



Design and Technology
Knowledge and Skills Progression - Years 1 to 6

Year	Term	Scheme of work	Cooking and Nutrition
1	Aut	Eat More Fruits and Vegetables	<ul style="list-style-type: none"> I can name a variety of fruits and vegetables. I can use adjectives to describe the taste, smell and texture of 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. 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.
2	Aut	Perfect Pizzas	<ul style="list-style-type: none"> I can name a variety of pizza toppings. I can use the model of the balanced plate to evaluate how healthy different pizzas are. I can explore different types of bread and evaluate which would work best for a pizza base. 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. I can explain why each of the food groups is important for a balanced diet. I can design and make a healthy pizza following given criteria. I can evaluate my finished pizza, saying what I think and feel about it.
4	Sum	Seasonal Food	<ul style="list-style-type: none"> 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. 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 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 follow a recipe to make fruit tarts using seasonal fruit. I can follow a recipe to make stuffed peppers. 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 follow a recipe to make meatballs. 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 can use what I have learnt about seasonal food to design healthy meals and menus.



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6	Sum	Burgers	<ul style="list-style-type: none">• 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.• 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 explain some of the different ways in which burger patties are cooked.• 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 design a burger menu to incorporate different patties, sides and sauces.• I can explore, taste and assess different types of bread and their suitability for a burger bun.• I can offer suggestions for some alternatives for bread.• I can add mixtures of herbs and spices to a basic bread dough to make flavoured burger buns.• I can design a burger for a particular purpose.• I can design a burger for someone with particular dietary requirements.• I can make and evaluate a burger, following my recipe and design.
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		Scheme of work	Stable Structures
1	Sum	Stable Structures	<ul style="list-style-type: none"> I can identify the features of toy garages. I know what the word 'stable' means. I can make changes to the design of a stable structure to make it fit for purpose. I can explore a range of materials and evaluate the usefulness of their properties for a particular project. I can explore how to make stable structures that hold a given object. I can follow a design to make a stable structure. I know some ways to make a structure more stable. I can evaluate my finished structure against a set of given criteria.
3	Spr	British Inventors	<ul style="list-style-type: none"> 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.
4	Spr	Making Mini Greenhouses	<ul style="list-style-type: none"> 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 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 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 design a mini greenhouse using specific design criteria. I can select appropriate tools and materials to make a mini greenhouse. I can follow my design to make a mini greenhouse. I can evaluate my finished mini greenhouse for stability, effectiveness and visual appeal.
5	Aut	Building Bridges	<ul style="list-style-type: none"> I know what beams and pillars are and how they are used in bridge construction. 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 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 build a truss bridge spanning a width of 40cm using paper straws. 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 test the arch heights to see which can bear the most load. I can make an arch frame. I can explain how suspension bridges use tension forces to work. I can design, make and evaluate a prototype suspension bridge using a scale of 1:100 according to specific design criteria.



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6	Spr	Bird House Builders	<ul style="list-style-type: none"> I can investigate the appearance and function of a variety of different bird houses. 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 create a flat pack diagram of a constructed bird house. I can draw an exploded diagram. I can identify the tools associated with basic woodworking. 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 know the safety rules I need to follow when doing woodworking. 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 create a sturdy bird house frame using wood. 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.
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		Scheme of work	Programming and Electrical Systems
3	Sum	Light-Up Signs	<ul style="list-style-type: none"> I can explore and analyse illuminated signs. I can create a simple circuit with incandescent bulbs and a switch. I can describe the difference between an LED and an incandescent light bulb. 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 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 evaluate the effectiveness of my finished product against the design criteria.
6	Aut	Programming Pioneers	<ul style="list-style-type: none"> 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. I can write an algorithm to suggest how various appliances might work. 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 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 describe the typical design process for computer-controlled electronic products. I can debug errors in an algorithm. 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 evaluate my design for a computer-controlled system and consider the views of others to improve my work.



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		Scheme of work	Mechanical Systems
1	Spr	Moving Minibeasts	<ul style="list-style-type: none"> I can make a sliding mechanism out of card. I know what a pivot and lever are. 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 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 evaluate my finished moving minibeast picture by identifying things that worked well and things that could be improved.
2	Spr	Vehicles	<ul style="list-style-type: none"> I can investigate a range of vehicles, identifying and labelling their features. I know what an axle is. I know what a chassis is. I can explore different ways of using axles, chassis and wheels to create a moving base. 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 evaluate my finished moving vehicle.
3	Aut	Storybooks	<ul style="list-style-type: none"> 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. 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 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 evaluate how well my moving mechanisms work. I can evaluate the overall effectiveness of my storybook.
5	Spr	Chinese Inventions	<ul style="list-style-type: none"> 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.



		Scheme of work	Textiles
2	Aut	Puppets	<ul style="list-style-type: none"> I can explore a variety of puppets, identifying and labelling their features. I can cut out felt using a simple template. I can stick pieces of felt together to make a finger puppet. I can add pieces of felt and other materials to a finger puppet to create features, such as eyes, hats and mouths. I can use running stitch to join two pieces of fabric together. I can use overstitch to join two pieces of fabric together. I can sew a button onto a piece of fabric. I can design a glove puppet for a particular purpose. I can follow a design to make a glove puppet by sewing two pieces of fabric together and adding decorations. I can evaluate my finished glove puppet by identifying what went well and what could be improved.
4	Aut	Seasonal Stockings	<ul style="list-style-type: none"> I can explain the difference between the function and visual appeal of a product. I can evaluate the function and visual appeal of a variety of Christmas stockings. 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 identify a variety of decorative techniques that have been used to decorate Christmas stockings. 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 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 evaluate the function and visual appeal of my finished Christmas stocking.
5	Sum	Fashion and Textiles	<ul style="list-style-type: none"> 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. 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 know what a pattern piece is and why they are important when designing a garment. 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 evaluate my finished product against a set of design criteria.



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		Scheme of work	Inventions and Achievements
3	Spr	British Inventors	<ul style="list-style-type: none">• 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 has changed the world.

5	Spr	Chinese Inventions	<ul style="list-style-type: none">• I can explain how the invention of paper helped shape the world.• I can explain the traditional method for making paper.• I can test a variety of types of paper for strength, absorbency, opacity, etc.• I can make recycled 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 make a hanging/floating compass.• I can design and label my own compass.• 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 can make a variety of kite prototypes and test their effectiveness.• I can design, make and evaluate a kite according to specific design criteria.
6	Aut	Programming Pioneers	<ul style="list-style-type: none">• I know that Charles Babbage created the first mechanical computer.• I know that Ada Lovelace is referred to as the world's first computer programmer.• I know that Steve Jobs and Steve Wozniak co-founded Apple, Inc. to make the first Apple computers.