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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.
 | FruitsVegetablesExploringDescribingTextureTastingMakingRecipe |
| **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.
 | HealthyBalanced DietFood GroupProteinCarbohydratesDesign |
| **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.
 | IngredientsSeasonal FoodSeasonalityClimateGrowProduceHealthyRecipeProcessedProductionRipening |
| **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.
 | NutritionHealthyRecipeFatsProteinCarbohydratesPattySuitabilityLayersSaucesDietary- 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.
 | StableStructureGarageDesignJoinPillarsPurpose |
| **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 WilkinsonInventionWaterproofPropertiesReflectConnectReinforcedConcreteDesignerLayering |
| **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.
 | GreenhouseTransparent PlasticGlassVentilateStableStructureSteadyBaseFrameImprove |
| **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.
 | BridgeBeamPillarDeckConcreteSteelGravityLattice/Warren/Pratt TrussConstructSuspensionAnalyse |
| **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 HouseMaterialFeaturesWaterproofAttractiveConstructMeasureClampSawSandJoinDesignModifyingPredictions |

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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.
 | IlluminatedSignLightFront-LitBack-LitBulb letteringNeon SignsBulbBatteryWiresElectrical ComponentsCircuit Power SupplyResistorIncandescentSwitch |
| **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 ChipsInformationAlgorithmAppliancesEngineerHardwareSoftwarePrototypeProgrammingMonitorControlDebugComponents |

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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- MechanismMoving PictureLeversPivotsFixed PointConstructAttachArcEvaluate |
| **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.
 | VehiclesTransportsWheelsAxelsChassisAttachRotatesBody |
| **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.
 | MechanismMovingLeverLinkageRotatePivotPaper Concertina FlapFoldRevealJoinFont |
| **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.
 | InventionsCompassKitesSilkBambooSailPrototypeAttachBridleCross SparSpine |

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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 -PuppetMarionetteFabricSewAttachOver StitchSeamNeedleThread |
| **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.
 | StockingFunctionPurposeUserVisual AppealJoinSewRunning StitchOver stitchBack StitchZigzag stitchBack/Front PanelPrototype |
| **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.
 | CottonFabricBasting StitchBack StitchStraight StitchWhip StitchHemsNeedleSkeinEyeletMeasurements |

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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 WilkinsonInventionWaterproofPropertiesReflectConnectReinforcedConcreteDesignerLayering |
| **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.
 | InventionsCompassKitesSilkBambooSailPrototypeAttachBridleCross SparSpineFrameKite TailKite LineWaterproof |
| **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.
 | MechanicalProgrammer |