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| **Year** | **Term** | **Scheme of Work** | **Cooking and Nutrition**  Knowledge and SkillsVocabulary | |
| **1** | **Autumn** | **Eat More Fruits and Vegetables** | * 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. | Fruits Vegetables Exploring  Describing Texture  Tasting Making Recipe |
| **2** | **Autumn** | **Perfect Pizzas** | * 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. | Healthy Balanced Diet Food Group Protein Carbohydrates Design |
| **4** | **Summer** | **Seasonal Food** | * 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. | Ingredients Seasonal Food  Seasonality Climate Grow Produce Healthy  Recipe Processed Production Ripening |
| **6** | **Summer** | **Burgers** | * 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. | Nutrition Healthy  Recipe Fats Protein Carbohydrates Patty Suitability Layers Sauces Dietary- Requirements |

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| **Year** | **Term** | **Scheme of Work** | **Stable Structures** Knowledge and SkillsVocabulary | |
| **1** | **Summer** | **Stable Structures** | * 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. | Stable  Structure  Garage Design  Join Pillars Purpose |
| **3** | **Spring** | **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. | W B Wilkinson Invention Waterproof Properties Reflect Connect Reinforced  Concrete Designer Layering |
| **4** | **Spring** | **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 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. | Greenhouse Transparent  Plastic  Glass  Ventilate Stable  Structure Steady  Base  Frame Improve |
| **5** | **Autumn** | **Building Bridges** | * 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. | Bridge  Beam  Pillar  Deck Concrete  Steel  Gravity Lattice/Warren/Pratt Truss  Construct Suspension Analyse |
| **6** | **Spring** | **Bird House Builders** | * 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 woodwork. * 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 woodwork. * 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. | Bird House Material Features Waterproof Attractive Construct Measure  Clamp  Saw  Sand  Join  Design Modifying Predictions |

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| **Year** | **Term** | **Scheme of Work** | **Programming and Electrical Systems**  Knowledge and SkillsVocabulary | |
| **3** | **Summer** | **Light-Up Signs** | * 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. | Illuminated Sign Light  Front-Lit  Back-Lit Bulb lettering  Neon Signs  Bulb Battery Wires  Electrical Components Circuit  Power Supply  Resistor  Incandescent Switch |
| **6** | **Autumn** | **Programming Pioneers** | * 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. | Memory Chips  Information  Algorithm Appliances Engineer  Hardware  Software  Prototype  Programming  Monitor  Control  Debug  Components |

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| **Year** | **Term** | **Scheme of Work** | **Mechanical Systems**  Knowledge and SkillsVocabulary | |
| **1** | **Spring** | **Moving Minibeasts** | * 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. | Moving/Sliding /Wheel- Mechanism  Moving Picture Levers  Pivots Fixed Point Construct  Attach Arc  Evaluate |
| **2** | **Spring** | **Vehicles** | * 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. | Vehicles Transports Wheels  Axels  Chassis  Attach Rotates Body |
| **3** | **Autumn** | **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. * 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. | Mechanism Moving  Lever Linkage Rotate  Pivot Paper Concertina  Flap  Fold Reveal Join  Font |
| **5** | **Spring** | **Chinese Inventions** | * 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. | Inventions  Compass Kites  Silk  Bamboo  Sail Prototype Attach Bridle Cross Spar  Spine |

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| **Year** | **Term** | **Scheme of Work** | **Textiles** Knowledge and SkillsVocabulary | |
| **2** | **Autumn** | **Puppets** | * 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. | Sock//Glove /Finger/Rod -Puppet  Marionette  Fabric  Sew Attach Over Stitch Seam Needle  Thread |
| **4** | **Autumn** | **Seasonal Stockings** | * 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. | Stocking  Function  Purpose User  Visual Appeal Join  Sew  Running Stitch  Over stitch  Back Stitch  Zigzag stitch Back/Front Panel Prototype |
| **5** | **Summer** | **Fashion and Textiles** | * 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. | Cotton  Fabric Basting Stitch  Back Stitch  Straight Stitch  Whip Stitch Hems Needle  Skein  Eyelet  Measurements |

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| **Year** | **Term** | **Scheme of Work** | **Inventions and Achievements** Knowledge and SkillsVocabulary | |
| **3** | **Spring** | **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 has changed the world. | W B Wilkinson Invention Waterproof Properties Reflect Connect Reinforced  Concrete Designer Layering |
| **5** | **Spring** | **Chinese Inventions** | * 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. | Inventions  Compass Kites  Silk  Bamboo  Sail Prototype Attach Bridle Cross Spar  Spine  Frame Kite Tail  Kite Line  Waterproof |
| **6** | **Autumn** | **Programming Pioneers** | * 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. | Mechanical Programmer |