Knowledge & Skills Progression: EYFS to Year 6

Design & Technology Curriculum

Yr	Term	Unit of Work	Design	Make	Evaluate	Technical Knowledge	Cultural Capital	End Points
EYFS	Aut/ Spr & Sum	Puppets Vehicles Perfect Pizzas	• I can follow a simple design to make a puppet. • I can choose materials to make a moving vehicle. • I can choose toppings for my pizza.	• I can make a simple puppet using a range of materials. • I can make a moving vehicle . • I can make a pizza using toppings provided.	I can say what I like about my puppet. I can say how I might be able to make my puppet better next time.	• I know different materials have different properties and can be used for different purposes. • Everyday products are objects that we use every day. These objects have a specific use. • Vehicles and machines have wheels and axles to help them move. • Digital devices can be used to share information about creations with others.	Eat some new foods that you may not have tried before.	**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; - Make use of props and materials when role playing characters in narratives and stories.** **Use a range of small tools, including scissors, paint brushes and cutlery; - Begin to show accuracy and care when drawing.**

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1	Aut	Eat More Vegetables		• I can use a knife to cut some fruits and vegetables in different ways. • I can grate an apple and a carrot. I can peel a banana, apple and cucumber.	• I can use adjectives to describe the taste, smell and texture of a variety of fruits and vegetables.	• I can name a variety of fruits and vegetables. • I know that some fruits and vegetables need to be washed, cut, cored, peeled or grated before they can be eaten. I understand basic food hygiene, e.g. washing hands, tying long hair back and keeping surfaces clean.		**End of Y2:** **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** **Select from and use a range of tools and equipment to perform practical tasks.** **Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics** **Build structures, exploring how they can be made stronger, stiffer and**
1	Spr	Moving Mini-beasts	• I can design a moving minibeast picture to include a variety of moving mechanisms. • I can follow a design to create a moving minibeast picture for a particular purpose.	• I can make a sliding mechanism out of card. • I can use a pivot and lever mechanism using card and a split pin. • I can make a wheel mechanism using card and a split pin. • I can match a mechanism to the type of movement they produce.	• I can evaluate my finished moving minibeast picture by identifying things that worked well and things that could be improved.	• I know what a pivot and lever are.	Study local engineers David McMurtury/John Deer (Renishaw), scientists, designers, inventors and other people in important roles. STEM Team from Institute of Mechanical Engineering - design, make & race Brush Monsters with circuits. Investigate Isambard Kingdom Brunel as one of our house names.	
1	Sum	Stable Structures	• I can identify the features of toy garages. • I can make changes to the design of a stable structure to make it fit for purpose. • I can follow a design to make a stable structure.	• I can make changes to the design of a stable structure to make it fit for purpose. • I can explore how to make stable structures that hold a given object.	• I can explore a range of materials and evaluate the usefulness of their properties for a particular project.	• I know what the word 'stable' means.		

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2	Aut	Puppets	• I can explore a variety of puppets, identifying and labelling their features. • I can design a glove puppet for a particular purpose.	• • I can use a knife to cut some fruits and vegetables in different ways. • • I can grate an apple and a carrot. • I can peel a banana, apple and cucumber.	• I can evaluate my finished glove puppet by identifying what went well and what could be improved.	• Everyday products are objects that are used routinely at home and school, such as a toothbrush, cup or pencil. All products are designed for a specific purpose. • Fabric can be decorated using materials and small objects, such as buttons and sequins. Decorations can be attached to the fabric by gluing, stapling or tying.		**more stable**
2	Spr	Vehicles	• I can investigate a range of vehicles, identifying and labelling their features. • I can design a vehicle with wheels, axles and chassis, as well as a body. • I can follow a design to make a moving vehicle.	• I can explore different ways of using axles, chassis and wheels to create a moving base.	• I can evaluate my finished moving vehicle.	• I know what an axle is. • I know what a chassis is.	Discuss Renishaw's involvement with Bloodhound car in its endeavour to be fastest car in the world. Investigate Katharine Johnson – first black female engineer to work for NASA.	**Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria** **Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.**
2	Sum	Perfect Pizzas	• I can design and make a healthy pizza following given criteria.	• I can explore different types of bread and evaluate which would work best for a pizza base	• I can evaluate my finished pizza, saying what I think and feel about it. • I can use the model of the balanced plate to evaluate how healthy different pizzas are. • I can name a variety of pizza toppings.	• I can explain why each of the food groups is important for a balanced diet. • I can identify which food group a variety of pizza toppings belong to. • I can sort pizza toppings into groups based on different criteria, e.g. animal vs plant products.	Cook for a special visitor, e.g. the Bishop's Visitor	

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								Use the basic principles of a healthy and varied diet to prepare dishes
Vocabulary Progression EYFS - planning, design, choose, make, user, purpose, ideas, product, cut, join, pull, push, up, down, forwards, backwards fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet.			Year 1 - investigating, evaluate, product vehicle, wheel, axle slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, straight, curve, cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder. sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing. Vocabulary related to hygiene and safety		Year 2 - design criteria, function, suitable, categorise, evaluate axle holder, chassis, body, cutting, joining, shaping, finishing, fixed, free, moving, mechanism, names of tools, equipment and materials used, choosing, ingredients, planning, investigating tasting, arranging, popular. Healthy, balanced diet, nutrients, food groups-carbohydrate, protein, vitamins, minerals, fats, sugar.			
3	Aut	British Inventors	• I can investigate ways of making fabric waterproof.	• I can create a structure strong enough to hold a dictionary using just newspaper and tape.		• I can explain how concrete is used to make structures more stable. • I can explain about the invention of the world wide web. • I can describe how the invention of the internet has changed the world.	Explore British/local inventors -Isambard Kingdom Brunel (house name), Charles Macintosh, David McMurtury. Create portfolio for annual Greenpower Electric Go Kart Competition at Renishaw Plc.	**End of Y6:** **Generate, develop, model and communicate their ideas through talking, drawing, templates, prototypes and, where appropriate, information and communication technology**

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								Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
3	Spr	Light-up Signs	• I can design an illuminated light box against a set of design criteria. • I can select materials, tools and components to create a free-standing structure.	• I can make a stable, free-standing structure to house an electrical circuit. • I can strip, twist and join wire to make permanent connections. • I can insert an electrical circuit into a free-standing structure to create an illuminated light box. • I can create a simple circuit with an LED bulb and a resistor. • I can make a circuit with a string of LED lights. • I can create a simple circuit with incandescent bulbs and a switch.	• I can evaluate the effectiveness of my finished product against the design criteria. • I can explore and analyse illuminated signs.	• I can describe the difference between an LED and an incandescent light bulb.	Explore inventor Alexander Graham Bell. Construct and race Greenpower Electric Go Kart ready for annual competition; investigate lightweight, recyclable materials to use for decoration.	**Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics**
3	Sum	Story Books	• I can experiment with different fonts and graphic design features. • I can design pages of a storybook to include moving mechanisms and appropriate graphic features. • I can follow my designs to create a storybook with moving mechanisms.	• I can use a paper concertina to make an object pop out of a book. • I can arrange and stick paper between pages to create a pop-out. • I can use levers to create moving parts. • I can create moving wheel mechanisms to create different effects.	• I can evaluate how well my moving mechanisms work. • I can evaluate the overall effectiveness of my storybook.	• I can explain what the words 'linkage', 'pivot', 'rotate' and 'lever' mean. • I can explore moving parts in storybooks, suggesting how they work and what purpose they serve.		

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4	Aut	Seasonal Food	• I can use what I have learnt about seasonal food to design healthy meals and menus.	• I can follow a recipe to make meatballs. • I can follow a recipe to make fruit tarts using seasonal fruit. • I can follow a recipe to make stuffed peppers. • I can practise cooking skills including slicing, dicing, beating, whisking, folding, sieving, rolling and grating. • I can follow a recipe to make fairy cakes.		• I know some vegetarian options that provide the same nutrients as meat. • I can explain how fish are caught or reared, processed and used in healthy meals. • I know some of the nutrients we get from fruits, vegetables, meat, fish and dairy products. • I know when certain meats are in season in the UK and which are available all year round. • I can describe the cycle of wheat production in the UK. • I can distinguish between fruits that are grown in the UK and those that are grown abroad. • I know how food producers can speed up or slow down the ripening process to make fruits and vegetables available all year round. • I can explain what the term 'seasonal food' means. • I know that different parts of the world have different seasonal food. • I can discuss the benefits and problems of unseasonal food being available in shops all year round. • I know that some foods, like wheat, are available all year round in the UK.		.
4	Spr	Making Mini-Green-houses	• I can design a mini greenhouse using specific design criteria. • I can explore a range of different greenhouses.	• I can select appropriate tools and materials to make a mini greenhouse. • I can follow my design to make a mini greenhouse. • I can use 3D nets to explore potential structures for a greenhouse, assessing their stability. • I can investigate ways of making a structure more stable, e.g. by inserting dowelling or adding triangles at the joins. • I can experiment with a range of materials to test which would be most appropriate for making the structure of a mini greenhouse.	• I can evaluate my finished mini greenhouse for stability, effectiveness and visual appeal.	• I know how greenhouses are used today. • I can explain how the shape of a structure affects its stability. • I know that the weight of the structure needs to be evenly spread on the base to make it secure. • I know that the wider a structure's base is, the more stable it will be. • I know what a greenhouse is and how they work.		.

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4	Sum	Seasonal Stockings	• I can design a Christmas stocking incorporating a range of decorative techniques.	• I can use a template to cut out front and back pattern pieces. • I can follow a design to create a Christmas stocking. • I can sew a button, bead, sequin or pipe cleaner onto a piece of fabric. • I can embroider shapes and patterns into a piece of fabric. • I can use appliqué to add decoration to a piece of fabric. • I can use pins to temporarily fasten two pieces of fabric together. • I can use running stick, back stitch, overstitch and zigzag stitch to join two pieces of fabric together. • I can hide the finishing knot.	• I can evaluate the function and visual appeal of my finished Christmas stocking • I can evaluate the function and visual appeal of a variety of Christmas stockings.. • I can explain the difference between the function and visual appeal of a product.	• I can identify a variety of decorative techniques that have been used to decorate Christmas stockings.		.
5	Aut	Building Bridges **cross curricular art - recycled materials (reinforcing)**	• I can design, make and evaluate a prototype suspension bridge using a scale of 1:100 according to specific design criteria.	• I can test the arch heights to see which can bear the most load. • I can make an arch frame. • I can build a truss bridge spanning a width of 40cm using paper straws. • I can predict which beams will be strongest from their cross-section. • I can test the strength of different beam shapes using paper and card.	• I can use a fair test to evaluate the strength of my truss bridge. • I can explain how arches work to make bridges stronger.	• I can explain how suspension bridges use tension forces to work. • I can identify the three types of trusses commonly used in bridge design. • I can explain what a truss is and how trusses make bridges stronger. • I know what beams and pillars are and how they are used in bridge construction.	K'Nex challenge includes the use of a mechanism in each design brief Visit/ video Clifton Suspension Bridge	**Apply their understanding of how to strengthen, stiffen and reinforce more complex structures**

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5	Spr	Chinese Inventions	• I can make a variety of kite prototypes and test their effectiveness. • I can design, make and evaluate a kite according to specific design criteria. • I can design and label my own compass.	• I can make a hanging/floating compass. • I can test a variety of types of paper for strength, absorbency, opacity, etc. • I can make recycled paper. • I explore how different transmissions create different movements. • I can use a crank to change the motion on a transmission from circular to linear motion.		• I can explain what water-powered machines are and how they helped change the world. • I can explain why kites were first invented and how they were made. • I know how gunpowder was invented. • I can explain how the invention of gunpowder helped shape the world. • I can explain how the invention of the compass changed the world. • I can explain how the invention of paper helped shape the world. • I can explain the traditional method for making paper.	Visit WSP in Stroud to see sports & leisure cloth being manufactured. Explore the history of the woollen industry in Wotton-under-Edge. Importance of cloth and clothes worn throughout history and by different religions - Glastonbury Abbey Saxons clothing workshop Gloucester Mosque - traditional Muslim dress workshop STEM Team from Institute of Mechanical Engineering/ High-Speed Rail Solutions visit – design, make & race Brush Monsters. chess club Brush monsters STEM activity	.
5	Sum	Fashion & Textiles	• I can design a drawstring bag, including the necessary pattern pieces.	• I can use pattern pieces to measure, mark, cut and sew fabric. • I can sew design elements according to design criteria. • I can join two pieces of fabric by hand sewing, using an appropriate stitch. • I can describe what the job of a fashion designer entails. • I can sew a basting stitch. • I can sew a whip stitch. • I can sew a hem. • I can sew back stitch. • I can sew an appliqué decoration. • I can use back stitch to embroider.	• I can evaluate my finished product against a set of design criteria.	• I know what a pattern piece is and why they are important when designing a garment. • I can explain the process of turning raw cotton into cloth. • I know that products that are woven together are called textiles. • I know that different textiles have different properties, and can match these to their purpose. • I can identify straight stitch, zigzag stitch, whip/blanket stitch, blind stitch, buttonhole stitch and overlock stitch on a variety of ready-made garments.		.
6	Aut	Programm-ing Pioneers **Cross Curricular computing designing a sprite programmin g pioneers (BBC microbit)**	• I can suggest ways to change an algorithm to improve a system.	• I can select and use electronic components to construct a prototype of an embedded computer-controlled room system. • I can debug errors in an algorithm. • I can develop and build a prototype pedestrian crossing using computer programming. • I can develop, model and communicate ideas for an embedded system which monitors and controls a door, room or both. • I can write an algorithm to suggest how various appliances might work.	• I can evaluate my design for a computer-controlled system and consider the views of others to improve my work. • I can describe the typical design process for computer-controlled electronic products.	• I know what a computer engineer is and what they do. • I can describe some examples of how computer hardware and software specialists work together to create new products. • I can explain how computers and computer programs are used in a variety of products. • I can explain how modern memory chips work to store information.		. **Apply their understanding of computing to program, monitor and control their products.**

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6	Spr	Bird House Builders	• I can design a bird house for a particular bird, taking into account the bird's needs. • I can select appropriate tools and materials to use when making a bird house. • I can draw an exploded diagram. • I can investigate the appearance and function of a variety of different bird houses.	• I can create a sturdy bird house frame using wood. • I can measure, clamp, saw, sand and join wood. • I can use a hand drill to drill a hole in a piece of wood. • I can create a flat pack diagram of a constructed bird house.	• I can evaluate my finished bird house, taking into account the views of others to improve my work. • I can use observation to evaluate the effectiveness of my bird house.	• I know the safety rules I need to follow when doing woodwork. • I can identify the tools associated with basic woodwork. • I can identify what materials have been used to construct a variety of bird houses and suggest how the parts have been joined together. • I know what a flat pack diagram is and can use it to identify each part of a structure.		·
6	Sum	Burgers **cross curricular RE - the Last Supper**	• I can design a burger for a particular purpose. • I can design a burger for someone with particular dietary requirements. • I can design a burger menu to incorporate different patties, sides and sauces.	• I can make and evaluate a burger, following • I can add mixtures of herbs and spices to a basic bread dough to make flavoured burger buns. my recipe and design. • I can explore, taste and assess different types of bread and their suitability for a burger bun. • I can follow a recipe to make a beef, turkey or vegetable burger patty. • I can add ingredients to a basic burger patty to reflect global cuisine. • I can follow a recipe to make different burger sauces, including salsa, tzatziki and barbecue sauce.	• I can evaluate how healthy a burger is based on its nutrition label. • I can compare different burgers and assess which is healthiest.	• I can offer suggestions for some alternatives for bread. • I can explain some of the different ways in which burger patties are cooked. • I know that most foods we buy have nutrition labels to help us make informed choices about what we eat. • I know that calories come from fats, proteins and carbohydrates.	Reference to British chefs, Jamie Oliver and British Bake Off winner, Nadiya Hussain. Coffee morning with baking by Y6 for parents and visitors. Agape meal – make make and decorate biscuits for events such as Children in Need, coronation, etc making burgers/fairy cakes for specific event - e.g. homework celebration, parents evening, retirement celebrations Try special lunch menus from Caterlink to try new food types. Visits to school allotment to grow fruit and vegetables and pick/eat produce. Weekly Nature Club run by local gardener – plant/grow/harvest produce in school allotment.	· **Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques**

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Vocabulary Progression	Year 3 user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision, rotate, pivot, lever, linkage, axle, chassis (from Y2) mechanism	Year 4 evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design, cross section, criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluations name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet white flour, wholemeal, seeded, brioche, ciabatta decorate, hem, pattern, template, overstitch, running stitch, fabric, cotton, velvet, felt, ribbon, satin, patch, garment, ready-made illuminate, incandescent, LED, resistor, buzzer, battery, components, freestanding, stable, bulb, switch	Year 5 design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent transmission, crank, motion (circular and linear) applique, running stitch, back stitch, embellish, imprint, embroider	Year 6 function, innovative, design specification, design brief, user, purpose prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype ingredients, pattie, vegetarian, flour, wholemeal, spice, herbs fat, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble		.