ST JOSEPH'S DESIGN AND TECHNOLOGY

OVERVIEW 2023/2024

D & T- EYFS

	Nursery		Reception	
	Statement	**In practice**	**Statement**	**In practice**
Mechanisms	Explore how things work	**Toys** **Class equipment** **Items of interest [Curiosity Cabinet]**		
Construction	Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. Join different materials and explore different textures.	**Lego/skittle bricks, duplo etc** **Large outdoor equipment** **Obstacle course items** **'Making'/'Craft' Table** **'Playdough' table** **Junk modelling** **Large cardboard** **Den building** **Equipment/tools shelf** **Small world** **'Be the builder'** **Construction corner**		**Junk modelling** **Challenges in construction** **[eg build the strongest bridge]** **Obstacle course** **Den building** **Small world** **Mark malign in play**
Baking		**Weekly Skills focus baking:** **Autumn Term** **Spreading Cutting Grating Slicing chopping** **Spring Term** **Melting Freezing Heating Cooling Mixing** **Summer Term** **Planning Preparing Presenting** **Cookery Corner** **Weekly baking/skills practice** **Weekly prepare Friday snack**		**Weekly Skills focus baking.** **Prepare own healthy snack.**

D & T- KS1

Knowledge Skill End Point	Aut 1	Aut 2	Spring 1	Spring 2	Sum 1	Sum 2
Year 1 Designer- Henry Ford.	**Dinosaur Planet** **Dinosaur Socks** Specific tools are used for particular purposes. For example, scissors are used for cutting and glue is used for sticking. Select the appropriate tool for a simple practical task/ With help, measure mark out, cut and shape a range of materials. **Cookery Corner- Dinosaur biscuits**	**Bright Lights, Big City** **Vehicles (Moving pictures) Designer- Henry Ford.** A mechanism is a device that takes one type of motion or force and produces a different one. A mechanism makes a job easier to do. Mechanisms include sliders, levers, linkages, gears, pulleys and cams. Use a range of mechanisms (levers, sliders, wheels and axles) in models or products.	**Rio** **Nutrition** Everyday products are objects that are used routinely at home and school, such as a toothbrush, cup or pencil. All products are designed for a specific purpose. Name and explore a range of everyday products and describe how they are used.	**Moon Zoom** **Design, make & evaluate rockets** Different materials are suitable for different purposes, depending on their specific properties. For example, glass is transparent, so it is suitable to be used for windows. Select and use a range of materials, beginning to explain their choices. **Recipes (Nutrition) Fruit Salad** Fruit and vegetables are an important part of a healthy diet. It is recommended that		

				people eat at least five portions of fruit and vegetables every day. Select healthy ingredients for a fruit or vegetable salad.		
Year 2 Designer Isambard Kingdom Brunel	**Wriggle and Crawl** **Cookery Corner: Honey Flapjacks** Understand that all food comes from plants and animals. Identify the origin of some common foods. **Bug Hotel** Properties of components and materials determine how they can and cannot be used. For example, plastic is shiny and strong but it can be difficult to paint. Choose appropriate components and materials and suggest ways of manipulating	**Bounce** **Structures/ Meccano** A mechanism is a device that takes one type of motion or force and produces a different one. A mechanism makes a job easier to do. Mechanisms include sliders, levers, linkages, gears, pulleys and cams. Use a range of mechanisms (levers, sliders, wheels and axles) in models or products.	**Seafarers** **Sea Monsters** Structures can be made stronger, stiffer and more stable by using cardboard rather than paper and triangular shapes rather than squares. A broader base will also make a structure more stable. Explore how a structure can be made stronger, stiffer and more stable. **Cookery Corner: Pirate Pasties** Some ingredients need to be prepared before they can be cooked or eaten. There are many ways to prepare ingredients: peeling skins using a vegetable peeler, such as potato skins; grating hard		**Castles** **Bookmarks (Sewing and Stitching) Cutting and joining textiles** A running stitch is a basic stitch that is used to join fabric. It is made by passing a needle in and out of fabric at an even distance. Demonstrate how to cut, shape and join fabric to make a simple product. Use basic sewing techniques. **Isambard Kingdom Brunel** Many key individuals have helped to shape the world. These include engineers,	

	them to achieve the desired effect.		ingredients, such as cheese or chocolate; chopping vegetables, such as onions and peppers and slicing foods, such as bread and apples. Prepare ingredients by peeling, grating, chopping and slicing.		scientists, designers, inventors and many other people in important roles. Explain why a designer or inventor is important.	
End Points for KS1:	Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. Select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing). Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria. Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms (for example, levers, sliders, wheels and axles), in their products. Understand where food comes from. Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.					

D+T LKS2

Knowledge Skill End Point	Aut 1	Aut 2	Spring 1	Spring 2	Sum 1	Sum 2
Year 3 Designer: Archimedes.	**Tribal Tales** **Cookery Corner: Stone Age Soup**	**Mighty Metals** **Iron Man Project:** Levers consist of a rigid bar that rotates around a fixed point, called a fulcrum. They reduce the amount of work needed to lift a heavy object. Sliders move from side to side or up and down, and are often used to make moving parts in books. Axles are shafts on which wheels can rotate to make a moving vehicle. Cams are devices that can convert circular motion into up-and-down motion. Explore and use a range of mechanisms (levers, sliders, axles, wheels and cams) in models or products.	**Scrumdiddlyumptious!** **Food technology** There are five main food groups that should be eaten regularly as part of a balanced diet: fruit and vegetables; carbohydrates (potatoes, bread, rice and pasta); proteins (beans, pulses, fish, eggs and meat); dairy and alternatives (milk, cheese and yoghurt) and fats (oils and spreads). Foods high in fat, salt and sugar should only be eaten occasionally as part of a healthy, balanced diet. Identify the main food groups (carbohydrates, protein, dairy, fruits and vegetables, fats and sugars).	**Gods and Mortals** **Greek designer: Archimedes.**		**Tremors** **Volcanoes (DT focus)** Shell structures are hollow, 3-D structures with a thin outer covering, such as a box. Frame structures are made from thin, rigid components, such as a tent frame. The rigid frame gives the structure shape and support. Diagonal struts can strengthen the structure. Create shell or frame structures using diagonal struts to strengthen them.
Year 4		**Bottoms, Burps and Bile**		**Misty Mountain Sierra**	**Road trip USA**	

Designer: Vivienne Westwood		**Textiles (Digestion T-shirt) DT Focus. Vivienne Westwood.** Annotated sketches and exploded diagrams show specific parts of a design, highlight sections or show functions. They communicate ideas in a visual, detailed way. Use annotated sketches and exploded diagrams to test and communicate their ideas.		**Electric Game.** An electric circuit can be used in a model, such as a lighthouse. It can be controlled using a switch. (Science- Electricity) Incorporate a simple series circuit into a model. (Science- Electricity)	**Model Making Totem Pole Design** Design features are the aspects of a product's design that the designer would like to emphasise, such as the use of a particular material or feature that makes the product easier to use or more durable. Investigate and identify the design features of a familiar product.	
End Points for LKS2:	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. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately. 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. Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world. Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages). Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors). Understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.					

D+T- UKS2

Knowledge Skill End Point	Aut 1	Aut 2	Spring 1	Spring 2	Sum 1	Sum 2
Year 5 Designer: Werner Stengel	**Off with her Head** **Cooking and nutrition/ Cookery Corner** Seasonality is the time of year when the harvest or flavour of a type of food is at its best. Buying seasonal food is beneficial for many reasons: the food tastes better; it is fresher because it hasn't been transported thousands of miles; the nutritional value is higher; the carbon footprint is lower, due to reduced transport; it supports local growers and is usually cheaper. Describe what seasonality means and explain some of the reasons why it is beneficial.		**Beast Creator** **Making Models** Materials should be cut and combined with precision. For example, pieces of fabric could be cut with sharp scissors and sewn together using a variety of stitching techniques. Select and combine materials with precision. Knowledge		**Scream Machine** **Designing rides; Programming models; Mechanical systems. Werner Stengel- Rollercoaster designer.** Equipment and devices can be controlled by pressing buttons on a control panel, such as on a washing machine or microwave. Link a physical device to a computer or tablet so that it can be controlled (such as changing motor speed or turning an LED on and off) by a program.	**Sow, Grow and Farm** **Making planters; Making structures** Materials should be cut and combined with precision. For example, pieces of fabric could be cut with sharp scissors and sewn together using a variety of stitching techniques. Select and combine materials with precision.
Year 6	Heart and Blood	Frozen Kingdom	A Child's War			Gallery Rebels

Designer: Henry Royce	**Healthy recipes** Eating a balanced diet is a positive lifestyle choice that should be sustained over time. Food that is high in fat, salt or sugar can still be eaten occasionally as part of a balanced diet. Plan a healthy daily diet, justifying why each meal contributes towards a balanced diet.	**Judder Robots and Cars. Designer- Henry Royce.** Mechanical systems can include sliders, levers, linkages, gears, pulleys and cams. Other mechanisms include pneumatics and hydraulics. Explain and use mechanical systems in their products to meet a design brief.	**Anderson Shelter** Strength can be added to a framework by using multiple layers. For example, corrugated cardboard can be placed with corrugations running alternately vertically and horizontally. Triangular shapes can be used instead of square shapes because they are more rigid. Frameworks can be further strengthened by adding an outer cover. Select the most appropriate materials and frameworks for different structures, explaining what makes them strong.			**Enterprise Project** Design criteria should cover the intended use of the product, age range targeted and final appearance. Ideas can be communicated in a range of ways, including through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Skill Develop design criteria for a functional and appealing product that is fit for purpose, communicating ideas clearly in a range of ways. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern

						pieces and computer-aided design.
End Points for UKS2: ***Covered in LKS2 also***	***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.*** ***Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.*** ***Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately.*** ***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.*** ***Investigate and analyse a range of existing products.*** ***Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.*** ***Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.*** ***Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages).*** ***Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors).*** Apply their understanding of computing to program, monitor and control their products. ***Understand and apply the principles of a healthy and varied diet.*** ***Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.*** ***Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.***					