# St Chad's Curriculum 2022

| Design and Technology Long Term Plan Cycle A | | | |
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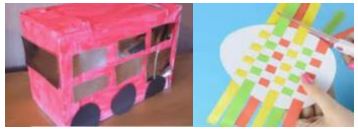
| Year group | Autumn | Spring | Summer |
| EYFS | **Happily Ever After/Jesus is the Reason for the Season**<br><br>**Make**<br>Build a bridge or a boat, for the Gingerbread Man to cross the river<br>Playdough gingerbread men<br>Ant pies in the mud kitchen<br><br>  | **Life's a Journey/ God's Wonderful World**<br><br>**Make**<br>Junk model London buses<br>Huge London bus using play blocks<br>Make hatching eggs using split pins<br>Make party decorations<br>Paper weaving – Easter Cards<br><br>  | **Commotion in the Ocean / Nature's Kitchen**<br>**Make**<br>Junk model submarines<br>Salt dough fish (Nursery)<br>Create superhero vegetables with pipe cleaners, googly eyes and pieces of fabric<br>Superhero mask/ capes<br>Superhero laser goggles or cuffs using card<br>Design and make evil pea traps<br><br>  |
| Y1/2 | **Local Heros**<br>**Mechanisms** - Propeller boat<br><br>**Design and make a propeller boat and see whether you can avoid an iceberg!**<br><br>  <br><br>**John Ericsson** invented the ship propeller.<br><br>**Test it:**<br>Does the prpellor make your boat move in the water and can it move around an iceberg? | **We do like to be beside the seaside**<br>**Textiles** - Puppet Making<br><br>**Create a hand puppet, to put on a show for the EYFS**<br>(i.e Punch and Judy) or link to Pathways Book<br>   <br><br>**Jim Henson** – muppets<br>**Test it:**<br>Make puppets and build a class theatre. Did the children enjoy it? | **Where would you prefer to live England or Africa?**<br>**Materials** - African Paper Mask<br><br>**Design and make a paper mask to represent your class (tribe) – the winner to be displayed on the class door!**<br><br>  <br><br>**Mlle Hipolyte** – contemporary animal masks<br>**Test it:**<br>Does your mask represent St Chad's? Did yours win the class vote? |

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| Y3/4 | **Local Detectives**<br>Electronics/Construction - Miners Lamp<br>**Design and make a lamp to help the miners see down the mines.**<br>  <br>In the style of the Davy Lamp (**Sir Humphry Davy**) incorporating a bulb (**Thomas Eddison)**<br><br>**Test it:**<br>Darken the class room, does your lamp give enough light to move around safely?<br><br>**Mechanisms – Pop Up Christmas Cards**<br>https://www.youtube.com/watch?v=qGujUeAdtNc<br>  <br>**Designer – Matthew Reinhart** | **Ruthless Romans**<br>Construction - Roman Shields<br>**Design and make a shield to keep a Roman solider safe in battle**<br>  <br>Contemporary Link – police riot shield designed by **Arnolds** – Are they a similar design?<br><br>**Test it:**<br>Create a testudo formation on the playground, your teachers throw cardboard arrows – does your shield protect you? | **Go Greece Lightening**<br>Textiles - Greek sandals<br>**Design and make a Greek sandal, to fit your foot**<br>  <br>https://www.hamilton-trust.org.uk/topics/unit/1359-making-sandals/<br><br>Contemporary link – Designer **Jimmy Choo**<br><br>**Test it:**<br>March around the field like a Greek soldier. Did your sandal fit your foot and remain in one piece? Did your foot remain cool? Was it comfortable? |
| Y5/6 | **War Child**<br>Food - Then (rations) and Now<br>**Design and bake a main meal on a budget considering seasonality and ratios.**<br>  <br>Phillip Harburn – first male TV chef 1946<br>  <br>Mary Berry Traditional cook<br>Jamie Oliver School Dinners<br>Nadiya Hussain Great British Bake Off<br>  <br>Michelin Star chef - Heston Blumenthal<br>**Test it:** | **Trailblazers**<br>Materials/Construction/Electronics - Games<br>**Design and make a moving carousel ride**<br>**(Linked to our Computing Curriculum – Scratch and Crumble)**<br>Protoype in card then a large scale whole class model (in wood). Add the **electrical element** to the design (lights, buzzer, switches etc).<br>  <br>**Thomas Bradshaw,** an English man built, the first carousel in 1861**, The Flying Horse** – was the first carousel built in the USA in 1876 by **the Charles Dare**<br>**John Spinello** – designer of the buzzer game Operation<br><br>**Test it:** | **Smashing Saxons**<br>Textiles - Anglo Saxon Purses<br>**Design and make a fabric money container that doesn't let the money fall out!**<br>Use a drawstring, a catch/button or zip<br>  <br>Contemporary wallet designers: **Fendi, Louis Vuitton, Dior**<br><br>Test it:<br>Fill the finished purse with coins and turn it upside down - do the coins stay inside the purse? |

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| | Provide a portion for Mrs Brennan's lunch. Can you explain seasonality and ratios to Mrs Brennan | Take to KS1 for their wet playtime. Can the children make the carousel move, light up and buzz? | |

# Design and Technology Long Term Plan Cycle B

| Year group | Autumn | Spring | Summer |
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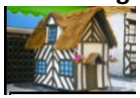
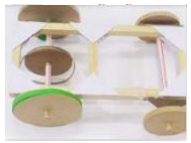
| EYFS | **Let There Be Light/Let's Celebrate**<br><br>**Make**<br>Junk model Mr. Bear's house<br>Make a patchwork quilt using different art media<br>Make bear masks<br>Den building outside play – real bricks, real hay/straw/sticks to build with<br>Make a house frame using playdough and straws or marshmallows and pasta<br>Pig snouts using egg boxes and elastic<br>  | **All Creatures Great and Small/All Aboard the Jolly Roger!**<br><br>**Make**<br>Spring dream catchers<br>Make salt dough mice<br>Junk model crocodiles<br>Design their own pirate flag and treasure map<br>Salt dough treasure<br>  | **Stomp, chomp ROAR/A Bucket full of Memories**<br><br>**Make**<br>Create dinosaurs with half a paper plate and kitchen rolls for legs<br>Make dinosaur heads using an egg box<br>Make a play dough dinosaur and add pasta shape 'spikes'<br>Make something for a teddy so that you won't lose him<br>Create a lost property box<br>Make a split pin teddy bear<br>  |
| Y1/2 | **Great and Ghastly Events**<br>**Construction/Materials** – Houses<br>**Design and make a Tudor and compare to a modern day house – which is the strongest/safest?**<br>   <br>**Designer – Sir Christopher Wren**<br><br>**Test it:**<br>Create a tudor village outside and see if a fire would spread through your houses! | **Memory Box**<br>**Food** - Apple Crumble and Oatcakes<br>**Bake a pudding to remind your grandparents of their school dinners**<br>Children to make an apple crumble and custard.<br>Invite grandparents in to eat.<br>   <br>Traditional cook – **Delia Smith**<br>**Plus: Local Food - Cheesy Oatcakes**<br>  <br>**Test it:**<br>Invite Grandparents in to eat the pudding. Did it remind them of their school dinners? | **Unbelievable UK**<br>**Mechanisms** - Build a Car<br><br>**Design and make, a moving vehicle to carry an egg safely across uneven ground**<br>  <br>**Fredrick Bremer first UK car 1892**<br>**(Carl Benz 1886 first car)**<br><br>**Test it:** |

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| | | **Mechanisms - Easter cards – Sliders**  | Provide an uneven surface for your car to travel across. Does your car keep the egg safe? |
| Y3/4 | **Incredible Italia!**<br>**Food** - Pizza<br>**Pizza competition! Desing and bake a pizza (base and toppings). The winning design will be on the school menu the following week!**<br>  <br>Gino D'Campo Massimo Bottura<br>   <br>**Test it:**<br>Ask Mrs Wilshaw to judge which is the best pizza topping. That pizza will be on the school menu the following week. | **Stones and Bones**<br>**Materials**<br>**Design and make accessories to dress like a caveman**<br>Salt Dough Jewellery and Paper Mache Cave Man Axe<br>   <br>https://www.redtedart.com/stone-age-craft-how-to-make-a-paper-axe/<br>https://www.imagininghistory.co.uk/post/stone-age-activities-crafts-for-kids<br>https://www.imagininghistory.co.uk/post/creating-a-cave-painting<br>**Test it:**<br>Hold a caveman catwork – vote on whose accessories are the most authentic! | **Land of the Pharoahs**<br>**Mechanisms** - Pulleys and Levers<br>**Design and make a pulley to lift the final block onto a (duplo) pyramid**<br>    <br>**Designer: Elisha Otis** – in 1857 he invented the first pulley elevator in New York with a safely hoist.<br>**Test it:**<br>Did your pully lift the final block? |
| Y5/6 | **Rags to Riches**<br>**Mechanisms** - CAMS Toys<br>**Create a new toy for our nursery children**<br>  <br>https://www.instructables.com/Mechanical-Cam-Toys/<br>**Designer: Jacques de Vaucanson** is often regarded as the greatest mechanical toy crafter of all times<br>**Test it:**<br>Take the toys to our Nursery class. Can the children use the toy and do they like it? | **Raid, Invade, Stayed**<br>**Construction** - A Viking Longship<br>**Design and make a Viking Longship that is historically accurate and floats**<br>   <br>**Apply knowledge of computing to program, monitor and control the product (use Tinkercad).**<br>**Test it:**<br>Race the longboats – who's is the winner? | **Amazing Amazon**<br>**Construction** - Amazon Bridge Building<br>**Design and build a bridge to span the KS2 playground**<br>(How can we make it strong enough?)<br>  <br>**The Iron Bridge** opened in 1781, it was the first major bridge in the world to be made of cast iron.<br>Designed by - **Thomas Farnolls Pritchard**<br>(Built by – Abraham Darby)<br>**Apply knowledge of computing to program, monitor and control the product (use Tinkercad).**<br>**Test it:** |

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| | | | Built a bridge to span the KS2 playground – is it strong enough to carry a toy car across it safely? |

| DT Progression of skills, knowledge and vocabulary | | | | |
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| | | Physical Development | Expressive Art and Design | PSED/UTW |
| End of EYFS | Nursery: Skills and Knowledge | • 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. | • Make imaginative 'small worlds' with blocks and construction kits, such as a city with 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. | **PSED**<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.<br>**UTW**<br>• Explore how things work. |
| | Reception: Skills and Knowledge | • Progress towards a more fluent style of moving, with developing control and grace.<br>• Develop their small motor skills so that they can use a range of tools competently, safely and confidently. | • 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. | |
| | ELG: Skills and Knowledge | **Fine Motor**<br>• Use a range of small tools, including scissors, paintbrushes and cutlery | **Creating with Materials**<br>• 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. | |

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| | Vocabulary | Key vocabulary: tools, scissors and paintbrushes | Key vocabulary: materials, tools, explore, materials, colour, design, texture, form, function, creations , process, evaluate | Key vocablulay: explore, choose |
| | | Design | Make | Evaluate |
| End of Y2 | Skills | Children design **purposeful, functional, appealing products** for themselves and other users based on **design criteria**. They generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. | Children select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. They select from and use a wide range of materials and components,including construction materials, textiles and ingredients, according to their characteristics.<br>Children can:<br>• begin to select and use a range of tools and equipment to cut, shape, join and finish<br>• with help, measure and mark out to the nearest cm.<br>• cut, shape and score materials with some accuracy;<br>• assemble, join and combine materials, components or ingredients in order to make a product.<br>• begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations | Children explore and evaluate a range of existing products. They evaluate their ideas and products against design criteria. |
| | Knowledge | Children can:<br>• use their knowledge of existing products and their own experience to create their own ideas<br>• design products that have a purpose and explain how it will be suitable for the user | Children can:<br>• select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics. | Children can:<br>• explore and evaluate existing products mainly through discussions, comparisons and simple written evaluations.<br>• talk about their design ideas and what they are making.<br>• as they work, start to identify strengths and possible changes they |

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| | | • plan how the products will look and work, through talking and simple annotated drawings<br>• plan and test ideas using templates<br>• begin to understand and follow **simple design criteria;**<br>• choose the best tools and materials for the project and explain why they are | | might make to refine their existing design.<br>• evaluate their products and ideas against their simple design criteria<br>• talk about what went well and what they would do differently next time |
| | Vocabulary | Key vocabulary: purposeful, functional, appealing products, design criteria, products, templates, annotated drawings | Key vocabulary: tools, cut, shape, join, finish, materials, components, measure, mark, score, assemble, improve, appearance | Key vocabulary: explore, evaluate, improve, refine, design, product, criteria |
| | Technical Knowledge | Materials and Construction<br>Children build structures, exploring how they can be made stronger, stiffer and more stable. | Mechanisms | Textiles |
| | Designer/Crafts Person/Cook | **Mlle Hipolyte** – contemporary animal masks<br>**Sir Christopher Wren -** Great Fire of London rebuild | **Fredrick Bremer** first UK car 1892<br>**Carl Benz** 1886 first car<br>**John Ericsson** invented the ship propeller. | **Jim Henson** - muppets |
| | Skills | Children can:<br>• build simple structures, exploring how they can be made stronger, stiffer and more stable (use joining, rolling, folding, laying bricks to spread out the weight not directly on top of each other and own ideas);<br>• use safe ways of cutting materials including a junior hacksaw with support<br>• select from and use a wide range of materials and components, according to their characteristics. | Children can:<br>• explore and create products using mechanisms, such as levers, sliders, wheels and axles | Children can:<br>• assemble, join and combine materials,<br>• demonstrate how to measure, cut and join fabric to make a simple product.<br>• use a **basic running stich** or glue to join fabric.<br>• begin to use simple finishing techniques to improve the appearance of their product, such as adding simple decorations |
| | Knowledge | Children can:<br>• talk about and start to understand the simple working characteristics of materials and components.<br>• Use their knowledge of traditional African mask makers and the | Children can:<br>• say why they have chosen moving parts. | Children can:<br>• choose a suitable textile according to their characteristic and explain **why.** |

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| | | contemporary work of Mlle Hypolyte to inspire their work | | |
| | Vocabulary | Key vocabulary: strong, stiff, stable, design, components, structures, joining, equipment, material, fabric, shape, glue, cut, fold, staple, join, function, adhesive, template | Key vocabulary: slider, lever, pivot, slot, card, masking tape, join, pull, push, up, down, straight, curve, forwards, backwards, vehicle, wheel, axle, axle holder, cutting, joining, moving, tools, equipment materials | Key vocabulary: textile, assemble, join, combine, materials, measure, cut, product, running stitch, finishing, tools, fabrics, decorate, finish |
| | Technical Knowledge | Food<br>Children use the basic principles of a **healthy and varied diet,** and where food comes from, to prepare dishes. | Electronics | |
| | Cook | **Delia Smith** – traditional cook | N/A | |
| | Skills | Children can:<br>• with support, follow a simple plan or recipe;<br>• design and prepare simple dishes<br>• follow hygiene procedures (washing hands and cleaning work surfaces);<br>• select and use hand tools and equipment safely such as scissors, graters, safe knives<br>• cut, peel and grate ingredients,<br>• measure and weigh ingredients using measuring cups | | |
| | Knowledge | Children can:<br>• explain where in the world different foods come from;<br>• understand that all food comes from plants or animals and has to be farmed, grown or caught<br>• name and sort foods into the five groups in the Eatwell Guide;<br>• understand that everyone should eat at least five portions of fruit and | | |

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| | | vegetables every day and start to explain why; | | |
| | Vocabulary | Key vocabulary: healthy, unhealthy, source, fruit, vegetables, carbohydrates, proteins, dairy, oils, clean, safe, dirty, unsafe, amount, ingredients, recipe, weight, cut, peel, grate, slice, farmed, plant, hygiene. | | |
| | | Design | Make | Evaluate |

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| End of Y4 | Skills | Children 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**. They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design<br><br>Children can:<br>• use computer-aided design to develop and communicate their ideas where able<br>• use annotated sketches and cross-sectional drawings to develop and communicate their ideas;<br>• test ideas out through using prototypes; | Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. They 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.<br>Children can:<br>• with growing independence, measure and mark out to the nearest cm and millimetre.<br>• cut, shape, score, assemble and join materials/components with some degree of accuracy to make a simple product;<br>• begin to select and use finishing techniques to improve the appearance of a product such as hemming, fabric paints and digital graphics. | Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how **key events and individuals** in design and technology have helped shape the world. |

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| | Knowledge | Children can:<br>• use their knowledge of a range of existing products to help generate their ideas;<br>• start to explain their choice of materials and components including function and aesthetics;<br>• explore different initial ideas before coming up with a final design;<br>• design innovative and appealing products that have a clear purpose and are aimed at a specific user<br>• identify features that will appeal to that customers;<br>• develop and follow a simple **design criteria**; | Children can:<br>• use a wider range of materials and components, including construction materials, textiles, mechanical and electrical components and ingredients, according to their functional properties and aesthetic qualities.<br>• select from and use a wider range of tools and equipment to cut, shape, join and finish accurately, explaining their choices | Children can:<br>• explore and evaluate existing products, explaining its purpose and whether it is designed well to meet the intended purpose.<br>• explore what materials/ingredients products are made from and suggest reasons for this.<br>• consider their design criteria as they make progress and alter their plans when needed.<br>• begin to consider the views of others and offer feedback<br>• evaluate their product against their original design criteria. |
| | Vocabulary | Key vocabulary: research, design criteria, innovative, functional, appealing products, fit for purpose, intended user, features, customer, aesthetic, annotated sketches, cross sectional drawings, prototypes | Key vocabulary: cut, shape, score, join, assemble, materials, components, functional properites, aesthetics, mark, measure, cm, mm, hemming, finishing techniques, improve, appearance | Key vocabulary: explore, criteria, evaluate, product, purpose, user, needs, design, methods, strengths, areas for development, view, preference, reasons, improve, designer, manufacturer |
| | Technical Knowledge | Materials and Construction<br>Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures. | Mechanisms | Textiles |
| | Designer/Crafts Person/Cook | **Sir Humphry Davy** – Davy Lamp<br>**Thomas Eddison** – bulb<br>**Arnold** – contempory riot shields<br>**Cavemen** - crafts people | **Matthew Reinhart** – pop up Christmas cards<br>**Ancient Eyptians** - pullies<br>**Elisha Otis** – pulley lifts | Greek Craft People<br>**Jimmy Choo** – contempary shoe designer |
| | Skills | Children can:<br>• know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques.<br>• use a range of techniques to shape mouldable materials (paper Mache and salt dough) | Children can:<br>• use mechanical systems in their products and explain why it was chosen | Children can:<br>• begin to use a template<br>• join textiles with simple sewing techniques (**running stitch, basting stitch, cross stitch**);<br>• begin to select and use finishing techniques to improve the appearance |

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| | | • use safe ways of cutting materials including a junior hacksaw | | |
| | Knowledge | Children can:<br>• apply their understanding of how to strengthen, stiffen and reinforce more complex structures (joining, folding, layering/corrugated, shape and own ideas)<br>• start to consider how materials have both functional properties and aesthetic qualities, and chose the most appropriate material for the project | Children can:<br>• understand and explain how mechanical systems such as **pulleys and pop ups** create movement. | Children can:<br>• chose the textile according to their functional properties and appearance<br>• begin to develop an understanding of materials and ways they can be attached to each other (glue, tying, sewing) to make a simple product |
| | Vocabulary | Key vocabulary: strengthen, stiffen, functional properties, aesthetic, material, reinforce, paper Mache, folding, corrugated, shape, measure, mark out, tools, equipment, function, construction, finishing, assemble, cutting, slots, suitable | Key vocabulary: pulley, rotation, spindle, motion, function, ratio, transmit, axle, annotated drawings, input, output, align, tabs, | Key vocabulary: fabric, textile, functional properties, template, attach, running stitch, basting stitch, blanket stitch, cross stitch, fastening, structure, finishing technique, strength, stitch, measure, protoype |
| | Technical Knowledge | Food<br>Children understand and apply the principles of a healthy and varied diet. They prepare and cook a variety of **predominantly savoury** dishes using a range of cooking techniques. They understand **seasonality**, and know where and how a variety of ingredients are grown, reared, caught and processed. | Electronics | |
| | Designer/Crafts Person/Cook | **Gino D'Campo**<br>**Massimo Bottura** | **Sir Humphry Davy** – Davy Lamp<br>**Thomas Eddison** - bulbs | |
| | Skills | Children can:<br>• start to independently follow a recipe;<br>• prepare and cook a variety of predominantly savoury dishes safely and hygienically;<br>• use a range of techniques such as whisking, crushing, grating, cutting, kneading and baking; | Children can:<br>• add a simple electrical circuit in their product, add a **switch, bulb**<br>• alter their product after checking | |

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| | | • learn to use a range of tools and equipment safely and appropriately, and learn to follow hygiene procedures;<br>• measure and weigh ingredients to the nearest gram and millilitre;<br>• with support, use a heat source to cook;<br>• present their product in an interesting way | | |
| | Knowledge | Children can:<br>• start to know when (seasonality), where and how food is grown (such as herbs, tomatoes and strawberries) in the UK, Europe and the wider world;<br>• explain that a healthy diet is made up of a variety and balance of different food and drink, | Children can:<br>• start to understand that electrical systems have an input, process and output, and can be used to create a functional product | |
| | Vocabulary | Key vocabulary: savoury, sweet, recipe, appearance, peeling, chopping, grating, mixing, spreading, kneading, whisking, baking, prepare, temperature, taste, texture, hygiene, safety, measure, gram, kilogram, oven, hob, cook, utensils, seasonality, recipe | Key vocabulary: circuit, fault, connection, battery, battery holder, bulb, wire, bulb holder, insulator, conductor, crocodile clip, control, program, system, input, output | |

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| End of Y6 | Skills | Children 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**. They generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and computer-aided design.<br><br>Children can:<br>• use annotated sketches, cross-sectional drawings or exploded diagrams (possibly computer-aided design) to develop and communicate their ideas; | Children select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. They 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.<br><br>Children can:<br>• with growing confidence, select from and use a wider range of tools and equipment to cut, shape, join and finish accurately, explaining their choices<br>• select from and use a wider range of materials and components, including construction materials, textiles, mechanical components and ingredients, according to their functional properties and aesthetic qualities.<br>• independently take accurate measurements and mark out<br>• cut, shape and score a range of materials with precision and accuracy.<br>• assemble, join and combine materials and components with accuracy.<br>• confidently select and use finishing techniques to improve the appearance of a product | Children investigate and analyse a range of existing products. They evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They understand how **key events and individuals** in design and technology have helped shape the world. |

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| | Knowledge | Children can:<br>• use their knowledge of a broad range of existing products to help generate their ideas<br>• use research to inform and develop a **detailed design criteria** for an innovative, functional and appealing product that is fit for purpose and aimed at a target market;<br>• design products that have a clear purpose and indicate the design features of their products that will appeal to the intended user;<br>• explain how particular parts of their products work and what tools they will need;<br>• consider the availability and **costings** of resources when planning out designs;<br>• apply their understanding of computers to program, monitor and control their products | | Children can:<br>• complete detailed analysis of other products on the market.<br>• critically evaluate the quality of design, manufacture and fitness for purpose of products as they design and make.<br>• confidently consider the views of others and offer feedback<br>• evaluate their ideas and products against the original design criteria, making changes as needed<br>• evaluate the key events and designs of individuals in design and technology that have helped shape the world |
| | Vocabulary | Key vocabulary: research, design criteria, innovative, functional, appealing products, fit for purpose, intended user, appeal, annotated sketches, cross sectional drawings, exploded diagrams, costings, enterprise, prototype | Key vocabulary: tools, equipment, cut, shape, join, assemble, finish, accurately, materials, components, construction materials, textiles, mechanical, ingredients, functional properities, aesthetic qualities, precision, finishing techniques, appearance | Key vocabulary: market, manufacture/r, innovate, sustainability, effective, designed, suitable, successful, improvement, intended, impact, products, functional, investigate, methods, analyse, existing, strengths, refine, views, developing, criteria, improve, evaluate, quality, inventor, designer |

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| | Technical Knowledge | Materials and Construction<br>Children apply their understanding of how to strengthen, stiffen and reinforce more complex structures. They apply their understanding of computing to program, monitor and control their products. | Mechanisms | Textiles |
| | Designer/Crafts Person/Cook | **Thomas Bradshaw -** the first UK carousel<br>**Charles Dare -** The Flying Horse<br>**Viking Crafts People** – Longboats<br>**Thomas Farnolls Pritchard** – Designed The Iron Bridge<br>**Abraham Darby** – Built The Iron Bridge | **Designer: Jacques de Vaucanson** is often regarded as the greatest mechanical toy crafter of all times | Anglo Saxon Purses – Crafts People<br>Comtemporary: **Fendi , Louis Vuitton, Dior** |
| | Skills | Children can:<br>• ensure that their product is strong and fit for the purpose (shape, bracing and own ideas)<br>• develop skills in nailing, drilling and sawing to create a product | Children can:<br>• use mechanical systems in their products and explain why it was chosen. | Children can:<br>• use their own template<br>• demonstrate how to measure, tape, pin, cut, shape and join fabric with precision to make a more complex product.<br>• join textiles using a greater variety of stitches, such as **backstitch, overcast/blanket stitch, hemming stitch,**<br>• refine the finish using techniques to improve the appearance of their product, such as a more precise scissor cut after roughly cutting a shape. |
| | Knowledge | Children can:<br>• ensure that materials chosen have both functional properties and aesthetic qualities;<br>• justify why they have chosen a specific material<br>• apply their understanding of computing to program, monitor and control a product. | Children can:<br>• explain how mechanical systems, such as **cams,** create movement | Children can:<br>• select a textile according to their functional properties and aesthetic qualities.<br>• think about how their product could be sold |

# St Chad's Curriculum 2022

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| | Vocabulary | Key vocabulary: functional, suitability, aesthetic, procedures, accuracy, cutting, shaping, joining, finishing, accuracy, assemble equipment, techniques, measure, mark out, gluing, bracing, sanding, appropriate, finishing, combine, components | Key vocabulary: mechanism, linkage, pivot, slot, bridge, process, output, linear, rotary, oscillating, reciprocating | Key vocabulary: function, aesthetics, template, measure, tape, pin, cut, shape, join, complex, backstitch, overcast/blanket stitch, hemming stitch, appearance, commercialism, seam, seam allowance, wadding, reinforce, template, pattern, names of textiles, fastenings, pins, needles, applique, hemming |
| | Technical Knowledge | Food<br>Children understand and apply the principles of a healthy and varied diet. They prepare and cook a variety of **predominantly savoury** dishes using a range of cooking techniques. They understand **seasonality**, and know where and how a variety of ingredients are grown, reared, caught and processed. | Electronics | |
| | Designer/Crafts Person/Cook | **Phillip Harburn**<br>– First male TV chef 1946<br>**Mary Berry** - Traditional cook<br>**Jamie Oliver** - School dinner influencer<br>**Nadiya Hussain** - Great British Bake Off<br>**Heston Blumenthal** - Michelin Star chef | **John Spinello** – designer of the buzzer game Operation | |
| | Skills | Children can:<br>• prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source;<br>• use a range of cooking techniques, such as griddling, grilling, frying and boiling;<br>• learn to use a range of tools and equipment safely, appropriately and accurately, and learn to follow hygiene procedures;<br>• adapt and refine recipes for appearance, taste, texture and aroma; | Children can:<br>• use different types of circuits in their product<br>• confidently use a number of components in a circuit including a **switch, bulb, buzzer and motor** | |

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| | | • measure accurately and calculate ratios of ingredients to scale up or down from a recipe;<br>• independently follow a recipe<br>• present their product in an attractive form | | |
| | Knowledge | Children can:<br>• explain and give examples of food that is grown, reared and caught in the UK, Europe and the wider world;<br>• understand about seasonality, how this may affect the food availability and plan recipes according to seasonality; | Children can:<br>• understand that electrical systems have an input, process and output<br>• explain how adding a circuit has improved their product | |
| | Vocabulary | Key vocabulary: reared, caught, seasonality, savoury, hygiene, heat, grilling, frying, boiling, refine, texture appearance, aroma, measure, ratio, recipe, temperature, nutrients, substitute, adapting, methods, prepare, cook, peeling, chopping, slicing, baking, melting, whisking, grating, blending, dietary, vegetarian, vegan, fishing | Key vocabulary: buzzer, motor, bulb, bulb holder, battery, battery holder, wire, insulator, conductor, crocodile clip, control, program, system, input, output, series circuit, parallel circuit | |