and minerals, evaluate, investigate, analyse, product, design, create, explore, purposeful, functional, appealing, design criteria Farmed, grown, caught, Europe, wider world Ingredients, recipe, techniques, prepare, combine, Cut, slice, chop, mash, mix	Structures, evaluate, investigate, analyse, product, design, create, explore, purposeful, functional, appealing, design criteria Annotated sketches, cross-sectional diagrams, computer programmes Measure, mark out, cut, assemble, join, accuracy Choice, tools, materials, plan, stages 3D shapes, frames, strengthen, diagonal struts
Year 4	<b>Mechanical Systems</b> <b>Cars</b> <b>Axles and Wheels</b> Powered by air and by elastic	<b>Food</b> <b>Healthy and varied diet</b> <b>Snack bars and smoothies</b>	<b>Electrical Systems</b> <b>Night lights</b> Including programming and control (using Crumble)
LOs for all topics	Use knowledge of existing products to design a functional and appealing product for a particular purpose or audience (Link to SAP in DR) Create designs using exploded diagrams Use techniques which require more accuracy to cut, shape, join and finish their work e.g. cutting internal shapes, slots in framework Use their knowledge of techniques and the functional and aesthetic qualities of a wide range of materials to plan how to use them Consider how existing products and their own finished products might be improved and how well they meet the needs of the intended user Apply techniques they have learnt to strengthen structures and explore their own ideas		
LOs for each topic		Understand what makes a healthy and balanced diet and that different food and drinks provide different substances that the body needs to be healthy and active Understand seasonality and the advantages of eating seasonal and locally produced food Read and follow recipes which involve several processes, skills and techniques	Understand and use electrical systems in products
Key Vocab	Mechanical systems, evaluate, investigate, analyse, product, design, create, explore, purposeful, functional, appealing, design criteria, intended user, Annotated sketches, cross-sectional diagrams, computer programmes, exploded diagrams Measure, mark out, cut, assemble, join, accuracy Choice, tools, materials, plan, stages Wheels, axles, strengthen, stiffen, stable	Food, food groups, balanced diet, carbohydrates, protein, fats, vitamins and minerals, evaluate, investigate, analyse, product, design, create, explore, purposeful, functional, appealing, design criteria Farmed, grown, caught, Europe, wider world, seasonal, seasonality, locally produced Ingredients, recipe, techniques, processes, skills, prepare, combine, Cut, slice, chop, mash, mix	Electrical systems, structures, evaluate, investigate, analyse, product, design, create, explore, purposeful, functional, appealing, design criteria Annotated sketches, cross-sectional diagrams, computer programmes Measure, mark out, cut, assemble, join, accuracy Choice, tools, materials, plan, stages Circuit, wire, switch, bulb, cell, battery, (Crumble, programming)
Year 5	<b>Textiles</b> <b>Sewing</b> <b>Christmas stockings</b>	<b>Food</b> <b>Healthy and varied diet</b> <b>African food?</b>	<b>Mechanical systems</b> <b>Electrical systems</b> <b>Vehicles</b> – powered by electricity – sails, balloons, elastic, electric (using Programming and Control)
LOs for all topics	Use their research into existing products and their market research to inform the design of their own innovate product Create prototypes to show their ideas Produce step by step plans to guide their making, demonstrating that they can apply their knowledge of different materials, tools and techniques		

	Make detailed evaluations about existing products and their own considering the views of others to improve their work		
LOs for each topic		Understand the different nutrients and the main food groups that are important to health Understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable / tasty to eat Select appropriate ingredients and a wide range of techniques to combine them	Make careful and precise measurements so that joins, holes and openings are in exactly the right place Build more complex 3D structures and apply their knowledge of strengthening techniques to make them stronger or more stable Understand how to use more complex mechanical and electrical systems
<b>Key Vocab</b>	Textiles, evaluate, investigate, analyse, product, design, create, explore, purposeful, functional, appealing, design criteria, intended user, innovative Annotated sketches, cross-sectional diagrams, computer programmes, exploded diagrams, prototype, template, mock-up Step by step plans, guide, demonstrate, Choice, different materials, tools, techniques Join, glue, staple, sew, running stitch, overstitch, other stitches Measure, mark out, cut, accuracy Improve	Mechanical systems, electrical systems, evaluate, investigate, analyse, product, design, create, explore, purposeful, functional, appealing, design criteria, intended user, innovative Annotated sketches, cross-sectional diagrams, computer programmes, exploded diagrams, prototype, template, mock-up Step by step plans, guide, demonstrate, Choice, different materials, tools, techniques Precise measurements, mark out, cut, accuracy, joins, holes, openings 3D structures, strengthen, stronger, stable. Electricity, circuit, wire, motor, switch, crocodile clips, symbols Improve	Food, food groups, balanced diet, carbohydrates, protein, fats, vitamins and minerals, nutrients Evaluate, investigate, analyse, product, design, create, explore, purposeful, functional, appealing, design criteria Farmed, grown, reared, caught, processed, safe, palatable, tasty Europe, wider world, seasonal, seasonality, locally produced Ingredients, recipe, techniques, processes, skills, prepare, combine, Cut, slice, chop, mash, mix etc.
<b>Year 6</b>	<b>Mechanical systems</b> <b>Electrical systems</b> <b>Design a fairground ride</b> Use programming and control and Computer Aided Design (CAD)	<b>Food</b> <b>Healthy and varied diet</b> <b>Mayan Food</b>	<b>Structures</b> <b>Build a Zero Carbon House</b>
LOs for all topics	Use research they have done into famous designers and inventors to inform the desing of their own innovative products Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design Apply their knowledge of materials and techniques to refine and rework their product to improve its functional properties and aesthetic qualities Use technical knowledge, accurate skills to problem solve during the making process Use their knowledge of famous designers to further explain the effectiveness of existing products and products they have made		
LOs for each topic	Apply their knowledge of computing to program, monitor and control their product	Confidently plan a series of healthy meals based on the principles of a healthy and varied diet Use information on food labels to inform choices Research, plan and prepare and cook a savoury dish, applying their knowledge of ingredients and their technical skills	Use a wide range of methods to strengthen, stiffen and reinforce complex structures and use them accurately and appropriately
<b>Key Vocab</b>	Structures, evaluate, investigate, analyse, product, design, create, explore, purposeful, functional, appealing, design criteria, designers, inventors, innovative, generate, develop, model, communicate Annotated sketches, cross-sectional diagrams, exploded diagrams, pattern pieces, computer aided design Refine, rework functional properties, aesthetic qualities, effectiveness Measure, mark out, cut, assemble, join, accuracy Choice, tools, materials, plan, stages 3D shapes, frames, strengthen, diagonal struts, stiffen, reinforce, stable	Mechanical systems, electrical systems, evaluate, investigate, analyse, product, design, create, explore, purposeful, functional, appealing, design criteria, designers, inventors, innovative, generate, develop, model, communicate Annotated sketches, cross-sectional diagrams, exploded diagrams, pattern pieces, computer aided design Refine, rework functional properties, aesthetic qualities, effectiveness Measure, mark out, cut, assemble, join, accuracy Choice, tools, materials, plan, stages 3D shapes, frames, strengthen, diagonal struts, stiffen, reinforce, stable Electricity, circuit, wire, motor, switch, crocodile clips, symbols Improve Crumble, program, monitor, control	Food, food groups, balanced diet, carbohydrates, protein, fats, vitamins and minerals, nutrients Evaluate, investigate, analyse, product, design, create, explore, purposeful, functional, appealing, design criteria Farmed, grown, reared, caught, processed, safe, palatable, tasty Europe, wider world, seasonal, seasonality, locally produced Ingredients, recipe, techniques, processes, skills, prepare, combine, Cut, slice, chop, mash, mix etc.