



## Design Technology Progression Map Eastfield Primary School

This document shows the Design Technology learning journey for pupils from EYFS to Year 6. Knowledge and skills and are colour coded to show which term they are covered: **blue** for Autumn term, **green** for Spring Term and **orange** for Summer Term. Ongoing skills and knowledge are written in black.

	<u>Design and Evaluate</u>	<u>Build</u>	<u>Sew</u>	<u>Cook</u>
F1	<b>Early Learning Goals:</b> <u><b>Expressive arts and Design.</b></u> Use their imagination as they consider what they can do with different materials. <u><b>Understanding the world:</b></u> Explore materials with different properties. <u><b>Physical:</b></u> Explore different materials and tools. Choose the right resources to carry out their own plan.	<b>Early Learning Goals:</b> <u><b>Expressive arts and Design.</b></u> Make simple models which express their ideas. Make imaginative and complex “small worlds” with blocks and construction kits. <u><b>Physical:</b></u> Develop manipulation and control. <u><b>Understanding the world:</b></u> Explore how things work.	<b>Early Learning Goals:</b> <u><b>Physical:</b></u> Use one handed tools and equipment.	<b>Early Learning Goals:</b> <u><b>PSED</b></u> Make healthy choices about food and drink.
	<b>An Early Years designer will:</b> <ul style="list-style-type: none"> <li>Explore and use materials in imaginative ways.</li> <li>Problem solve as their designs evolve.</li> </ul>	<b>An Early Years designer will:</b> <ul style="list-style-type: none"> <li>Build large scale models outside.</li> <li>Build small word villages.</li> <li>Build with construction toys.</li> <li>Play and investigate toys which use mechanisms – digger, cement mixer.</li> <li>Use toys which move by pushing or pulling.</li> </ul>	<b>An Early Years designer will:</b> <ul style="list-style-type: none"> <li>Use fine motor skills to practise threading activities on card threading shapes.</li> <li>Thread beads onto pipe cleaners, progressing to string.</li> </ul>	<b>An Early Years designer will:</b> <ul style="list-style-type: none"> <li>Ice a biscuit to decorate.</li> <li>Combine ingredients by stirring.</li> </ul>
	<b>Key vocabulary</b> Choose, biggest, strongest, better, improve	<b>Key vocabulary</b> build, balance, tall, strong, wobbly. Push, pull, lift, turn, higher, lower	<b>Key vocabulary</b> Thread, pipe cleaners, string, beads.	<b>Key vocabulary</b> Mix, decorate, icing, spoon, bowl.
F2	<b>Early Learning Goals:</b> <u><b>PSED</b></u> 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.  <u><b>Expressive arts and design:</b></u> Explore different materials freely in order to develop their ideas about how to use them and what to make. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Share their creations, explaining the process they have used.	<b>Early Learning Goals:</b> <u><b>Physical development. Fine motor skills.</b></u> Use a range of small tools, including scissors, paintbrushes and cutlery. <u><b>Expressive arts and Design.</b></u> Develop their own ideas and then decide which materials to use to express them. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	<b>Early Learning Goals:</b> <u><b>Physical development.</b></u> Develop their small motor skills so that they can use a range of tools competently, safely and confidently. <u><b>Expressive arts and Design.</b></u> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	<b>Early Learning Goals:</b> <u><b>Physical development. Fine motor skills.</b></u> Use a range of small tools, including scissors, paintbrushes and cutlery.
	<b>An Early Years designer will:</b> <ul style="list-style-type: none"> <li><b>Draw pictures of what they intend to make.</b></li> <li>Make models for a variety of purposes.</li> <li>Explain how they made their creations.</li> </ul>	<b>An Early Years designer will:</b> <ul style="list-style-type: none"> <li>Join materials using glue and tape.</li> <li>Understand why materials are joined.</li> <li>Explore a range of ways to attach materials to build a 3d piece.</li> <li><b>Use split pins to make a mechanism that allows movement.</b></li> </ul>	<b>An Early Years designer will:</b> <ul style="list-style-type: none"> <li><b>Threading a plastic needle.</b></li> <li><b>Sewing using Hessian or Binca.</b></li> <li><b>Decorate fabrics with buttons, beads, sequins etc.</b></li> </ul>	<b>An Early Years designer will:</b> <ul style="list-style-type: none"> <li><b>Bridge knife technique.</b></li> <li><b>Using a lemon squeezer.</b></li> <li><b>Sieving flour Shaping: E.g: bread.</b></li> <li><b>Glazing.</b></li> <li><b>Know about knife safety.</b></li> </ul>
	<b>Key vocabulary</b> Build, Construct, plan, improve, explain, decide	<b>Key vocabulary</b> Join, glue, stick, tape, attach, strong Spin, turn, move, wheels, split pin, mechanism	<b>Key vocabulary</b> Thread, needle, cotton, binca, fabric	<b>Key vocabulary</b> Knife, serrated, bridge, claw, squeeze, sieve, shape, roll, glaze



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Year 1	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Design purposeful, functional, appealing products for themselves and other users based on design criteria.</li> <li>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</li> <li>Evaluate their ideas and products against design criteria.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Build structures, exploring how they can be made stronger, stiffer and more stable</li> <li>Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> </ul>	<b>NC objectives</b> <ul style="list-style-type: none"> <li>Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Use the basic principles of a healthy and varied diet to prepare dishes</li> <li>Understand where food comes from.</li> </ul>
	<b>A Year 1 designer will:</b> <ul style="list-style-type: none"> <li>List the materials they intend to use on their design.</li> <li>Say what they like about their product and what they could improve.</li> </ul>	<b>A Year 1 designer will:</b> <ul style="list-style-type: none"> <li><b>Build a structure to represent the body of a vehicle.</b></li> <li><b>Experiment with ways to make their structure stronger.</b></li> <li><b>Attach an axle to a piece of wood so that it still turns.</b></li> </ul>	<b>A Year 1 designer will:</b> <ul style="list-style-type: none"> <li>Draw around a template onto a piece of fabric.</li> <li>Cut out shapes which have been created on fabric.</li> <li>Sewing – tacking stitch.</li> <li>Understand the need to draw around a template.</li> </ul>	<b>A Year 1 designer will:</b> <ul style="list-style-type: none"> <li>Understand about food hygiene.</li> <li>Claw knife technique with soft foods.</li> <li>Snipping herbs in a jug using scissors.</li> <li>Mashing.</li> <li>Grating foods</li> </ul>
	<b>Key vocabulary</b> Design, make, evaluate, ideas, purpose.	<b>Key vocabulary</b> Strong, structure, join, construct Vehicle, wheel, axle, chassis, free moving, mechanism, dowel	<b>Key vocabulary</b> Template, material, shape, fabric, cotton, needle, textile, tacking stitch.	<b>Key vocabulary</b> Healthy, carbohydrates, fats, protein, sugar, ingredients, techniques, claw, crush, mash, equipment
		<b>Project:</b> To create a vehicle with moving wheels to win a travel furthest competition in my class.	<b>Project:</b> To make a hand or finger puppet to perform a narrative to my class.	<b>Project:</b> To create a range of sticks and dips for a family dining event.
Year 2	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Design purposeful, functional, appealing products for themselves and other users based on design criteria.</li> <li>Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.</li> <li>Explore and evaluate a range of existing products.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing.</li> <li>Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics.</li> <li>Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Use the basic principles of a healthy and varied diet to prepare dishes</li> <li>Understand where food comes from.</li> </ul>
	<b>A Year 2 designer will:</b> <ul style="list-style-type: none"> <li>Draw on their evaluation of existing products to inform their own designs.</li> <li>Label each part of their design indicating what materials they will use.</li> <li>Make improvements to their creations as they develop.</li> </ul>	<b>A Year 2 designer will:</b> <ul style="list-style-type: none"> <li>Make a lever.</li> <li>Understand why a lever is used.</li> </ul> (Use new Knex kits for focused practical tasks.)	<b>A Year 2 designer will:</b> <ul style="list-style-type: none"> <li>Mark and cut out 2 identical pieces of fabric using a template.</li> <li>Colour fabrics using fabric paints/pens.</li> <li>Sewing – running stitch.</li> <li>Understand why a template is used.</li> </ul>	<b>A Year 2 designer will:</b> <ul style="list-style-type: none"> <li>Rubbing fat into flour.</li> <li>Kneading</li> <li>Shaping</li> <li>Cracking an egg.</li> <li>Glazing.</li> <li>Spreading with a table knife.</li> </ul>
	<b>Key vocabulary:</b> User, product, function, label, improve.	<b>Key vocabulary</b> Mechanism, lever, pull, push, forwards, backwards, curve, slot, load, pivot, effort	<b>Key vocabulary</b> Template, mark out, identical, running stitch, join.	<b>Key vocabulary</b> Bread roll, yeast, rub, breadcrumbs, knead, proof, rise, shape, crack, beat, glaze, spread, bakery,
		<b>Project:</b> To design and make a moving seaside picture cover for a memory book to record my experience in Sherringham.	<b>Project:</b> Design and make a space themed key ring to help me to identify my belongings.	<b>Project:</b> Create a bread roll to share with my class at a class picnic.



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Year 3	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Investigate and analyse a range of existing products.</li> <li>Generate, develop, model and communicate their ideas through discussion and detailed labelled drawings.</li> <li>Evaluate their ideas and products against their own design criteria.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Select from and use a wider range of tools and equipment to perform practical tasks accurately.</li> <li>Select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities.</li> <li>apply their understanding of how to strengthen, stiffen and reinforce more complex structures.</li> </ul> <b>NC objectives:</b> <ul style="list-style-type: none"> <li>Understand how key events and individuals in design and technology have helped shape the world.</li> <li>understand and use mechanical systems in their products.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.</li> <li>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.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Understand and apply the principles of a healthy and varied diet.</li> <li>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</li> <li>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> </ul>
	<b>A Year 3 designer will:</b> <ul style="list-style-type: none"> <li>Investigate an existing product to help generate ideas.</li> <li>Create a detailed plan.</li> <li>Evaluate against set criteria.</li> </ul>	<b>A Year 3 designer will:</b> <ul style="list-style-type: none"> <li>Create a corner joint using cardboard corners to strengthen</li> <li>Understand which corner joint to use.</li> <li>Add tension to a lever.</li> </ul>	<b>A Year 3 designer will:</b> <ul style="list-style-type: none"> <li>Use scissors precisely when cutting.</li> <li>Pin 2 pieces of fabric together ready for sewing.</li> <li>Sewing – overstretch.</li> <li>Understand why you pin fabric together before sewing.</li> </ul>	<b>A Year 3 designer will:</b> <ul style="list-style-type: none"> <li>Use the bridge technique on harder foods.</li> <li>Mix ingredients together.</li> <li>Divide a mixture.</li> </ul>
	<b>Key vocabulary</b> Investigate, plan, evaluate, criteria, functional.	<b>Key vocabulary</b> Mark out, join, corner joint, strengthen, lever, tension, Mangonal, frame, reinforce, catapult,	<b>Key vocabulary</b> Pattern pieces, pin, overstretch, fastening,	<b>Key vocabulary</b> Granola bar, Eat Well plate, healthy, balanced, diet, carbohydrates, protein, dairy, unsaturated fats, bridge knife technique, product names, food names
		<b>Project: To design and make a Roman catapult to take part in a class competition to see which fires the furthest.</b>	<b>Project: To design and make a money pouch to hold coins.</b>	<b>Project To design, make and pitch a healthy granola bar to a member of SLT.</b>
Year 4	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.</li> <li>Generate, develop, model and communicate their ideas through discussion and annotated sketches.</li> <li>Evaluate their ideas and products against their own design criteria.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Select from and use a wider range of tools and equipment to perform practical tasks accurately.</li> <li>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.</li> </ul> <b>NC objectives:</b> <ul style="list-style-type: none"> <li>Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties.</li> <li>understand and use electrical systems in their products.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Select from and use a wider range of tools and equipment to perform practical tasks accurately.</li> <li>Select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities.</li> <li>Understand how key events and individuals in design and technology have helped shape the world.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Understand and apply the principles of a healthy and varied diet.</li> <li>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</li> <li>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> </ul>
	<b>A Year 4 designer will:</b> <ul style="list-style-type: none"> <li>Design a product for a particular purpose.</li> <li>Create an annotated sketch.</li> <li>Decide how well their product meets the intended purpose.</li> </ul>	<b>A Year 4 designer will:</b> <ul style="list-style-type: none"> <li>Create frame structures.</li> <li>Investigate making structures more stable using a wide base.</li> <li>Use a glue gun with close supervision.</li> <li>Investigate motors and switches.</li> </ul>	<b>A Year 4 designer will:</b> <ul style="list-style-type: none"> <li>Sewing – cross stitch</li> <li>Understand when to use cross stitch.</li> </ul>	<b>A Year 4 designer will:</b> <ul style="list-style-type: none"> <li>Crushing garlic.</li> <li>Peel harder vegetables.</li> <li>Use knife techniques already learned effectively.</li> </ul>



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	<b>Key vocabulary</b> Design brief, design criteria, purpose, annotated, sketch.	<b>Key vocabulary</b> Structure, frame, Propel, propulsion, wind, mechanism, motor, electrical circuit.	<b>Key vocabulary</b> Rune, tapestry, cross-stitch,	<b>Key vocabulary</b> Stew, seasonality, peel, chop, crush, soften, heat, stock.
		<b>Project</b> To create a desk fan for the KS1 building to keep pupils cool in summer.	<b>Project</b> To create a class rune tapestry to showcase my learning .	<b>Project:</b> To design and make a Viking soup recipe to develop my understanding of life as a Viking.
Year 5	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Use research and develop design criteria to inform the design of innovative, functional, appealing products aimed at particular individuals or groups.</li> <li>Generate, develop, model and communicate their ideas through discussion, and cross-sectional diagrams.</li> <li>Consider the views of others to improve their work.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Select from and use a wider range of tools and equipment to perform practical tasks</li> <li>Select from and use a wider range of materials and components, including construction materials according to their functional properties and aesthetic qualities.</li> <li>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.</li> </ul> <b>NC objectives:</b> <ul style="list-style-type: none"> <li>understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.</li> <li>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.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Understand and apply the principles of a healthy and varied diet.</li> <li>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</li> <li>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> </ul>
	<b>A Year 5 designer will:</b> <ul style="list-style-type: none"> <li>Identify target audience for a product.</li> <li>Create a cross sectional diagram.</li> <li>Respond to feedback to improve their product.</li> <li>To draw a design which includes dimensions.</li> </ul>	<b>A Year 5 designer will:</b> <ul style="list-style-type: none"> <li>Strengthen a structure using diagonal struts.</li> <li>Understand how diagonal struts help.</li> <li>Using cams.</li> </ul>	<b>A Year 5 designer will:</b> <ul style="list-style-type: none"> <li>Sewing – back stitch.</li> <li>Understand when to use back stitch.</li> <li>Mark out and cut fabric accurately to given dimensions</li> </ul>	<b>A Year 5 designer will:</b> <ul style="list-style-type: none"> <li>Combine the bridge and claw techniques.</li> <li>Grate more finely e.g: parmesan</li> <li>Handle and roll short crust pastry.</li> </ul>
	<b>Key vocabulary</b> Research, innovative, cross-sectional	<b>Key vocabulary</b> Strengthen, struts, structure, Motor, switch, cam, slider, follower, handle, cross sectional	<b>Key vocabulary</b> Back stitch, mark out, fastenings, dimensions, embroider	<b>Key vocabulary</b> Combine, handle, roll, grate
		<b>Project:</b> To make a Cams toy for a play session with FS children.	<b>Project:</b> To design a pencil case to hold 5 pencils, 2 pens, a rubber, a pencil sharpener and a ruler.	<b>Project:</b> To design and make a Mezzo tart to share with my class.
Year 6	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Use research and develop design criteria to inform the design of innovative, functional, appealing products aimed at particular individuals or groups.</li> <li>Generate, develop, model and communicate their ideas through discussion, prototypes and computer-aided design (where appropriate.)</li> <li>Consider the views of others to improve their work.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Understand how key events and individuals in design and technology have helped shape the world.</li> <li>understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> <li>apply their understanding of computing to program, monitor and control their products.</li> <li>Generate, develop, model and communicate their ideas using exploded diagrams</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Generate, develop, model and communicate their ideas through discussion, annotated sketches, pattern pieces and computer aided design.</li> </ul>	<b>NC objectives:</b> <ul style="list-style-type: none"> <li>Understand and apply the principles of a healthy and varied diet.</li> <li>Prepare and cook a variety of dishes using a range of cooking techniques.</li> <li>Generate, develop, model and communicate their ideas through discussion, annotated sketches and prototypes.</li> </ul>



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	<b>A Year 6 designer will:</b> <ul style="list-style-type: none"> <li>Design a product that will appeal to a given target group.</li> <li>Create a prototype.</li> <li>Act on feedback of the target group to improve their product.</li> </ul>	<b>A Year 6 designer will:</b> <ul style="list-style-type: none"> <li>Make a product using a pulley.</li> <li>Make a product including gears. (Use knex kits for focused practical tasks.)</li> <li>Understand when to use pulleys and when to use gears.</li> <li>Know how gears and pulleys have evolved and improved.</li> </ul>	<b>A Year 6 designer will:</b> <ul style="list-style-type: none"> <li>Understand a seam allowance.</li> <li>Use computer aided design to create a logo</li> <li>Use recycled materials.</li> </ul>	<b>A Year 6 designer will:</b> <ul style="list-style-type: none"> <li>Lining a tin</li> <li>Beating eggs.</li> <li>Use scales to weigh ingredients</li> <li>Whisk – egg whites or cream.</li> <li>Folding flour</li> <li>Know how to be safe around an oven.</li> </ul>
	<b>Key vocabulary</b> Prototype, computer aided design, target audience.	<b>Key vocabulary</b> Pulley, gears, driver, follower, mesh	<b>Key vocabulary</b> Seam allowance, Computer aided design, image board, prototype, logo, transfer,	<b>Key vocabulary</b> Line, beat, weigh, whisk, fold, oven, bake
		<b>Project: To design and make a marble run to use as part of a games afternoon.</b>	<b>Project: To use recycled materials to make a bag for my family.</b>	<b>Project: To make a Swiss roll to share with my family.</b>





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### Subject content

#### Key stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

When designing and making, pupils should be taught to:

##### Design

- 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

##### Make

- 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

##### Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

##### Technical knowledge

- 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.

#### Key stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

When designing and making, pupils should be taught to:

##### Design

- 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

##### Make

- 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

##### Evaluate

- 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

##### Technical knowledge

- 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.