# Leigh St Peter's C.E. Primary School

"Let Your Light Shine" Matthew 5:16

## Design Technology Curriculum

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| **Nursery** | ▪ Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.<br>▪ Explore different materials freely, in order to develop their ideas about how to use them and what to make.<br>▪ Develop their own ideas and then decide which materials to use to express them.<br>▪ Create closed shapes with continuous lines, and begin to use these shapes to represent objects.<br>▪ Explore how things work.<br>▪ Use large-muscle movements to wave flags and streamers, paint and make marks.<br>▪ Choose the right resources to carry out their own plan.<br>▪ Use one-handed tools and equipment, for example, making snips in paper with scissors.<br>▪ Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them. | | | | | |
| **Reception** | ▪ Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.<br>▪ Share their creations, explaining the process they have used.<br>▪ Use a range of small tools, including scissors, paintbrushes and cutlery.<br>▪ Explore, use and refine a variety of artistic effects to express their ideas and feelings.<br>▪ Return to and build on their previous learning, refining ideas and developing their ability to represent them.<br>▪ Create collaboratively, sharing ideas, resources and skills.<br>▪ Develop their small motor skills so that they can use a range of tools competently, safely and confidently. | | | | | |

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| **Year 1** | **Cook**<br>Dips and Vegetables | | **Sew**<br>Animal Sock Puppets | | **Build Vehicles** | |
| **NC coverage** | ▪ use the basic principles of a healthy and varied diet to prepare dishes<br>▪ understand where food comes from. | | <u>Design</u><br>▪ Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing and templates.<br><u>Make</u><br>▪ 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 textiles, according to their characteristics.<br><u>Evaluate</u><br>▪ Explore and evaluate a range of existing products, evaluate their ideas and products against design criteria. | | As in Spring 1 for design, make and evaluate.<br><br><u>Technical knowledge</u><br>▪ Build structures exploring how they can be made stronger, stiffer and more stable, explore and use mechanisms (for example wheels and axles) in their products | |
| **Knowledge Goals** | ▪ Fruit and vegetables have important nutrients in them to keep us fit and healthy<br>▪ We can say that food is sweet and savoury.<br>▪ We can eat some fruit and vegetables raw, without cooking them | | ▪ Objects are made from different materials which are suitable for what we use them for.<br>▪ Fabric is suitable for making clothes and puppets.<br>▪ We can reuse materials for a new reason or purpose<br>▪ Designing means planning how something is going to look and work<br>▪ When we design a product, we need to think about who will use it, what it is for, and what it will look like<br>▪ Properties of materials are things we can measure, see or feel and affect how we use materials. | | ▪ A vehicle is something that transports people or things from one place to another.<br>▪ Lots of vehicles have wheels.<br>▪ An axle can join two wheels on a vehicle together<br>▪ Designing means planning how something is going to look and work.<br>▪ When we design a product, we need to think about who will use it, what it is for, and<br>▪ what it will look like.<br>▪ Properties of materials are things we can measure, see or feel and affect how we use materials | |
| **Skills** | ▪ Following a simple recipe •Measuring in spoonfuls<br>▪ Cutting, chopping<br>▪ Using a knife and a chopping board<br>▪ Bridge and claw technique— flat side down<br>▪ Cutting with scissors<br>▪ Mashing<br>▪ Mixing | | <u>Research and Investigate</u> Existing products<br><u>Design</u><br>▪ Understand criteria (user, purpose, function, appeal), generate/develop ideas,<br>▪ talking, drawing, labelling<br><u>Make</u><br>▪ Select tools/materials, making paper templates/, drawing/cutting shapes, gluing,<br>▪ joining fabric, drying<br><u>Use and Evaluate</u><br>▪ Recording of children using puppets, evaluate against criteria. | | <u>Research and Investigate</u><br>▪ Different types of vehicles, different parts of a vehicle.<br>▪ explore wheels and axles in toy cars.<br><u>Design</u><br>▪ Understand criteria (user, purpose, function, appeal); generate/innovate/<br>▪ develop ideas; talking; drawing; labelling.<br><u>Make</u><br>▪ Select tools/materials for making a toy vehicle with wheels and axles;<br>▪ cutting; different ways of joining decorating; finishing | |

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| | | | | | <u>Use and Evaluate</u><br>▪ Car racing in the playground exploring speed; film/photograph<br>▪ children doing this; evaluation against criteria and existing products | |
| **Concepts** | ▪ Nutrition—vegetables<br>▪ Sweet versus savoury<br>▪ Cooked versus raw<br>▪ • Cooking from different cultures—Greece | | ▪ Process of design<br>▪ Making products with fabric<br>▪ Properties of a range of materials<br>▪ Using suitable materials<br>▪ Fixing fabric together<br>▪ Reusing/recycling materials<br>▪ Features of a puppet<br>▪ • Features of different animals | | ▪ Process of design<br>▪ Vehicles: user and purpose<br>▪ Mechanical systems: wheels and axles<br>▪ Wheels and axles in everyday examples<br>▪ Structures and materials to make vehicles strong, stiff and stable.<br>▪ Materials—properties and functionality<br>▪ Vehicles and pollution | |

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| **Year 2** | Cook - Gingerbread | | Sew Pencil Cases | | Build Moving Pictures | |
| **NC coverage** | ▪ use the basic principles of a healthy and varied diet to prepare dishes<br>▪ understand where food comes from. | | <u>Design</u><br>▪ Design purposeful, functional, appealing products for themselves and other users<br>▪ based on design criteria.<br>▪ Generate, develop, model and communicate their ideas through talking, drawing and templates.<br><u>Make</u><br>▪ 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 textiles, according to their characteristics.<br><u>Evaluate</u><br>▪ Explore and evaluate a range of existing products, evaluate their ideas and products<br>▪ against design criteria. | | Design<br>▪ Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas<br>▪ through talking, drawing and mock ups.<br><u>Make</u><br>▪ 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<br>▪ materials and components, including construction materials, according to their characteristics.<br><u>Evaluate</u><br>▪ Explore and evaluate a range of existing products, evaluate their ideas and products against design criteria.<br><u>Technical knowledge</u><br>▪ Build structures exploring how they can be made stronger, stiffer and more stable, explore and use mechanisms (for example levers and sliders) in their products | |
| **Knowledge Goals** | ▪ Gingerbread is a biscuit that is flavoured with the spice, ginger.<br>▪ Spices are usually used in small quantities because they have a strong flavour.<br>▪ Biscuits are made from a dough which needs to be baked | | ▪ Clothes and pencil cases can be made from fabric<br>▪ Sewing is a way to join fabric together<br>▪ A needle and thread are used to make stitches<br>When designing a product we need to think about who will use it, its function and its appearance<br>▪ Running stitch can be used for joining two pieces of fabric together, creating a seam<br>▪ A feature stitch is a stitch which we can see and can be used to decorate something | | ▪ A lever is a mechanism which uses a bar and a pivot to move heavy loads<br>▪ A sea saw, a wheelbarrow and a shaduf are examples of lever mechanisms<br>▪ A slider has a bar but does not use a pivot<br>Designing means planning how something is going to<br>▪ look and work<br>▪ When we design a product, we need to think about who will use it, what it is for, and what it will look like<br>▪ Properties of materials are things we can measure, see or feel and affect how we use materials | |
| **Skills** | ▪ Following a simple recipe<br>▪ Measuring using spoons<br>▪ Chopping, Mixing<br>▪ Rubbing fat into flour<br>▪ Cracking an egg<br>▪ Making a dough, rolling, cutting<br>▪ Baking, cooling | | <u>Research and Investigate</u><br>▪ Existing products<br><u>Design</u><br>▪ Understand criteria (user, purpose, function, appeal), generate/develop<br>▪ ideas, talking, drawing, labelling<br><u>Make</u> | | <u>Research and Investigate</u><br>▪ Levers and sliders; examples of what products which used<br>▪ these: see saw, scissors, hammer, wheelbarrow, shaduf; research examples of moving pictures<br><u>Design</u><br>▪ Understand criteria (user, purpose, function, | |

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| | ▪ Decorating | | ▪ Select tools/materials, using paper templates/patterns, drawing/cutting<br>▪ shapes, threading a needle, tying a knot, running stitch, gluing on decoration<br><u>Use and Evaluate</u><br>▪ Photograph pencil cases, written evaluation against criteria | | appeal); generate/innovate/<br>▪ develop ideas; talking; drawing; labelling; creating a mock up.<br><u>Make</u><br>▪ Select tools/materials for making a moving picture with levers and sliders;<br>▪ cutting; different ways of joining decorating; finishing<br><u>Use and Evaluate</u><br>▪ Photograph pictures; evaluation against criteria and existing products | |
| ▪ **Concepts** | ▪ Spices<br>▪ Spicy/sweet<br>▪ History of food<br>▪ Food transport and cost of ingredients<br>▪ Decoration<br>▪ Cooked v raw<br>▪ Baking | | ▪ Process of design<br>▪ Features of a pencil case how they work, size, materials, fastenings, shape, joining, decoration<br>▪ Using suitable materials<br>▪ Properties of different materials<br>▪ Making products with fabric<br>▪ Join fabric together — sewing and gluing<br>▪ Creating stiches with a needle and thread | | ▪ Process of design<br>▪ Mechanical systems: Levers and sliders<br>▪ Levers and sliders in everyday examples<br>▪ Structures and materials to make levers and sliders in moving pictures strong, stiff and stable | |

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| **Year 3** | Sew<br>Key Rings & Decorations | | Build<br>Pop Up Books | | Cook<br>Pasta | |
| **NC coverage** | <u>Design</u><br>▪ 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, pattern pieces<br><u>Make</u><br>▪ Select from and use a wider range of tools and equipment to perform practical tasks, for example, cutting, shaping, joining and finishing; select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities.<br><u>Evaluate</u><br>▪ 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. | | <u>Design</u><br>▪ 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, prototypes.<br><u>Make</u><br>▪ Select from and use a wider range of tools and equipment to perform practical tasks, for example, cutting, shaping, joining and finishing; select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.<br><u>Evaluate</u><br>▪ 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;<br>▪ understand how key events and individuals in design and technology have helped shape the world.<br><u>Technical knowledge</u><br>▪ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures; understand and use mechanical systems in their products (for example, levers and linkages). | | ▪ understand and apply the principles of a healthy and varied diet<br>▪ prepare and cook a variety of dishes using a range of cooking techniques<br>▪ • know where and how a variety of ingredients are grown, reared, caught and processed | |
| **Knowledge Goals** | ▪ Fabric can be made from natural or synthetic materials<br>▪ Wool from sheep and cotton from plants are examples of natural materials<br>▪ Felt is made by pressing materials together<br>When designing a product we need to think about who will use it, its function and aesthetic appeal<br>▪ Running stitch and backstitch can be used | | ▪ Levers can be joined together to form linkages<br>▪ Linkages are used to change direction of motion<br>▪ Linkages have fixed and moving pivots<br>▪ Designing means planning and drawing what a product will look like and how it will work<br>▪ When designing a product we need to think carefully about the materials we will use.<br>▪ When designing a product we need to think about who will use it, its function and | | ▪ Pasta, which can be dried or eaten fresh, can be boiled or baked<br>▪ Italy is famous for pasta<br>▪ Tomatoes, which can be preserved by tinning are often used to make a pasta sauce | |

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| | for joining two pieces of fabric together<br>▪ Backstitch is stronger than running stitch | | aesthetic appeal | | | |
| **Skills** | <u>Research and Investigate</u><br>▪ Examples of key rings/decorations, different fabrics, how to make felt<br><u>Design</u><br>▪ Devising criteria (user, purpose, function, appeal), generate/innovate/ develop ideas, annotated drawings<br><u>Make</u><br>▪ Select tools/materials, making paper templates/patterns, drawing/cutting shapes, pinning, threading a needle, tying a knot, running stitch, back stitch, joining, stuffing, gluing, sewing/gluing on a loop<br><u>Use and Evaluate</u><br>▪ Photograph, written peer evaluation—against criteria and existing products | | <u>Research and Investigate</u><br>▪ Linkages; examples of what products which used these: clothes horse, lifts, tool box, engines.<br><u>Design</u><br>▪ Devising criteria (user, purpose, function, appeal); generate/innovate/develop ideas;<br>▪ create annotated drawings and prototypes.<br><u>Make</u><br>▪ Select tools/materials for making pop-up book with linkages, cutting, different ways of joining, decorating, finishing<br><u>Use and Evaluate</u><br>▪ Photograph books, written evaluation against criteria and existing products | | •Chopping<br>•Peeling<br>•Pressing<br>•Following a recipe<br>•Weighing using scales<br>•Using a knife—claw method<br>•Using a chopping board | |
| **Concepts** | ▪ Process of design<br>▪ Making products with fabric<br>▪ Types of fabric - natural/synthetic<br>▪ Properties of fabric—thickness, softness, stretchiness<br>▪ What materials are key rings/decorations made of. How fabric is fit for purpose.<br>▪ • Features of a key ring/decoration—size, materials, shape, joining, stitching, decoration | | ▪ Process of design<br>▪ Mechanical systems: Linkages: moving pivot, fixed pivot, types of motion<br>▪ Linkages — uses and purpose in everyday examples.<br>▪ Materials to make linkages in moving books—strong, stiff and stable. | | ▪ Sweet/Savoury<br>▪ Food from different cultures<br>▪ Pasta<br>▪ Pasta production<br>▪ Vegetables are part of a healthy diet<br>▪ Tomatoes—production, preserving | |

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| **Year 4** | Sew Cushions | | Build<br>Moving Miniature<br>Playgrounds | | Cook Apple Crumble | |
| **NC coverage** | <u>Design</u><br>▪ 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, pattern pieces<br><u>Make</u><br>▪ Select from and use a wider range of tools and equipment to perform practical tasks, for example, cutting, shaping, joining and finishing;<br>▪ select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities.<br><u>Evaluate</u><br>▪ Investigate and analyse a range of existing products; evaluate their ideas and products against their own design criteria and<br>▪ consider the views of others to improve their work; understand how key events and individuals in design and technology have helped shape the world. | | <u>Design</u><br>▪ 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, exploded diagrams.<br><u>Make</u><br>▪ Select from and use a wider range of tools and equipment to perform practical tasks, for example, cutting, shaping, joining and finishing; select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.<br><u>Evaluate</u><br>▪ 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.<br><u>Technical knowledge</u><br>▪ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures; understand and use mechanical systems in their products (for example gears). 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<br>▪ prepare and cook a variety of dishes using a range of cooking techniques<br>▪ know where and how a variety of ingredients are grown, reared, caught<br>▪ and processed | |
| **Knowledge Goals** | ▪ Appliqué is a technique where pictures or patterns made from fabric are sewn onto a background<br>▪ Appliqué is a very old sewing technique and was used by the ancient Egyptians<br>▪ Examples of appliqué were found in the tomb of Tutankahmun<br>Fabric is made from different materials (e.g. wool/cotton) and in different ways (e.g. pressing/weaving)<br>▪ Running stitch and backstitch can be | | ▪ Gears are wheels with teeth which interlock<br>▪ A drive gear transfers motion to a driven gear<br>▪ A bicycle uses gears to change the speed at<br>▪ which it travels<br>Designing means planning and drawing what a product will look like and how it will work<br>▪ When designing a product we need to think carefully about the materials we will use.<br>▪ When designing a product we need to think | | ▪ Crumble is an British dessert which has a crumbly top with cooked fruit, such as apples, underneath.<br>▪ Apples can be part of a healthy diet<br>▪ There are lots of different varieties of apple which are grown in Britain and which ripen at different times of the year | |

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| | used for joining two pieces of fabric together<br>▪ Overcast stitch (or whipstitch) can be used for appliqué or for joining two pieces of fabric together | | about who will use it, its function and aesthetic appeal. | | | |
| **Skills** | <u>Research and Investigate</u><br>▪ Appliqué, cushions, running stitch, backstitch, overcast stitch (whipstitch)<br><u>Design</u><br>▪ Devising criteria (user, purpose, function, appeal), generate/innovate/ develop ideas, annotated drawings<br><u>Make</u><br>▪ Select tools/materials, making paper templates/patterns, drawing/cutting shapes, pinning, threading a needle, tying a knot, running stitch, backstitch, overcast stitch (whipstitch), appliqué, stuffing<br><u>Use and Evaluate</u><br>▪ Photograph, written evaluation, peer evaluation—against criteria | | <u>Research and Investigate</u><br>▪ Gears; examples of products which used these: tin openers, bicycles; how gears on a bicycle work; history of gears, ancient Greek Antikythera mechanism (used to predict astronomical positions)<br><u>Design</u><br>▪ Devising criteria (user, purpose, function, appeal); generate/innovate/develop ideas; create annotated drawings and exploded diagrams.<br><u>Make</u><br>▪ Select tools/materials for making a moving toy with gears and an electrical circuit, cutting, different ways of joining, decorating, finishing<br><u>Use and Evaluate</u><br>▪ Written evaluation against criteria and existing products | | ▪ Using a chopping board<br>▪ Rubbing fat into flour<br>▪ Sprinkling<br>▪ Baking<br>▪ Cooling<br>▪ Following a recipe<br>▪ Weighing using scales<br>▪ Peeling, coring, chopping<br>▪ Using a knife—bridge method | |
| **Concepts** | ▪ Process of design<br>▪ Making products with fabric<br>▪ Types of fabric - natural/synthetic<br>▪ Properties of fabric—thickness, softness, stretchiness.<br>▪ Features of a cushion – size, materials, shape, joining, decoration.<br>▪ • Decoration—appliqué | | ▪ Process of design<br>▪ Mechanical systems: gears, teeth, interlock, motion transfer, drive gear, driven gear, gearing up, gearing down<br>▪ Gears: user and purpose in everyday examples.<br>▪ Structures and materials to make a product with gears —3d shapes, strong, stiff and<br>▪ stable.<br>▪ Electrical systems: circuits, batteries, bulbs and buzzers. | | ▪ Sweet/Savoury<br>▪ British cooking<br>▪ Different varieties of apples including cooking and eating apples<br>▪ Apples as part of a healthy diet<br>▪ Seasonality<br>▪ Environment and sustainability—eating local produce<br>▪ Affordability | |

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| **Year 5** | Build Cams Toys | | Cook Honey Cake | | Sew Bags | |
| **NC coverage** | <u>Design</u><br>▪ 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 diagrams.<br><u>Make</u><br>▪ Select from and use a wider range of tools and equipment to perform practical tasks, for example, cutting, shaping, joining and finishing; select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.<br><u>Evaluate</u><br>▪ 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.<br><u>Technical knowledge</u><br>▪ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures;<br>▪ understand and use mechanical systems in their products (for example, cams). | | ▪ understand and apply the principles of a healthy and varied diet<br>▪ prepare and cook a variety of dishes using a range of cooking techniques<br>▪ • know where and how a variety of ingredients are grown, reared, caught and processed | | <u>Design</u><br>▪ 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<br><u>Make</u><br>▪ Select from and use a wider range of tools and equipment to perform practical tasks, for example, cutting, shaping, joining and finishing; select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities.<br><u>Evaluate</u><br>▪ 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. | |
| **Knowledge Goals** | ▪ A cams mechanism transfers rotary motion to linear motion<br>▪ The different parts of a cams mechanism are a<br>▪ cam, a follower, a slider and a camshaft<br>▪ Cams mechanisms were used by Ismail al-Jazari in the Islamic Golden Age<br>▪ Different shaped cams cause the follower to move up and down in a different way<br>▪ An eccentric cam moves up and down at a constant rate<br>▪ When designing a product we need to think about who will use it, its function | | ▪ Bees make honey for themselves to eat. Humans can eat honey which is left over<br>▪ Honey can be harvested from a hive by a trained beekeeper<br>▪ Different versions of honey cakes, which are usually baked in an oven, are popular all over the world | | ▪ Appliqué and embroidery can be used to decorate<br>▪ fabric<br>▪ Appliqué is a technique where pictures or patterns<br>▪ made from fabric are sewn onto a background<br>▪ Embroidery is a technique where pictures or patterns<br>▪ are made by stitches on fabric<br>▪ Backstitch can be used for joining two pieces of fabric together to make a seam or a hem<br>▪ Overcast stitch (or whipstitch) can be used for<br>▪ appliqué<br>▪ Lots of different stitches can be used for embroidery like backstitch, running stitch and | |

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| | and aesthetic appeal | | | | cross stitch | |
| **Skills** | <u>Research and Investigate</u><br>▪ Cams mechanisms; examples of what products use cams and followers: mechanical toys, sewing machines, engines, clocks; history of cams and mechanisms—Ismail al-Jazari; structure of a cams toy<br><u>Design</u><br>▪ Devising criteria (user, purpose, function, appeal); generate/innovate/develop ideas; create annotated drawings and cross-sectional diagrams<br><u>Make</u><br>▪ Select tools/materials for making a cam toy, cutting, different ways of joining, decorating, finishing<br><u>Use and Evaluate</u><br>▪ Videoed peer evaluation—against criteria and existing products | | ▪ Beating<br>▪ Drizzling<br>▪ Baking<br>▪ Cooling<br>▪ Following a recipe<br>▪ Measuring using scales/measuring jug<br>▪ Mixing<br>▪ • Cracking an egg | | <u>Research and Investigate</u><br>▪ Methods of decoration: appliqué, embroidery; bag design, materials and features<br><u>Design</u><br>▪ Devising criteria (user, purpose, function, appeal), generate/innovate/develop ideas, annotated drawings<br><u>Make</u><br>▪ Select tools/materials, drawing/cutting shapes, pinning, threading a needle, tying a knot, backstitch, overcast stitch (whipstitch), joining, embroidery, appliqué, plaiting<br><u>Use and Evaluate</u><br>▪ Written evaluation, photograph, film peer evaluation—against criteria and existing products | |
| **Concepts** | • Process of design<br>• Mechanical systems: cams, followers, sliders, camshaft, rotary motion, linear motion, cam profiles.<br>• Everyday examples and purpose of cams mechanisms.<br>• Structures and materials to make products with cams and followers — 3d shapes, strong, stiff and stable. | | ▪ Sweet/Savoury<br>▪ Honey production and history<br>▪ Health benefits of honey<br>▪ Cooking from different cultures<br>▪ Baking | | ▪ How fabrics are made—weaving<br>▪ Features of a bag – size, materials, fastenings, shape, joining, decoration, handles.<br>▪ Decoration—appliqué, embroidery<br>▪ Process of design<br>▪ Making products with fabric<br>▪ Types of fabric—natural/ synthetic<br>▪ Properties and suitability of fabric | |

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| **Year 6** | Build Water Walls | | Cook Mezze | | Sew Upcycling Fashion | |
| **NC coverage** | <u>Design</u><br>▪ 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, prototypes.<br><u>Make</u><br>▪ Select from and use a wider range of tools and equipment to perform practical tasks, for example, cutting, shaping, joining and finishing; select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.<br><u>Evaluate</u><br>▪ 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.<br><u>Technical knowledge</u><br>▪ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures; understand and use mechanical systems in their products (for example, pulleys) | | ▪ understand and apply the principles of a healthy and varied diet<br>▪ prepare and cook a variety of dishes using a range of cooking techniques<br>▪ know where and how a variety of ingredients are grown, reared, caught andprocessed | | <u>Design</u><br>▪ 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, pattern pieces<br><u>Make</u><br>▪ Select from and use a wider range of tools and equipment to perform practical tasks, for example, cutting, shaping, joining and finishing; select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities.<br><u>Evaluate</u><br>▪ 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. | |
| **Knowledge Goals** | ▪ An Archimedes' screw transports water uphill.<br>▪ A pulley helps to lift loads more easily<br>▪ Creating a prototype can be part of the design process<br>Designs for new products can use environmentally friendly solutions such as reuse of plastics or not using electricity<br>▪ When designing a product we need to think about who will use it, its function and aesthetic appeal<br>▪ When designing a product we need to | | ▪ 'Mezze' is a name for a selection of small, savoury dishes which people can share<br>▪ Mezze are cooking in countries such as Greece,<br>▪ Bulgaria, Turkey, Iran and Iraq<br>▪ A mezze is an example of a balanced meal | | ▪ 'Fast fashion' means the design, manufacturing and selling of clothes focused on producing a very large number of clothes cheaply<br>▪ Upcycling means using an old, disused item to make<br>▪ a new one<br>▪ Some clothes manufacturers and designers try to<br>▪ use methods and resources which are environmentally friendly and do not create pollution<br>▪ Backstitch can be used for joining two pieces of fabric together to make a seam or a hem<br>▪ Appliqué and embroidery can be used to decorate | |

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| | think about how we use materials | | | | ▪ fabric<br>▪ Overcast stitch (or whipstitch) can be used for<br>▪ appliqué and lots of different stitches can be used<br>▪ for embroidery like backstitch, running stitch and<br>▪ cross stitch | |
| **Skills** | <u>Research and Investigate</u><br>▪ Investigate water wall and pulleys<br><u>Design</u><br>▪ Devising criteria (user, purpose, function, appeal), generate/innovate/ develop ideas, create annotated drawings and prototypes<br><u>Make</u><br>▪ Select tools/materials for making a water wall for Reception with recycled objects, cutting, tying knots, sticking, making holes<br><u>Use and Evaluate</u><br>▪ Evaluation with user (Reception)—against criteria and existing products | | ▪ Following a recipe<br>▪ Weighing ingredients using scales<br>▪ Using a knife—bridge and claw method<br>▪ Chopping<br>▪ Squeezing a lemon<br>▪ Grating<br>▪ Using a garlic press<br>▪ Seasoning<br>▪ Soaking<br>▪ Mixing<br>▪ Mashing<br>▪ Following a recipe<br>▪ Weighing ingredients using scales<br>▪ Using a garlic press<br>▪ Cooking with meat<br>▪ Cracking an egg | | <u>Research and Investigate</u><br>▪ Fast fashion, upcycling, recycling, sustainability<br><u>Design</u><br>▪ Devising criteria (user, purpose, function, appeal), generate/innovate/develop ideas, annotated drawings, pattern pieces<br><u>Make</u><br>▪ Experimentation with upcycling existing garments, select tools/materials, drawing/cutting shapes, creating pattern pieces, pinning, threading a needle, tying a knot, joining, appliqué, embroidery, running stitch, backstitch, overcast stitch, plaiting, attaching a button<br><u>Use and Evaluate</u><br>▪ Written evaluation, photograph, evaluation—against criteria and existing products, film fashion show | |
| **Concepts** | ▪ Process of design<br>▪ Mechanisms: pulleys, Archimedes' screw<br>▪ Everyday examples and purpose of pulleys. Purpose of Archimedes' screw<br>▪ Structures and materials to make products with pulleys in everyday examples—3d<br>▪ shapes, strong, stiff and stable.<br>▪ Plastics pollution/recycling/reuse<br>▪ Use of electricity and connection to global warming<br>▪ Engineering systems to create environmentally friendly solutions—Nav Sawhney and the Washing Machine Project.<br>▪ Appropriate use of materials | ▪ | ▪ Cooking from different cultures<br>▪ Sweet/Savoury<br>▪ Mezze—sharing food<br>Balanced diet and different food groups<br>▪ Seasoning<br>▪ Herbs and spices | | ▪ Process of design<br>▪ Fast fashion and globalisation<br>▪ Waste and pollution<br>▪ Upcycling, recycling, sustainability<br>▪ Processes for making clothes—seams and hems<br>▪ Decoration—appliqué, embroidery, buttons, gluing | |