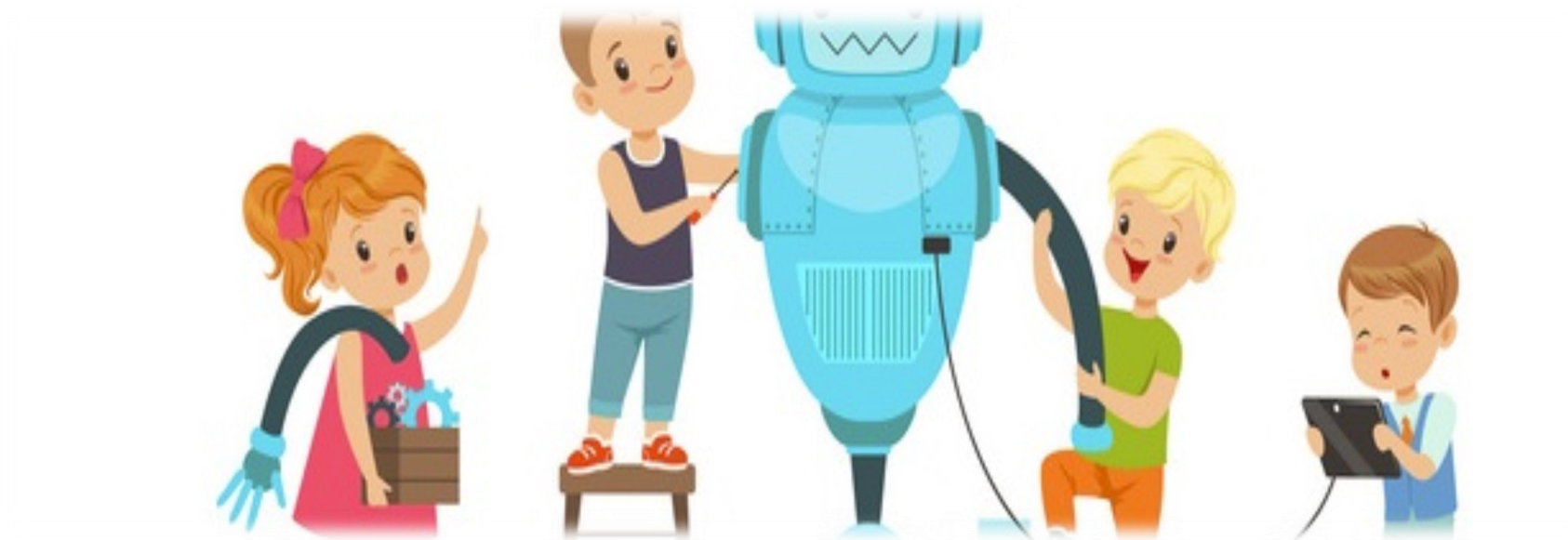


Design Technology





Design and Technology Progression

Skills



	Nursery	Reception	Year 1	Year 2
Developing, planning and communicating ideas	<p>Birth to 5 Matters Range 5</p> <p>Develops an understanding of using lines to enclose a space, and begins to use drawing to represent actions and objects based on imagination, observation and experience</p>	<p>Birth to 5 Matters Range 6</p> <p>Uses their increasing knowledge and understanding of tools and materials to explore their interests and enquiries and develop their thinking</p>	<p>Generate ideas by drawing on their own experiences</p> <p>Use knowledge of existing products to help come up with ideas</p> <p>Develop and communicate ideas by talking and drawing</p> <p>Model ideas by exploring materials, components and construction kits and by making templates and mock-ups</p>	<p>Generate ideas by drawing on their own and other people's experiences</p> <p>Develop their design ideas through discussion, observation, drawing and modelling</p> <p>Identify a purpose for what they intend to design and make</p> <p>Identify simple design criteria</p> <p>Make simple drawings and label parts</p>
Working with equipment, tools and components to make quality products	<p>Birth to 5 Matters Range 5</p> <p>Uses tools for a purpose</p> <p>Uses various construction materials, e.g. joining pieces, stacking vertically and horizontally, balancing, making enclosures and creating spaces</p>	<p>Early Learning Goal</p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function</p>	<p>Make their design using appropriate techniques</p> <p>Measure, mark out, cut and shape a range of materials with support</p> <p>Use tools e.g. scissors and a hole punch safely</p> <p>Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape</p> <p>Select and use appropriate fruit and vegetables, processes and tools</p> <p>Use basic food handling, hygienic practices and personal hygiene</p> <p>Use simple finishing techniques to improve the appearance of their product</p>	<p>Begin to select tools and materials; use vocab' to name and describe them</p> <p>Measure, cut and score with some accuracy</p> <p>Use hand tools safely and appropriately</p> <p>Assemble, join and combine materials in order to make a product</p> <p>Follow safe procedures for food safety and hygiene</p> <p>Choose and use appropriate finishing techniques</p> <p>Cut, shape and join felt to make a simple garment.</p> <p>Use basic sewing techniques – running stitch and over stitch to join 2 pieces of fabric</p> <p>Sew a button onto a piece of fabric</p>
Evaluating processes and products		<p>Early Learning Goal</p> <p>Share their creations, explaining the process they have used.</p>	<p>Evaluate their product by discussing how well it works in relation to the purpose</p> <p>Evaluate their products as they are developed, identifying strengths and possible changes they might make</p> <p>Evaluate their product by asking questions about what they have made and how they have gone about it</p>	<p>Evaluate against their design criteria</p> <p>Evaluate their products as they are developed, identifying strengths and possible changes they might make</p> <p>Talk about their ideas, saying what they like and dislike about them</p>

Design and Technology Progression

Skills



	Year 3	Year 4	Year 5	Year 6
Developing, planning and communicating ideas	<p>Generate ideas for an item, considering its purpose and the user/s</p> <p>Identify a purpose and establish criteria for a successful product.</p> <p>Plan the order of their work before starting</p> <p>Explore, develop and communicate design proposals by modelling ideas</p> <p>Make drawings with labels when designing</p>	<p>Generate ideas, considering the purposes for which they are designing</p> <p>Make labelled drawings from different views showing specific features</p> <p>Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail</p> <p>Evaluate products and identify criteria that can be used for their own designs</p>	<p>Generate ideas through brainstorming and identify a purpose for their product</p> <p>Draw up a specification for their design</p> <p>Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail</p> <p>Use results of investigations, information sources, including ICT when developing design ideas</p>	<p>Communicate their ideas through detailed labelled drawings</p> <p>Develop a design specification</p> <p>Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways</p> <p>Plan the order of their work, choosing appropriate materials, tools and techniques</p>
Working with equipment, tools and components to make quality products	<p>Select tools and techniques for making their product</p> <p>Create linkage and lever mechanisms that work well</p> <p>Select and use fonts and graphics that are suited to their purpose.</p> <p>Measure, mark out, cut, score and assemble components with more accuracy</p> <p>Work safely and accurately with a range of simple tools</p> <p>Think about their ideas as they make progress and be willing change things if this helps them improve their work</p> <p>Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT</p>	<p>Select appropriate tools and techniques for making their product</p> <p>Join and combine materials and components accurately in temporary and permanent ways</p> <p>Use simple graphical communication techniques</p> <p>Cut, shape and join fabric to make a simple garment.</p> <p>Measure, tape or pin, cut and join fabric with some accuracy</p> <p>Use running stitch, overstitch and zigzag stitch to join two pieces of fabric together.</p> <p>Hide the finishing knot.</p> <p>Sew a button, bead, sequin or pipe cleaner onto a piece of fabric.</p> <p>Embroider shapes and patterns into a piece of fabric and use appliqué to add decoration to a piece of fabric</p> <p>Create a simple circuit with incandescent bulbs and a switch.</p> <p>Strip, twist and join wire to make permanent connections.</p> <p>Demonstrate hygienic food preparation and storage</p>	<p>Select appropriate materials, tools and techniques</p> <p>Measure and mark out accurately cut and shape a range of materials, using appropriate tools, equipment and techniques</p> <p>Use skills in using different tools and equipment safely and accurately</p> <p>Cut and join with accuracy to ensure a good-quality finish to the product</p> <p>Pin, sew and stitch materials together to create a product</p> <p>Sew using a range of different stitches: a running stitch, overstitch, zigzag stitch, blanket stitch.</p> <p>Sew a hem.</p> <p>Sew an appliqué decoration.</p> <p>Independently thread a needle.</p>	<p>Select appropriate tools, materials, components and techniques</p> <p>Assemble components to make working models</p> <p>Use tools safely and accurately</p> <p>Construct products using permanent joining techniques</p> <p>Make modifications as they go along</p> <p>Achieve a quality product</p> <p>Weigh and measure accurately (time, dry ingredients, liquids)</p> <p>Apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens</p> <p>Sew using a range of different stitches: a running stitch, overstitch, zigzag stitch, blanket stitch. and back stitch.</p> <p>Create pattern pieces, including a hem allowance.</p> <p>Tie threads to ensure seams do not unravel.</p>
Evaluating processes and products	<p>Evaluate their product against original design criteria e.g. how well it meets its intended purpose</p> <p>Disassemble and evaluate familiar products</p>	<p>Evaluate their work both during and at the end of the assignment</p> <p>Evaluate their products carrying out appropriate tests</p>	<p>Evaluate a product against the original design specification</p> <p>Evaluate it personally and seek evaluation from others</p>	<p>Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests</p> <p>Record their evaluations using drawings with labels</p> <p>Evaluate against their original criteria and suggest ways that their product could be improved</p>

DT Progression



Textiles

Year 2:

Puppets

- I know a variety of puppets and can explore and identify them, labelling their features.
- I know how to add pieces of felt and other materials to a finger puppet to create features such as eyes, hats and mouths.

Year 4:

Seasonal Stockings

- I know the differences between the function and visual appearance of a product and can explain this.
- I know a variety of decorative techniques that have been used to decorate Christmas stockings.

Year 5:

Fashion and Textiles

- I can explain the process of turning raw cotton into cloth.
- I know that products woven together are called textiles.
- I know that different textiles have different properties and can match these to their purpose.
- I can identify running stitch, zigzag stitch, blanket stitch.

Year 6:

Fashion and Textiles

- I can identify a blind stitch, buttonhole stitch and overlock stitch on a variety of ready made garments.
- I know what a pattern piece is and why they are important when designing a garment.
- I can describe what the job of a fashion designer is.

DT Progression

Mechanical systems



Year 1:

Moving Minibeasts

- I know what a pivot and lever are.
- I know the names of some mechanisms and can match them to the type of movement they produce.

Year 2:

Vehicles

- I know what an axle and a chassis is.
- I can explore different ways of using axles, chassis and wheels to create a moving base.
- I can identify a variety of vehicles and label their features.

Year 3:

Storybooks

- I can explore moving parts in storybooks, suggesting how they work and what purpose they serve.
- I can explain what the words 'linkage', 'pivot', 'rotate' and 'lever' mean.

Year 5:

Chinese Inventions

- I explore how different transmissions create different emotions.

DT Progression



Materials and Structures

Year 1:

Stable Structures

- I can identify the features of toy garages.
- I know what the word 'stable' means.
- I can explore how to make stable structures that hold a given object.
- I know some ways to make a structure more stable.

Year 3:

British Inventors

- I can explain how concrete is used to make structures more stable.
- I can create a structure strong enough to hold a dictionary using just newspaper and tape.

Year 3:

Making Mini Greenhouses

- I know what a greenhouse is and how they work.
- I can explore a range of different greenhouses
- I know how greenhouses are used today.
- I can explain how the shape of its 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 a wider a structures base, the more stable it will be
- I can select appropriate tools and materials to make a mini greenhouse.

Year 5:

Building Bridges

- I know what beams and pillars are and how they are used in bridge construction.
- I can predict which beams are will be strongest from their cross—section.
- I can explain what a truss is and how trusses make bridges stronger.
- I can identify the three types of trusses commonly used in bridge design.
- I can explain how arches work to make bridges stronger.
- I can explain how suspension bridges use tension forces to work.

Year 6:

Bird House Builders

- 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.
- I can identify the tools needed for basic woodworking.
- I know the safety rules I need to follow during basic woodworking.
- I can design a bird house for a particular bird, taking into account the birds needs.
- I can select appropriate tools and materials to use when making a bird house.

DT Progression

Electrical Systems and Programming



Year 4:

Light-Up Signs

- I can explore and analyse illuminated signs.
- I can describe the difference between an LED and an incandescent light bulb
- I can select materials, tools and components to create a free standing structure.



DT Progression

Cooking and Nutrition

Year 1:

Eat More Fruits and Vegetables

- I can name a variety of fruits and vegetables
- I know how to use my senses to explore different vegetables and can use adjectives to describe their taste, texture and smell.
- I understand the basics of food hygiene such as washing hands, tying long hair back and keeping the surfaces clean.

Year 4:

Seasonal Food

- I can explain what the term 'seasonal food' means.
- I know that different parts of the world have different 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 and 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 food available all year round.
- I know some of the nutrients we get from fruits, vegetables, meat, fish and dairy products.
- I know when meats are in season in the UK and which are available all year round.
- I know some vegetarian options that provide the same nutrients as meat.
- I can explain how fish are caught or reared and processed to be used in healthy meals.

Year 2:

Perfect Pizzas

- I can name a variety of pizza toppings and identify the food group they belong to.
- I can explore different types of bread and evaluate which works best for my pizza base
- I can explain why each of the food groups is important to a balanced diet

Year 6:

Burgers

- I know that most foods we buy have nutrition labels which help us make informed choices about what we eat.
- I know that calories come from fats, proteins and carbohydrates
- I can compare different burgers and assess which is healthiest
- I can explain some of the different ways in which burger patties are cooked.
- I can add ingredients to a basic burger patty to reflect global cuisine.
- I can add mixtures of herbs and spices to a basic bread dough to make flavoured burger buns.
- I can explore, taste and assess different types of bread and their suitability for a burger bun and offer suggestions for some alternatives to bread.

DT Progression

Inventions and Achievements

Year 3:

British Inventors

- I can explain about the invention of the mackintosh.
- I can investigate ways of making fabric waterproof.
- I can explain about the invention of the world wide web.
- I can describe how the invention of the internet changed the world.

Year 5:

Chinese Inventions

- I can explain how the invention of paper helped shape the world.
- I can explain the traditional method of making paper.
- 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 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.

DT Progression

Outcomes



Year 1:

Mechanical Systems: Children will design and make a moving minibeast picture.

Stable Structures: Children will follow a design to make a toy garage.

Cooking and nutrition: Children will use tools to cut, peel and grate different fruits and vegetables.

Year 3:

Mechanical systems: Children will design and create a storybook with moving mechanisms.

Stable structures: Children can follow a design to make a stable structure from newspaper and celotape, which will hold a dictionary.

Stable structures: Children will design and make their own mini greenhouses.

Year 5:

Textiles: Children will design and make a drawstring bag and the pattern pieces. They will also sew design elements on using a variety of stitches.

Stable structures: Children will design and make a prototype suspension bridge to scale 1:100.

Inventions and achievements: Children will design and make a hanging/floating compass and will design and make a kite .

Year 2:

Textiles: Children will design and make their own glove puppet.

Mechanical systems: Children will follow a design a moving vehicle.

Cooking and Nutrition: Children will design and make their own healthy pizza.

Year 4:

Textiles: Children will design and create their own Christmas stocking.

Programming and Electrical systems: Children will create different electrical circuits. They will design an illuminated light box and make a free standing structure to house a circuit.

Cooking and Nutrition: Children will design healthy meals and menus. They will follow recipes to make fruit tarts, stuffed peppers and meatballs.

Year 6:

Stable structures: Children will create a flat pack diagram of a bird house and create a sturdy bird house out of wood.

Textiles: Children will design and make their own slipper for a giant. They will sew to join materials and create design elements which they will attach using a variety of stitches.

Cooking and Nutrition: Children will design and make a burger and follow recipes to make burger patties and different burger sauces.

DT Progression

Vocabulary



Year 1:

Designing and Making:

cut, fold, join, weak, strong, corner, planning, design, research, evaluate, make, purpose, ideas, sliding mechanism, lever, pivot, functional, properties, characteristics, materials,

Cooking and Nutrition:

hygiene, names of equipment and utensils (knife, chopping board) healthy diet, fruit and vegetable names, parts of fruits and vegetables (skin, seed, flesh)

Year 3:

Designing and Making:

Design criteria, fit for purpose, holds, tabs, adhesives, accuracy, net, capacity, breadth, structure, stiffening, reinforced, finishing, compartment, hard wearing, lever systems, linkage systems, join, measure, mark out, fonts, graphic, World Wide Web, Internet, inventor, invention, analyse, stable, structure, solutions,

Year 5:

Designing and Making:

Beam bridge, pillar bridge, truss bridge, arch bridge, suspension bridge, construction, investigate, effectiveness, stiffen, strengthen, tension, compression, build, test, inventions, moveable type press, advantage, disadvantage, machine, gears, water power, predict, frame, prototypes, desirable, design process, manufacturing, natural textiles, synthetic textiles, production,

Year 2:

Designing and Making:

design criteria, product, function, base, surface, point, straight, curved, fix, features, wheels, axel, chassis, template, fabric, running stitch, over stitch, attach, needle, thread,

Cooking and Nutrition:

weigh, measure, slicing, chopping, peeling, ingredients, vegetable names, dough, balanced diet, 5 eat well food groups (fruit and vegetables. potatoes, bread, rice, pasta and other starchy carbohydrates .beans, pulses, fish, eggs, meat and other proteins. dairy and alternatives, oils and spreads.)

Year 4:

Designing and Making:

Functionality, appeal, compare, contrast, hidden knot, zigzag stitch, decorative stitching, join, fabric, illuminate, circuit, construct, bulbs (traditional, incandescent), LEDs, audience, adapt, safety, series circuit, components, algorithm, microcontroller, program.

Cooking and Nutrition:

Seasonal food, safety, hygiene, climate, processed, preserved, healthy diet, recipe, animal products, savoury, prepare, nutritional value, quality assurance.

Year 6:

Designing and Making:

Appearance, features, 3D diagram, exploded diagram, hand saws, clamps, nails, hammers, hand drills, measuring tape, balsa wood, dowling rods, glue guns and sandpaper, precautions, pattern pieces, seam allowance, blanket stitch, hem, back stitch, functional/ decorative stitch.

Cooking and Nutrition:

spice, herbs, vitamins, nutrients, gluten, savoury, intolerance, roll out, shape, nutrition facts.