Holme Community School – Long Term Curriculum Planning

Subject	Design and Technology	Cycle	A

What themes/ golden threads weave through the curriculum?	• Evolution of Design • Past and Present • Innovators of Design
Why were these themes chosen?	To take inspiration from design throughout history and understand the evolution of design through the ages. Also, to look in greater depth at the innovators of design and how they shaped present day designs.
What are the overall aims of this curriculum?	The national curriculum for design and technology aims to ensure that all pupils: ➢ develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world ➢ build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users ➢ critique, evaluate and test their ideas and products and the work of others ➢ understand and apply the principles of nutrition and learn how to cook.

Year Group		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	**Topic Heading: Discovery in Design** What are the building blocks for this subject to ensure children are KS1 ready?	**Expressive arts and design: Exploring and using media and materials. ELG:** Children sing songs, make music and dance, and experiment with ways of changing them. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. **Expressive arts and design: Being imaginative. ELG:** Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own n ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.					
Year 1/2	**Topic Heading: *Explorers in Design***	**Past and Present: Mechanisms** **Toy Story!** **(Wheels and axles)**	**Past and Present/Innovation: Mechanisms** **Bringing Stories Alive!** **(Levers and sliders)**	**Past and Present: Structures** **Wacky Windmills!** **(Structure and function)**		**Innovation: Food and Nutrition** **Super Smoothies!** **(Identifying fruits and Vegetables)**	**Past and Present: Textiles** **Jungle Puppets!** **(Joining fabrics and running stitch)**
	Link to themes/key concepts	• To *explore* objects and designs to identify likes and dislikes of the designs of toys from the past (Victorian era). • To *explore* how moving objects, work	• To *explore* objects and designs to identify likes and dislikes of the moving book designs. • Suggest improvements to	• To *explore* materials that windmills are made off and how they are constructed. • To *explore* and build an understanding of what a windmill is, what it looks like and the different types that can be found, to help identify key features. • To *explore* a variety of windmills and there uses past and present.		• To explore a variety of fruits and vegetables. • To be identify fruits and vegetables and through *exploration*, design and make a	• To *explore* the history of puppets and there uses. • To *explore* and learn the different ways they can join fabrics together through the

			existing designs. • *Explore* how products have been created		smoothie.	creation of a puppet.
	Key Knowledge	• To know that wheels need to be round to rotate and move. • To understand that for a wheel to move it must be attached to a rotating axle. • To know that an axle moves within an axle holder which is fixed to the vehicle or toy. • To know that the frame of a vehicle (chassis) needs to be balanced. • To know some real-life items that use wheels.	• To know that a mechanism is the parts of an object that move together. • To know that a slider mechanism moves an object from side to side. • To know that a slider mechanism has a slider, slots, guides and an object. • To know that bridges and guides are bits of card that purposefully restrict the movement of the slider.	• To understand that the shape of materials can be changed to improve the strength and stiffness of structures. • To understand that cylinders are a strong type of structure (and, therefore, they are the main shape used for windmills and lighthouses). • To understand that axles are used in structures and mechanisms to make parts turn in a circle. • To begin to understand that different structures are used for different purposes. • To know that a structure is something that has been made and put together	• To understand the difference between fruits and vegetables. • To understand that some foods typically known as vegetables are actually fruits (e.g. cucumber). • To know that a blender is a machine which mixes ingredients together into a smooth liquid. • To know that a fruit has seeds and a vegetable does not. • To know that fruits grow on trees or vines. • To know that vegetables can grow either above or below ground. • To know that vegetables can come from different parts of the plant.	• To know that 'joining technique' means connecting two pieces of material together. • To know that there are various temporary methods of joining fabric by using staples, glue or pins. • To understand that different techniques for joining materials can be used for different purposes. • To understand that a template (or fabric pattern) is used to cut out the same shape multiple times. • To know that drawing a design idea is useful to see how an idea will look.
	Objectives to be covered	• Designing mechanisms • Adapting Mechanisms • Measuring and cutting accurately • Following a design brief • Working to scale • Identifying materials	• Designing for others • Assembling accurately • Creating different movements (up, down, along and around) • Testing a finished product	• Designing for others • Assembling different components to work together to create motion • Assembling accurately • Cutting neatly • Testing a finished product • Developing awareness of different structures for different purposes • Understanding how to turn 2D nets into 3D structures	• Designing for others • Chopping fruit and vegetables • Making a smoothie • Evaluating and adapting designs • Describing and	• Designing for others • Selecting suitable equipment • Sequencing steps for construction • Reflecting on their finished

		commonly used for wheel • Researching and testing mechanisms • Understanding how an axle works	• Understanding what a mechanism is • Understanding how to create different movement	• Understanding what mechanisms are	grouping fruits by texture and taste • Understanding the difference between fruit and vegetables	product • Knowing the different ways fabric can be joined • Understanding how to prepare fabric for joining
	Key Subject Specific Vocabulary to be taught	Accurate, axle, axle holder, chassis, design diagram, fix, equipment, mechanism, model, test, wheel	Sliders, stencil, mechanism, adapt, design criteria, design, model, target audience, template, assemble, test, evaluation	Client, design, design criteria, evaluation, net, stable, strong, structure, test, weak, windmill, windmill axle, windmill structure, windmill turbine	Blender, carton, fruit, healthy, ingredients, peel, peeler, recipe, slice (verb), smoothie, stencil, template, vegetable	Decorate, design, fabric, glue, model, hand puppet, safety pin, pencil, technique, template
	Core Activities	• Delve Into History Workshop – Toys and games • Construction - Moving toys/ mechanism • To research, test, design, create and evaluate a mechanical toy/story with a specific user in mind.		• Construct a functioning windmill • To research, test, design, create and evaluate a windmill with a specific use in mind.	• Visit Greenbank Farm • To research, design and create a smoothie with a specific consumer in mind.	• To research, design and create a hand puppet with a specific user in mind.
	Assessment Activities/ Key knowledge	**The final design, end-of-unit quiz, and knowledge catcher** • **<u>Can you name these parts? Q1, 2 and 3</u>** (wheel, axle, axle holder) • **<u>What is the car chassis?</u>** body • **<u>How do wheels spin?</u>** They are attached to the axle that rotates. • **<u>What do we mean by the word fix?</u>** To mend something so that it will work properly again • **<u>What does accurate mean?</u>** Neat, correct shape, size, and pattern with no mistakes. • **<u>What is wrong with the car? Q8 and 9</u>** (The wheels are not round; the wheels are attached to the chassis)	**The final design, end- of-unit quiz, and knowledge catcher** • **<u>What is a mechanism?</u>** Part of an object that moves together. • **<u>What does a slider mechanism do?</u>** Move the object from side to side or up and down. • **<u>What are the main parts of the slider mechanism?</u>** Slider, slots, guides and objects. • **<u>Describe the movement? Q4, 5 & 6</u>** (Up-and down, Side-to-side, Up-and-down) • **<u>Using slider mechanisms in our storybook will…</u>** Allow us to create moving parts.	**The final design, end-of-unit quiz, and knowledge catcher** • **<u>What is a structure?</u>** Something that has been made and put together. • **<u>What I a windmill?</u>** A structure with sails that are moved by wind. • **<u>What is a client?</u>** The person who you are designing something for. • **<u>What is a design criteria?</u>** A list of points for the windmill to meet the clients needs. • **<u>What are the three main parts of a windmill?</u>** Turbine, axle and structure. • **<u>What is an evaluation?</u>** When you look at the good and bad points about something. • **<u>What do we mean by stable?</u>** It does not topple over easily. • **<u>What do we mean by assemble?</u>** To put all the parts together. • **<u>Why is it important to test something?</u>** To find out whether something works as it should.	**The final design, end-of-unit quiz, and knowledge catcher** • **<u>Which food is a vegetable?</u>** Celery • **<u>Which food is a fruit?</u>** Cucumber • **<u>What is a blender?</u>** A machine that mixes ingredients together into a smooth liquid. • **<u>How do we identify a fruit?</u>** Check for seeds. • **<u>Where do tomatoes grow?</u>** On the vines. • **<u>Where do potatoes grow?</u>** Below the ground. • **<u>What part of the spinach plant do we eat?</u>** Leaves • **<u>What part of the cucumber plant do</u>**	**The final design, end-of-unit quiz, and knowledge catcher** • **<u>What do we mean by joining technique?</u>** To connect two pieces of materials together. • **<u>Which picture shows safety pins?</u>** B • **<u>Which picture shows a stapler and staples?</u>** C • **<u>Which picture shows glue?</u>** B • **<u>What method of joining fabric needs drying time?</u>** Glueing • **<u>When pinning and stapling, be extra careful because…</u>** You could poke yourself with the sharp points.

			• **<u>What is a design criteria?</u>** A list of points for the moving storybook to be successful. • **<u>Why is it important to plan a design before making it?</u>** To make sure all parts fit together and work.		**<u>we eat?</u>** Fruit • **<u>A carrot is a vegetable because…</u>** It has no seeds.	• **<u>What is a template?</u>** A stencil to help you draw the same shape on different materials. • **<u>Which answer describes fabric best?</u>** Soft and flexible. • **<u>Drawing a design idea first is important because…?</u>** It helps us to see how it will look.
Year 3/4	**Topic Heading: *Inventors in Design***	**<u>Evolution and Innovation: Mechanisms</u> Pneumatic Monsters (Pneumatic systems)**	**<u>Evolution and Innovation: Electrical Systems</u> Electric Poster (Components)**	**<u>Evolution and Innovation: Structures</u> Constructing a Castle (Design and construction)**	**<u>Innovation: Textiles</u> Mosaic Greek Cushions (Cross stich, back tack and applique)**	**<u>Innovation: Food and Nutrition</u> Seasonally: Fruity Tarts! (Seasonality in the UK)**
	Link to themes/ key concepts	• To investigate the inventor <u>Otto Von Guericke</u> and his invention of the pneumatic system. • To see how his invention influenced modern designs. • To explore and design and create a toy with a pneumatic system, learning how trapped air can be used to create a product with moving parts while also building on their design knowledge. • To improve on past designs.	• To explain what 'information design' is and understand its impact, considering what could happen if we had no signage, posters, or written communication in public places of interest. • To research and choose a specific topic on which to base their initial poster ideas (Early Civilisations). • Improve upon existing designs, giving reasons for choices.	• To investigate the range of construction techniques of castles and understand the purposes they serve. • To research the first castle that was built by the <u>Normans</u>. • To be able to research why castles were originally built. • To be able to identify the <u>four main types</u> of castles.	• To investigate the invention of mosaic design in <u>Ancient Greece</u>. • To design and create a modern textile mosaic cushion using the applique technique.	• To investigate the origin of tarts (Medieval pie making) • To research different tart recipes through the ages. • Explore likes and dislikes of existing recipes and improve by testing.

	Key Knowledge	• To understand how pneumatic systems, work. • To understand that pneumatic systems can be used as part of a mechanism. • To know that pneumatic systems operate by drawing in, releasing and compressing air	• To understand that an electrical system is a group of parts (components) that work together to transport electricity around a circuit. • To understand common features of an electric product (switch, battery or plug, dials, buttons etc.) • To list examples of common electric products (kettle, remote control etc.) • To understand that an electric product uses an electrical system to work (function). • To know the name and appearance of a bulb, battery, battery holder and crocodile wire to build simple circuits.	• To understand that wide and flat based objects are more stable. • To understand the importance of strength and stiffness in structures. • To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse – and their purpose. • To know that a façade is the front of a structure. • To understand that a castle needed to be strong and stable to withstand enemy attack. • To know that a paper net is a flat 2D shape that can become a 3D shape once assembled. • To know that a design specification is a list of success criteria for a product.	• To know that appliqué is a way of mending or decorating a textile by applying smaller pieces of fabric. • To know that when two edges of fabric have been joined together it is called a seam. • To know that it is important to leave space on the fabric for the seam. • To understand that some products are turned inside out after sewing so the stitching is hidden.	• To know that not all fruits and vegetables can be grown in the UK. • To know that climate affects food growth. • To know that vegetables and fruit grow in certain seasons. • To know that cooking instructions are known as a 'recipe'. • To know that imported food is food that has been brought into the country. • To know that exported food is food that has been sent to another country. • To understand that imported foods travel from far away and this can negatively impact the environment. • To know that each fruit and vegetable gives us nutritional benefits because they contain vitamins, minerals and fibre. • To understand that vitamins, minerals and fibre are important for energy, growth and maintaining health.

						• To know that similar coloured fruits and vegetables often have similar nutritional benefits. * To know safety rules for using, storing and cleaning a knife safely.
	Objectives to be covered	• Generating and communicating ideas using sketching and modelling, using the views of others to improve their designs • Selecting appropriate materials and equipment for functional and aesthetic purposes • Assessing how well their product works and if it matches their design • Understanding how pneumatic systems work	• Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups • Investigate and analyse a range of existing products. • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. • Evaluate their ideas and products against their own design criteria and consider the views of others to	• Planning for manufacture • Establishing and using a design criterion to help focus and evaluate their work • Using more demanding practical skills (paper engineering/paper folding techniques) • Evaluating as they work • Evaluating their own and other's final product • Application of prior knowledge and increasing knowledge of nets	• Designing for a purpose • Sewing cross stitch and using applique • Compare to designs • Construction of cushions • Understanding that fabrics can be layered for effect • Knowing different stitch types	• Designing to criteria • Safely preparing fruit and vegetables • Following a recipe • Tasting and evaluating their dessert • Knowing what foods are in season and when • Understanding the benefits of foods by their colour • Knowing how climate alters the sweetness of food

			improve their work			
	Key Subject Specific Vocabulary to be taught	Exploded-diagram, function, input, linkage system, mechanism, motion, net, output, pivot, pneumatic system, thumbnail sketch	Battery, bulb, circuit, circuit component, information design, initial ideas, information, public, research, wire	2D shapes, 3D shapes, castle , design criteria, evaluation, façade, feature, flag, net, recyclable, scoring, stable, strong, structure, tab, weak	Appliqué, accurate, cross-stitch, cushion, decorate, detail, fabric, patch, running-stitch, seam, stencil, stuffing, target audience	Climate, dry Climate, exported, imported, Mediterranean climate, nationality, nutrients, polar climate, recipe, seasonal food, seasons, temperate climate, tropical climate
	Core Activities	• To research, test, design, create and evaluate a pneumatic toy with a specific user in mind.	• **Bright Sparks** workshop on electricity • To research, test, design, create and evaluate an electric poster with a specific user in mind.	• To research, design, and create a castle by looking closely at one of the original designs	• Visit the ***Quaker Tapestry*** (Kendal) • To research, design, modify and create a Greek inspired pattern using cross stitch and applique.	• Visit **Leapers Rock Orchard** (Carnforth) to pick own fruit • To research, design and create a tart with a specific consumer in mind.
	Assessment Activities/Key Questions	**The final design, end-of-unit quiz, and knowledge catcher** • **What is a mechanism?** Parts of an object that moves together. • **What is a pneumatic system?** A mechanism that runs on air or compressed gas. • **What is an exploded diagram?** Used to illustrate how different parts of a product fit together. • **What type of sketches are these?** Thumbnail • **What are thumbnail sketches?** Small drawings to get ideas down on paper quickly. • **What is motion?** The movement an object makes when controlled by an input	**The final design, end-of-unit quiz, and knowledge catcher** • **What is the definition for 'information design'?** An area of design that is covers all products that need to tell the public about something. • **What is a list of design criteria?** A set of goals that your product must achieve to succeed. • **Why is it important to write a list of design criteria?** They guide us to develop a successful product that meets the needs of our client. • **What is an electrical system?** A group of parts that transport electricity around a circuit.	**The final design, end-of-unit quiz, and knowledge catcher** • **Which picture shows a natural object?** A • **Which pictures shows a man-made object?** B • **What is a façade?** The front of a structure. • **What is a feature?** **A specific part of something.** • **What is a paper net?** A 2D flat shape, that can become 3D shape once assembled**.** • **An object can be … to become something new…** Recycled • **To make an indent in the card you need to …** Score • **A castle years ago was originally a…** A home for Kings and Queens. • **… cut paper nets out so they fit together with no gaps** Accurately • **How can you improve the look and stability of this castle?** - Add more features - Use extra tape to make it strong etc	**The final design, end-of-unit quiz, and knowledge catcher** • **What do we mean by a joining technique?** To connect two pieces of material together. • **What is a template?** A stencil to help you draw the same shape on materials. • **Which pictures shows applique?** B • **Which picture shows running stitch?** A • **What picture shows cross-stitch?** C • **What is a patch?** A method of repairing a hole in fabric items or as a	**The final design, end-of-unit quiz, and knowledge catcher** • **What do we mean by diet?** The food and drink that a person usually eats. • **What are nutrients?** Substances in food that all living things need to make energy. • **What do we call the cooking instructions to make a dish?** Recipe • **What effects how fruit and vegetables grow?** Climate • **What do we mean by seasonal food? Food that is** harvested and eaten in a certain season. • **When a food is in**

		or output. • **<u>What do we mean by the word function?</u>** How something works. • **<u>What is a paper net?</u>** A 2D flat shape, that can become a 3D shape once assembled. • **<u>How do drawings and diagrams help designers?</u>** They help to communicate exactly what the product should look like and suggest how it could work and, or be made.	• **<u>What is an electrical product?</u>** An object that uses an electrical system to carry electricity around different parts to work. • **<u>Why do we use corrugated cardboard to mount the poster?</u>** To increase the posters strength. • **<u>Which circuit component is a battery holder?</u>** D • **<u>Which circuit component is the bulb?</u>** C • **<u>What circuit component is a crocodile wire?</u>** B			decoration. • **<u>What material do we fill the design with?</u>** Stuffing • **<u>What is a definition of a seam?</u>** Where two edges of fabric have been joined together. • **<u>What do we mean by accurate?</u>** Neat, correct shape, size and pattern with no mistakes.	**<u>'season', what does it mean?</u>** Ready to be harvested and eaten. • **<u>When a food has been brought into the country it has been…?</u>** Imported • **<u>When a food has been sent to another country it has been…?</u>** Exported
Year 5/6	**Topic Heading: *Pioneers in Design***	**<u>Innovation: Textiles</u>** **Patriotic Teddy Bear (back stitch,** blanket stitch and 3D design)	**<u>Innovation: Electrical Systems</u>** **Doodlers (electric circuits)**	**<u>Innovation: Mechanisms</u>** **Pop-Up Books! (Mechanism structures and pop-up features)**	**<u>Digital Worlds: *Computing Monitoring Devices</u>** **(Computer Aided3D Design)**	**<u>Innovation: Food and Hygiene</u>** **What Could Be Healthier? (Food sources) (Adapting and improving)**	**<u>Evolution and Innovation: Structures</u>** **Building Bridges (Arches, beams and trusses)**
	Link to themes/ key concepts	• To investigate the pioneer of soft toy designs **(*<u>Richard Stieff</u>*)**. • To research who made the original teddy bear and how they were constructed. • To research the Teddy bears craze in the early 1900s. Also delve further into German toymaker ***<u>Richard Steiff</u>*** and how demand changed once war broke out. • Research British toymakers in the early 1900s and how they	• To research the first electrical circuit by Alessandro Volta in 1800. • To research examples of motorised products that use movement to rotate or spin. different parts • Create innovative designs that improve upon existing products.	• To research the designer ***<u>Ernest Nister</u>*** who designed some of the first automatic pop-up books. • To research **Lothar Meggendorfer** who was a well-known pop-up author in the 1800s. • To research the mechanics of volvelles, tunnel books, pull tabs and other forms of paper engineering by *<u>Nister</u>*. • Create innovative	• To know what is meant by 'monitoring device' and discover the history and development of thermometers. • To know what a virtual model is and the pros and cons of traditional and CAD modelling. • To research Daniel Gabriel Fahrenheit who developed the world's first truly accurate thermometer in 1709, using a	• To investigate the original recipes of **<u>shepherd's pie</u>**. • To research the historical background of lamb as food. • To research the history of sheep farming in Cumbria and how over the years in has evolved (farm to fork).	• To research the **<u>Ancient Roman</u>** **'**arch' bridge design. • Investigate how the **<u>Romans</u>** *modified* the original <u>Arkadiko Bridge</u> design for construction. • Research how this innovative design inspired future pioneers of bridge designs in Britain **<u>(Brunel).</u>** • To research the strongest bridges designs, focussing

		rushed to make patriotic British bears.		designs that improve upon existing products.	numerical scale he proudly called the 'Fahrenheit' scale (°F).		on arches, beams and trusses and where these designs evolved from.
	Key Knowledge	• To know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric. • To understand that it is easier to finish simpler designs to a high standard. • To know that soft toys are often made by creating appendages separately and then attaching them to the main body. • To know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely.	• To know that, in a series circuit, electricity only flows in one direction. • To know when there is a break in a series circuit, all components turn off. • To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to spin. • To know a motorised product is one which uses a motor to function	• To know that mechanisms control movement. • To understand that mechanisms can be used to change one kind of motion into another. • To understand how to use sliders, pivots and folds to create paper-based mechanisms. • To know that a design brief is a description of what I am going to design and make. • To know that designers often want to hide mechanisms to make a product more aesthetically pleasing.	• To know that a 'device' means equipment created for a certain purpose or job and that monitoring devices observe and record. • To know that a sensor is a tool or device that is designed to monitor, detect and respond to changes for a purpose. • To understand that conditional statements (and, or, if booleans) in programming are a set of rules which are followed if certain conditions are met.	• To understand where meat comes from – learning that lamb is from cattle and how lamb is reared and processed, including key welfare issues. • To know that I can adapt a recipe to make it healthier by substituting ingredients. • To know that I can use a nutritional calculator to see how healthy a food option is. • To understand that 'cross-contamination' means that bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects.	• To understand some different ways to reinforce structures. • To understand how triangles can be used to reinforce bridges. • To know that properties are words that describe the form and function of materials. • To understand why material selection is important based on their properties. • To understand the material (functional and aesthetic) properties of wood.
	Objectives to be covered	• Designing for a purpose • Accurately cutting and joining • Comparing 3D object to 2D design • Understand constructions methods for 3D shapes	• Investigate and analyse a range of existing products • Understand and use electrical systems in their products [for example, series circuits incorporating	• Planning using storyboards and designs, communicating through words and illustrations • Making functional components • Using layers and spacers to	• Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for	• Adapting a recipe • Cutting and preparing vegetables hygienically Cooking meat safely • Tasting and adapting the	• Design arch and truss bridges • Selecting materials and equipment according to functional properties • Working with increasing

		• Knowing how to create a hidden seam	switches, bulbs, buzzers and motors]. • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. • Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups	construct pages • Cutting and assembling with accuracy • Constantly evaluating progress against design • Understand sliders, levers and linkages • Understand structures and mechanisms	purpose, aimed at particular individuals or groups • Understand how key events and individuals in design and technology have helped shape the world. • Apply their understanding of computing to program, monitor and control their products. • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	dish during cooking process • Know where meat comes from and understand ethical issues around lamb • Know nutritional values of packaged food	accuracy in practical tasks • Use triangulation for bracing • Testing to destruction to evaluate the successful and unsuccessful properties of a design and its materials • Understanding the importance of compression and tension in bridge structures
	Key Subject Specific Vocabulary to be taught	Accurate, annotate, appendage, blanket-stitch, design criteria, detail, evaluation, fabric, sew, shape, stuffed toy, stuffing, template	Circuit, circuit Component, configuration, current, develop, DIY, investigate, problem-Solve, product, analysis, stable, target user	Aesthetic, CAD, caption, design, design brief, design criteria, exploded- diagram, function, input, linkage, mechanism, motion, output, pivots, prototype, sliders, structure, template	monitoring device, electronic, sensor, thermoscope, thermometer, research design brief, design criteria, development, inventor, vivarium, programming loop, programming, comment, alert, ambient, Boolean, duplicate, copy, value, variable, model,	Lamb, cross-contamination, farm. Method, packaging, research, welfare	Accurate, arch bridge, beam bridge, bench hook, compression, coping saw, file, mark out, reinforce, sandpaper, set Square or try Square, shape, structure, suspension bridge, tenon saw, tension, truss bridge

					sustainability, plastic, microplastics, decompose, plastic pollution, man-made synthetic		
	Core Activities	• **Delve Into History** Workshop – Toys and games • To research, design, create and evaluate a textile toy with a specific user in mind.	• To research, test, design, create and evaluate a 'doodler' with a specific user in mind.	• To research, test, design, create and evaluate a pop-up book with a specific user in mind.	• Tech4Fun CAD and 3D printing workshop.	• Local **farm visit** highlighting the importance of British farming • To research, design and create an updated version of a dish, with a consumer in mind.	• **Local visits** to look at how a variety of bridges have been built compare structures. • To research, test, design, create and evaluate a bridge with a specific use in mind.
	Assessment Activities/Key Questions	**Final design, end of unit quiz and knowledge catcher** • **What is a fastening?** Something that holds two pieces of material together. • **What is fabric?** A natural or man-made woven or knitted material. • **What is a template?** A stencil to help you draw the same shape on materials. • **What material has been used to stuff the soft toy?** Stuffing • **What is a blanket stitch used for?** To reinforce the edges of fabric material or join two pieces. • **Which picture shows applique?** B • **Which picture shows cross-stitch?** C • **Which picture show blanket stitch?** D • **What do we mean by an objects form?** The shape of an object.	**Final design, end of unit quiz and knowledge catcher** • **What is an electrical system?** A group of parts that transport electricity around a circuit. • **What do we mean by product analysis?** To look at an object and evaluate based on certain criteria. • **What is a circuit component called?** Motor • **Is there a break in a series circuit?** All components switch off. • **To investigate something means to…** … research and look at something in greater detail. • **A motor converts…** Electrical energy into rotational movement. • **What do these products have in common?** They are motorised. • **What does the**	**Final design, end of unit quiz and knowledge catcher** • **What is a design brief?** A description of what you are going to design and make. • **What is a list of design criteria?** Explain what the product need to achieve to be successful. • **What is a mechanism?** Parts of an object that move together. • **What movement to sliders create?** Side-to-side • **What is an input?** The energy that is used to start something working. • **What is an output?** Movement that happens as a result of starting the input. • **What is a prototype?** A simple model that lets you test out your idea showing how it will look. • **What is a template?** A stencil you use to help you draw the	**Final design, end of unit quiz and knowledge catcher (See Kapow)**	**Final design, end of unit quiz and knowledge catcher** • **What meat comes from a cow?** Beef • **What do we call cooking instructions for a dish?** Recipe • **A balance diet consists of?** Measured amounts of different foods from the food groups. • **In a recipe, what is the method?** Following a process or list of instructions. • **What is cross-contamination?** Bacteria and germs have been passed onto ready-to-eat foods. • **Cross-contamination happens when…** Ready-to-eat food mixes with raw meats or unclean objects. • **A farm has land or water use to…** Produce crops or	**Final design, end of unit quiz and knowledge catcher** • **What is the name of this tool?** Tenon saw • **What is the name of this tool?** File • **What are these tools used for?** Smoothing down rough edges on different materials. • **What is a try square or set square?** A right angle plate for drawing lines at 90, 45, 60 or 30 degrees. • **What type of bridge is this?** Truss • **What helps this bridge to distribute weight evenly?** Triangle formations. • **What are material properties?** Words that describe the materials form and function. • **What are the materials properties of softwood (pine)?** Easier to shape, light

			acronym 'DIY' mean? Do it yourself. • **Which of the following is not a circuit component?** Paper clip	same shape more easily. • **What is an exploded-diagram?** Usef to illustrate how different parts of a product fit together.		raise animals for food • **What do we mean by research?** Collecting information about a subject. • **What do we mean by welfare?** The health and happiness of a living thing.	and strong. • **What is a cutting template used for?** Measuring each component accurately.