Design & Technology Intent Statement: Create, make, evaluate. Design and Technology inspires children to solve the world's problems. By designing, making and evaluating, our children use their technical skills and knowledge to develop products fit for purpose, for a given audience, within a real life context. We encourage pupils to become confident, creative risk takers and problem solving citizens who will have the skills to contribute to future advancements in a rapidly changing world.

Cooking is a skill for life. With regular cooking practise, our pupils will understand how to use tools safely to prepare healthy meals and follow recipes that make up a balanced diet. We want our pupils to understand the importance of maintaining optimal health through a varied diet and to enjoy the process of cooking. We encourage our pupils to be resilient chefs, taking creative risks in the kitchen through flavour and texture combinations by adapting recipes and evaluating through taste testing theirs and others meals.

EYFS progression of skills

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Cooking and nutrition
	To experiment with mixing colours	To explore using different mark making tools To explore creating simple representations	Developing own ideas and construct with a purpose in mind Explore using different techniques for joining materials	To choose an appropriate tool for a task To create simple representations	Explore joining, manipulating and assembling techniques	Test a finished product and adapt as necessary To share creations, talk about the process and finished products and evaluate their work	• Measure or weigh using measuring spoons and/or cups • Cut soft ingredients, with support • Combine cold ingredients • Assemble ingredients • Understand the need for an adult to use an oven • Know how to wash hands and remember to wear an apron prior to cooking • Recognise their own favourite foods • Identify a selection of healthy foods • Know that a healthy diet involves eating 5 portions of fruit /vegetables a day • Explain that food comes from plants or animals • Give examples of foods from plant and animal sources
Year R	• To know how to use a corer, peeler, scissors and knives safely <u>Vocabulary</u> join, stick, cut, scissors, snip, tape, glue, fold, decoration, decorate, idea, stick, like, dislike sweet, roll, measure, weigh, decorate, dough, ingredients, mix, apron, biscuit, icing, bowl, sieve, rolling pin, cutter, oven, like, dislike fruit, sweet, sour, mix, cut, measure, ingredient, healthy, unhealthy, weigh, apron, smoothie, pancake, soft, juicy, sticky, crunchy, hard, skin, seed, pip, core, slice, peel, knife, chopping board, bowl, sieve, like, dislike move, materials, bumpy, smooth, hard, strong, weak, shiny, rough, test, forwards, backwards, join, fix, glue, stick build, strong, weak, join, core, slice, peel, cut, handle, thick, thin, base, top, side, like, dislike spread, cut, measure, ingredient, healthy, unhealthy, fillings, sandwich, apron, crunchy, sweet, sour, juicy, skin, knife, chopping board, like, dislike boat, float, sink, strong, test, weak, build, tape, glue, stick, cut, scissors, join, forwards, backwards, base, top, side, rough, smooth, shiny, hard, bumpy, like, dislike						

Y1 – Y6 Progression of objectives, skills and vocabulary

	Structures Design Make Evaluate Technical knowledge	Mechanisms Design Make Evaluate Technical knowledge	Textiles Design Make Evaluate Technical knowledge	Electrical systems Design Make Evaluate Technical knowledge	Digital Worlds Design Make Evaluate Technical knowledge	
Year 1	<u>Windmills</u> • Learn the importance of a clear design criteria • Make stable structures from card, tape and glue • Evaluate and adapt my windmill, testing whether it is strong and stable • To understand that shapes of materials can be used to improve the strength and stiffness of structures • To understand that cylinders are a strong type of structure • To know that a structure is something that is made and put together	<u>Moving story book</u> • Design a moving story book for a given audience • Create moving models that use sliders and levers • Test a finished product to see if it moves or not, and if not, explain why and how it can be fixed • To know that a slider moves from side to side and has a guide, slot and object • To know that a mechanism is the parts of an object that move together <u>Wheels and axles</u> • Design a vehicle that includes wheels, axles and axle holders • Adapt mechanisms • Test mechanisms and identify what stops a wheel from turning • To know that a wheel needs to be round to rotate and move • To know that a rotating axle moves within an axle holder which allows the wheel to rotate	<u>Puppets</u> • Use a template to create a puppet design • Cut fabric using scissors • Use joining methods to decorate a puppet • Express likes and dislikes about own puppet • To know joining methods: stapling, pinning and gluing • To know that a design is useful to see how an idea might look	N/A	N/A	<u>Fruit kebabs</u> • To taste and compare fruits and vegetables • To design a fruit/ vegetable kebab • Chop fruit safely • Make a fruit/ vegetable kebab • Taste and evaluate fruit combinations, describing taste smell and appearance • To understand the difference between fruits and vegetables • To identify if a food is a fruit or vegetable • To identify where plants grow and which parts we eat • Use digital scales to measure out dry ingredients • Grate soft ingredients (e.g. cheese) • Stir wet ingredients into dry to combine • Assemble ingredients • Understand the need for an adult to use an oven or hob • Know why we wash hands and wear an apron prior to cooking • Follow simple recipes (verbal instructions) • Understand why humans need to eat • Explain that food comes from plants or animals • Sort foods into plant or animal groups
Vocab	design, evaluation, net, stable, strong, structure, test, unstable, weak, windmill	assemble, design, mechanism, evaluation, model, slider, stencil, target audience, template, test axle, axle holder, chassis, design, evaluation, fix, mechanic, mechanism, model, test, wheel	decorate, design, evaluation, fabric, glue, model, hand puppet, safety pin, staple, stencil, template			fruit, healthy, ingredients, peel, recipe, slice, kebab, skewer, template, vegetable

Year 2	<u>Baby Bear Chair</u> • Learn about different types of structures found in the natural world and everyday objects • Make a strong, stiff structure by creating joins and folds using paper, card and tape • Evaluating the strength, stiffness and stability of own structure • To know that shapes with wide flat bases or legs are the most stable • To know that a stable structure is one that cannot be moved • To know that a strong structure is one that does not break easily • To know that a stiff structure is one that does not bend easily • To know that materials can be manipulated to improve strength and stiffness • To understand that a shape of a structure can affect its strength	<u>Moving monster toy</u> • Design a moving monster toy for a specific audience using design criteria • Make linkages using card and split pins for pivots • Cut and assemble components neatly • Evaluate own ideas against design criteria • Know that mechanisms are a collection of moving parts that work together to produce movement • Know that a lever is something that turns on a pivot • Know that a linkage is made of a series of levers <u>Fairground wheel</u> • Design a fairground wheel and selecting materials based on their properties • Select materials according to their characteristics • Follow a design brief • Evaluate, test and adapt a design • Know that different materials have different properties that are suitable for different uses	<u>Christmas stockings/pouches</u> • Design a pouch or Christmas stocking • Sew a running stitch with evenly spaced, neat stitches to join fabric • Decorate using fabric glue • Evaluate stitching compared to design criteria • To know that sewing is a way to join fabric • To understand the importance of tying a knot after sewing the final stitch	N/A	N/A	<u>Healthy wrap</u> • Design a healthy wrap including ingredients from several food groups • Slice ingredients safely using bridge or claw method • Construct a wrap using ingredients in design • Evaluate ingredient combinations, describing taste, texture and smell • To know that to stay healthy, we need to eat a balanced diet • To know the food groups: carbohydrates, protein, fruit/vegetables, dairy and foods in high fat/sugar • Begin to use analogue scales to measure out dry ingredients • Cut (bridge and claw grip) soft ingredients • Sift ingredients into a bowl • Use a pastry/cookie cutter • Understand the need for an adult to use an oven or hob • Explain why we wash hands and wear an apron prior to cooking • Follow simple recipes (instructions using images) • Understand that humans get nutrition from what they eat • Sort foods into plant or animal groups • Explore where some food comes from (e.g. tomatoes grown in greenhouses, milk from cows)
Vocab	function, man made, natural, stable, stiff, strong, structure, test, weak	axle, decorate, evaluation, ferris wheel, mechanism, stable, strong, test, waterproof, weak evaluation, input, output, lever, linkage, mechanism, pivot	fabric, knot, pouch, stocking, running-stitch, sew, shape, stencil, template			diet, balanced diet, evaluation, expensive, healthy, nutrients, packaging, sugar, substitute, ingredients
Year 3	<u>Castles</u> • Design a castle with key features to appeal to a specific person/ purpose • Construct a castle using a range of 3D geometric shapes as nets	N/A	<u>Cushions</u> • Design and make a template for a cushion • Sew a cross stitch to join fabric • Use applique to decorate	N/A	<u>Electronic charm</u> • Suggest potential features of a Micro:bit and justify my ideas • Develop design ideas for a technology pouch	• Use scales to measure out dry ingredients to the nearest 100 grams • Cut (bridge and claw grip) hard ingredients • Break an egg and beat with a fork

	• Evaluate own work based on the aesthetic and compared to the original design • Suggest modifications • To understand that wide and flat based objects are more stable • To understand the importance of strength and stiffness in structures		• Thread a needle, tie knots, use fabric scissors • Complete design by using stuffing and sewing the edges • Evaluate the cushion and think of other ways to make similar products • To know that when two edges of fabric are joined together it is called a seam • To understand that some products are turned inside out to hide the seam • To know that applique is a way of decorating fabric by adding smaller pieces of fabric		• Draw and manipulate 2d shapes using CAD to produce a point of sale badge • Use a template when cutting and assembling the badge • Select and use appropriate tools and equipment for cutting, joining, shaping and decorating foam pouch • Apply functional feature (e.g. using foam to make buttons) • Write a program to initiate a flashing LED algorithm • Analyse and evaluate an existing product • Identify the key features of a pouch • To know that a micro bit is a pocket sized computer that is codeable • To know that a simulator can be used to test that a code works • To understand that a loop is code that repeats something again and again until stopped	• Spread soft ingredients (e.g. mayonnaise onto bread) • Prepare food for baking and frying e.g. greasing baking tins • Understand that some foods should be kept in a fridge • Follow simple recipes • Understand the 'eat well plate' & know that we need to eat more of some foods than others • Sort foods into plant or animal groups (covered in science) • Explain where some food comes from (e.g. tomatoes grown in greenhouses, milk from cows)
Vocab	2d shapes, 3d shapes, castle, design criteria, evaluate, façade, feature, flag, net, recyclable, scoring, stable, strong, structure, tab, weak		Accurate, applique, cross-stitch, cushion, decorate, detail, fabric, patch, running-stitch, seam, stencil, stuffing, target audience, template		smart wearables, product design, digital revolution, technology, analogue, digital, feature, function, digital world, Micro:bit, electronic products, program, loops, initiate, simulator, control, monitor, sense, template, develop, fasten, test, user CAD, point of sale, display, badge, stand	
Year 4	N/A	<u>Slingshot cars</u> • Design a shape that reduces air resistance • Make a model based on a design • Build a car chassis	N/A	<u>Torches</u> • Design a torch and create design criteria focusing on individual features by considering the target audience • Make and assemble a torch with an electrical circuit and switch • Test and evaluate the success of the torch	N/A	<u>Biscuits</u> • Design a biscuit based on taste testing • Make biscuits safely following a recipe • Adapt a recipe • Evaluate a recipe considering: taste, smell, texture and appearance • To know the following cooking techniques: sieving, creaming, rubbing, cooling

		• Evaluate the speed of the final product based on accuracy and design shape • To understand that all things moving have kinetic energy • To know that kinetic energy is the energy that something has when it is moving		• To know all the components of a circuit (electrical conductor, insulator, battery, electrical circuit and switch) • To know the features of a torch (case, contacts, batteries, switch, reflector, lamp, lens)		• Use scales to measure out dry ingredients to the nearest 50 grams • Peel and mash ingredients • Rub fats into flour • Roll food to a specific thickness • Safely cook using a hob • Follow procedures for clearing/ cleaning up • Use simple food descriptors relating to smell, flavour, texture and appearance • Design a healthy meal • Explain where some food comes from (e.g. tomatoes grown in greenhouses, milk from cows) • Understand why some people choose not to eat certain foods
Vocab		aesthetic, air resistance, chassis, design, criteria, function, graphics, kinetic energy, mechanism, net, structure		Battery, bulb, buzzer, cell, component, conductor, copper, design criteria, electrical item, electricity, electronic item, function, insulator, series circuit, switch, test, torch, wire		Adapt, budget, equipment, evaluation, flavour, ingredients, method, net, packaging, prototype, quantity, recipe, target audience, unit of measurement, utilities
Year 5	<u>Bridges</u> • Design a stable structure that can support weight • Make a range of different shaped beam bridges • Build a wooden bridge structure by using the correct saw techniques • Adapt and improve bridge structure by identifying points of weakness and reinforcing them • Suggest points of improvement of own and others • To understand ways to reinforce structures • To understand how triangles can be used to reinforce bridges • To understand the material properties of wood (functional and aesthetic)	<u>Pop up books</u> • Design a pop-up book using a mixture of structures and mechanisms • Make a pop-up book using sliders, pivots, folds, levers to produce movement • Evaluate peer pop-up books, suggesting points for improvement • To know that mechanisms control movement • To understand how to use sliders, pivots and folds to create paper mechanisms • To understand that mechanisms can be used to change one kind of movement to another	<u>Stuffed toys</u> • Design a stuffed toy by considering component shapes and creating a template • Sewing a strong, secure, neat blanket stitch to join fabric • Thread a needle independently • Measure, mark and cut fabric accurately and independently • Use applique to attach decoration • Test and evaluate a stuffed toy, giving points for further improvement • To know that a blanket stitch joins two pieces of fabric • To know that small, neat, taut stitches are important to ensure the toy is strong and holds in the stuffing securely • To know that soft toys are made by attaching pieces	N/A	N/A	• Use measuring jugs to measure out wet ingredients to the nearest 100 millilitres • Cut food into evenly sized pieces • Cream fat and sugar together • Knead dough then form shapes (e.g. rolls) • Safely cook food using an oven • Initiate procedures for clearing/ cleaning up • Identify how to change a recipe to improve the outcome • Design a week's healthy meal plan • Understand that the 'location of origin' explains how far a food item has travelled • Explore which foods are in season in Britain and plan a meal accordingly

			(made separately) to the main body			
Vocab	accurate, arched bridge, beam bridge, coping saw, evaluation, measure, predict, reinforce, research, sandpaper, set square, suspense bridge, tenon saw, test, truss bridge, wood	aesthetic, CAD, caption, design criteria, design brief, exploded diagram, function, input, linkage, mechanism, motion, output, pivot, prototype, slider, structure, template	accurate, annotate, appendage, blanket- stitch, design criteria, detail, evaluation, fabric, sew, shape, stuffed toy, stuffing, template			•
Year 6	N/A	<u>Automata toys</u> • Experiment with a range of cams and create a design for an automata toy based on a choice of cam to create a desired movement. • Understand how linkages change the direction of a force. • Understand and draw cross-sectional diagrams to show the inner-workings of my design. • Measure, mark and cut wood accurately to prepare for assembly. • Assemble the automata frame components accurately to make a stable frame. • Understand that for the frame to function effectively, the components must be cut accurately and the joints of the frame secured at right angles. • Evaluate their automata toy, making descriptive and reflective points on function and form. • Understand that the mechanism in an automata uses a system of cams, axles and followers. • Understand that different shaped cams produce different outputs. • Understand how to use a bench hook and saw safely.	N/A	N/A	<u>Navigating the world</u> • Write design criteria for an intended audience • Develop a product idea through annotated sketches • Program a N, E, S, W cardinal compass • Consider materials and their properties, particularly those which are sustainable and recyclable • Explain the key functions/ features of the program and how the program fits the design criteria • To know that accelerometers can detect movement • To understand that sensors can be useful because they do not require human input to function	<u>Come dine with me</u> • To research and design a 3 course meal including facts and drawings • Write a recipe, explaining the method and ingredients • Adapt a recipe based on research • Follow a recipe, using the correct quantities • Work to a given timescale • Work safely and hygienically • Evaluate a recipe considering taste, smell, texture, and origin of food group • Taste test and score final products • Evaluate through the planning, preparation and cooking process • To know that flavour is how a food or drink tastes • To understand where food comes from • To know that processed food means food that is put through changes in a factory • To know that many countries have 'national dishes' which are recipes associated with that country • To understand that it is important to wash fruit and vegetables before eating to remove dirt and pesticides • Use scales to measure out dry ingredients to the nearest 10 grams • Dice food into evenly sized pieces • Confidently crack an egg • Knead dough and form to make more complex shapes (e.g. plaits)

		• Know that a set square can be used to help mark 90° angles.				• Handle hot food safely: using oven gloves to carefully remove cooked food, with a fish slice, from a baking tray • Initiate procedures for clearing/ cleaning up • Design own recipes, including various ingredients and methods • Know appropriate portion sizes and the importance of not skipping meals • Understand the importance of welfare standards (red tractor label) • Explore the choices available to them as a consumer (including welfare, price and food miles)
Vocab		assembly-diagram, automata, axle, bench hook, clamp, cam, component, cutting list, dowel, drill bits, exploded- diagram, finish, follower, frame, function, hand drill, jelutong, linkage, mark out, set square, tenon saw			3D CAD, app, biodegradable, cardinal compass, concept, corrode, environmentally friendly, equipment, feature, finite, function, functional, GPS tracker, infinite, investment, lightweight, loop, manufacture, mouldable, navigation, non – recyclable, product lifespan, program, recyclable, smart, sustainable, unsustainable, variable	equipment, bridge method, method, flavour, ingredients, recipe, research, target audience, evaluation, unit of measurement, preparation, processed food, cross – contamination, consumer, welfare standards, dice, knead, portion size

Recipe progression - * cooking unit

	Recipe 1	Recipe 2	Recipe 3	Recipe 4	Recipe 5	Recipe 6
Year R	Biscuits		Pancakes	Fruit tasting	Sandwiches (spreading)	
Year 1	Pitta pizzas	Christmas cake	Savoury muffins	Fruit kebabs*	Fairy Cakes	Sandwiches (Fillings)
Year 2	Scones	Gingerbread reindeer	Frittata muffins	Sugar free flapjacks	Spring rolls	Healthy wrap*
Year 3	Hummus dip	Mince pies	Pizza	Vegetable kebabs	Vegetable croquettes	Vegetable risotto
Year 4	Biscuits*	Vegetable patties	Fishcakes	Black bean quesadillas	Ready Steady Cook	N/A
Year 5	Vegetable stew	Cookies	Spaghetti Bolognaise	Mocktails	Bread rolls	Pitta and Tzatziki
Year 6	3 course meal*	Vegetable curry	Bread plaits	Beef burgers	Cake (TBC)	N/A