

## DT curriculum overview for UKS2

	<b>Autumn</b>	<b>Spring</b>	<b>Summer</b>
Year 5	<b>DT: Automata</b>	<b>DT: Felt phone cases</b>	<b>DT: Global food</b>
<b>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, aimed at particular individuals or groups in the context of researching images that will be used in their mechanical models.</li> <li>Understand and use mechanical systems in their products (for example cams) in the context of understanding how cams can be used to make a model move; how changing the shape of the cam changes the movement of the follower; make a model of a war toy that moves.</li> <li>Select from and use a wider range materials and components, including construction materials according to their functional properties and aesthetic qualities in the context of selecting materials to make a simple cam mechanism.</li> <li>Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at individuals or groups in the context of developing design criteria for the Automata war toys.</li> <li>Select from and use a wider range of tools and equipment to perform practical tasks (for example cutting, shaping, joining and finishing), accurately in the context of using tools and equipment to perform the job of cutting, joining and finishing wood to make a frame.</li> <li>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work in the context of evaluating the product design.</li> </ul>	<ul style="list-style-type: none"> <li>To 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 in the context of creating a design criteria for a mobile phone case.</li> <li>To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams in the context of designing a felt phone case; making a paper template for a mobile phone case; practising different stitches to inform the final design; creating a step by step plan to communicate the making process.</li> <li>To select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities in the context of selecting decorative techniques and fastenings for felt phone cases.</li> <li>To evaluate their ideas and products against their own design criteria in the context of evaluating a felt phone case against a design criteria created.</li> </ul>	<ul style="list-style-type: none"> <li>Understand seasonality, and know where and how a variety of ingredients are grown in the context of looking at where a variety of ingredients come from.</li> <li>Understand and apply the principles of a healthy and varied diet in the context of understanding how diets are varied around the world but still consist of the same food groups, the nutritional benefits of eating rice.</li> <li>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of cooking rice, preparing and cooking Mexican food, in the context of cooking Chinese food, in the context of cooking pretzels.</li> </ul>
<b>Outcome</b>	All products created should follow specific criteria- design, make, evaluate <b>To design and make a moveable war time toy with a mechanism/s</b>	All products created should follow specific criteria- design, make, evaluate <b>To design and make a phone case</b>	All products created should follow specific criteria- design, make, evaluate <b>To make a range of global foods</b>
<b>Resources</b>	<p>Resources:</p> <p>Access to computers Non-fiction books about war toys Sticky notes Thick and thin card Corrugated card Split pins Scissors Plasticine Double sided sticky tape Cardboard boxes roughly 15x15cm (wash tablet boxes are ideal) Dowel, square section wood corrugated plastic, corrugated card, ready-made corner joints or strong card, PVA glue, glue gun, pin hammer, pins, vices, bench hooks, junior hacksaws Dowel, corrugated plastic, corrugated card, foam sheets, PVA glue, cotton reels, wooden cams, sticky tack glue gun, vices, bench hooks, junior hacksaws, plastic tubing</p>	<p>Resources:</p> <p>Felt Examples of mobile phone cases 1 cm squared paper Scissors, rulers and sharp pencils - per Child Fabric sheers, needles, threads – as required Pre-cut rectangles of scrap fabric Felt, scissors, pins, chalk Examples of fastenings: Hook and eye, press studs, buttons, ribbon. Velcro, press studs, buttons, ribbon felt, needles, different threads, scissors, fabric glue. A selection of different fabrics and materials for decorating the phone cases</p>	<p>Resources:</p> <p>Week 1: Ingredients (e.g. tray, knife, lemongrass, root ginger, pak choi, lime, mango, figs) Week 2: Large sheets of A2 sized paper Week 3: Equipment (e.g. saucepans, hob, measuring jug, sieves, scales, bowls, spoons) Ingredients from Cooking Rice Recipe Card Week 4: Equipment (e.g. trays, fork, safe knife, chopping boards, kitchen scissors, bowls, spoons, grater, fish slice, frying pan) Ingredients from Salsa Recipe Card, Guacamole Recipe Card, Quesadilla Recipe Card Week 5: Spring Roll Ingredients and Equipment see Spring Roll Recipe Card</p>

Year 6	DT: Marbulous Structures	DT: Super seasonal cooking	DT: Programming adventures
Objectives	<ul style="list-style-type: none"> <li>To investigate and analyse a range of existing products in the context of looking at existing free standing structures; investigating commercially bought marble runs.</li> <li>To apply their understanding of how to strengthen, stiffen and reinforce more complex structures in the context of strengthening, reinforcing and stabilising a cardboard tube.</li> <li>To select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately in the context of joining cardboard tubes accurately together; developing practical skills to help make bends in marble runs.</li> <li>To select from and use a wider range of materials and components according to their functional properties and aesthetic qualities in the context of selecting and using materials and components to make a marble run</li> <li>To evaluate their ideas against their own design criteria and consider the views of others to improve their work in the context of evaluating their marble run against the design criteria</li> </ul>	<ul style="list-style-type: none"> <li>Understand seasonality in the context of when fruit and vegetables are in season in Britain; in the context of where food is reared, caught and processed in the United Kingdom; tasting food that is in season.</li> <li>Understand and apply the principles of a healthy and varied diet in the context of the importance of protein in the diet</li> <li>Select from a wider range of ingredients, according to their functional properties and aesthetic qualities in the context of selecting ingredients for a seasonal meal.</li> <li>Consider the views of others to improve their work in the context of improving their design for a seasonal meal.</li> <li>Generate, develop, model and communicate their ideas through discussion and annotated sketches in the context of designing a healthy seasonal meal.</li> <li>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of preparing and cooking a healthy seasonal meal.</li> <li>Evaluate their products against their own design criteria in the context of evaluating their seasonal meal.</li> </ul>	<ul style="list-style-type: none"> <li>Apply their understanding of computing to program, monitor and control their products by understanding what floor robots are and how they are programmed and controlled, by programming and monitoring floor robots on finalised adventure map.</li> <li>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams prototypes, pattern pieces and computer-aided by designing an adventure map.</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 by exploring how different materials affect the movement and control of floor robots; by planning an adventure map.</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 by creating an adventure map using materials selected for their properties.</li> </ul>
Outcome	<p>All products created should follow specific criteria- design, make, evaluate</p> <p><b>To design and make a free standing structure</b></p>	<p>All products created should follow specific criteria- design, make, evaluate</p> <p><b>To design and make a healthy seasonal meal</b></p>	<p>All products created should follow specific criteria- design, make, evaluate</p> <p><b>To design and make an adventure map</b></p>
Resources	<p>Resources:</p> <p>A large amount of cardboard tubes</p> <p>A selection of free standing items</p> <p>Construction kits</p> <p>A range of joining materials, such as PVA glue, masking tape, adhesive tape, double-sided tape Scissors Tape measure</p> <p>Cardboard tubes, marbles, card and paper</p> <p>Scissors, craft knives, cutting boards Stopwatches</p> <p>Marble run sets, ideally 3. (If you only have one set, distribute the parts evenly between three groups. This set is large and could easily be split three ways.</p> <p>Stopwatch per group</p> <p>Camera per group</p>	<p>Resources:</p> <p>Week 1: Camera.</p> <p>Selection of fruit and vegetables from different seasons</p> <p>Week 3: Asparagus, kale, spinach, radishes, rocket, Jersey Royal new potatoes and spring onions.</p> <p>Week 4: Salmon, prawns and lentils.</p>	<p>Resources:</p> <p>Bee-Bots (or floor robots with similar functions)</p> <p>A range of different materials (each piece of materials should be at least 50cm x 50cm)</p> <p>15cm x 15cm laminated A4 coloured squares (the number and colour will depend on what was requested by the groups in</p> <p>15cm x 15cm A4 card squares</p> <p>15cm x 15cm A4 card squares</p> <p>Range of materials</p> <p>Staplers, Staples, Glue Stick, PVA glue, Glue Holders, Glue Spreaders, Sticky Tape, Scissors</p>

## 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 **Year 3 Aut, Sum Year 4 Spr 1, Spr 2 Year 5 Aut, Spr Year 6 Sum**
- ♣ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Year 3 Aut, Spr, Sum Year 4 Spr 1, Spr 2 Year 5 Aut, Spr Year 6 Aut, Spr, Sum**

### Make

- ♣ select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately **Year 3 Spr, Sum Year 4 Aut, Year 5 Aut Year 6 Aut**
- ♣ 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 **Year 3 Spr Year 4 Spr1, Spr 2 Year 5 Aut, Spr Year 6 Aut, Spr, Sum**

### Evaluate

- ♣ investigate and analyse a range of existing products **Year 3 Aut, Spr, Sum Year 4 Spr 2 Year 6 Aut**
- ♣ evaluate their ideas and products against their own design criteria and consider the views of others to improve their work **Year 3 Aut, Spr, Sum Year 4 Spr 1, Spr 2 Year 5 Aut, Spr Year 6 Aut, Spr**
- ♣ understand how key events and individuals in design and technology have helped shape the world **Year 3 Aut Year 4 Spr1, Spr 2**

### Technical knowledge

- ♣ apply their understanding of how to strengthen, stiffen and reinforce more complex structures **Year 4 Spr 2 Year 6 Aut**
- ♣ understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] **Year 3 Sum Year 5 Aut**
- ♣ understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] **Year 4 Spr 1**
- ♣ apply their understanding of computing to program, monitor and control their products. **Year 6 Sum**

### Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

- ♣ understand and apply the principles of a healthy and varied diet **Year 4 Aut Year 5 Sum Year 6 Spr**
- ♣ prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques **Year 3 Aut Year 4 Aut Year 5 Sum Year 6 Spr**
- ♣ understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. **Year 4 Aut Year 5 Sum Year 6 Spr**

## Target tracker progression statements

KS2	Year 3	Year 4	Year 5	Year 6
<b>Cooking and nutrition</b>	Talk about the different food groups and name food from each group	Understand what makes a healthy and balanced diet, and that different foods and drinks provide different substances the body needs to be healthy and active	Understand the main food groups and the different nutrients that are important for health	Confidently plan a series of healthy meals based on the principles of a healthy and varied diet
	Understand that food has to be grown, farmed or caught in Europe and the wider world	Understand seasonality and the advantages of eating seasonal and locally produced food	Understand how a variety of ingredients are grown, reared, caught and processed to make them safe and palatable / tasty to eat	Use information on food labels to inform choices
	Use a wider variety of ingredients and techniques to prepare and combine ingredients safely	Read and follow recipes which involve several processes, skills and techniques	Select appropriate ingredients and use a wide range of techniques to combine them	Research, plan and prepare and cook a savoury dish, applying his/her knowledge of ingredients and his/her technical skills
<b>Processes</b>	Use knowledge of existing products to design his/her own functional product	Use knowledge of existing products to design a functional and appealing product for a particular purpose and audience	Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product	Use research he/she has done into famous designers and inventors to inform the design of his/her own innovative products
	Create designs using annotated sketches, cross-sectional diagrams and simple computer programmes	Create designs using exploded diagrams	Create prototypes to show his/her ideas	Generate, develop, model and communicate his/her ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
	Safely measure, mark out, cut, assemble and join with some accuracy	Use techniques which require more accuracy to cut, shape, join and finish his/her work e.g. Cutting internal shapes, slots in frameworks	Make careful and precise measurements so that joints, holes and openings are in exactly the right place	Apply his/her knowledge of materials and techniques to refine and rework his/her product to improve its functional properties and aesthetic qualities
	Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them	Use his/her knowledge of techniques and the functional and aesthetic qualities of a wide range of materials to plan how to use them	Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques	Use technical knowledge accurate skills to problem solve during the making process
	Investigate and analyse existing products and those he/she has made, considering a wide range of factors	Consider how existing products and his/her own finished products might be improved and how well they meet the needs of the intended user	Make detailed evaluations about existing products and his/her own considering the views of others to improve his/her work	Use his/her knowledge of famous designs to further explain the effectiveness of existing products and products he/she have made
	Strengthen frames using diagonal struts	Apply techniques he/she has learnt to strengthen structures and explore his/her own ideas	Build more complex 3D structures and apply his/her knowledge of strengthening techniques to make them stronger or more stable	Use a wide range of methods to strengthen, stiffen and reinforce complex structures and can use them accurately and appropriately
	Understand how mechanical systems such as levers and linkages or pneumatic systems create movement	Understand and use electrical systems in products	Understand how to use more complex mechanical and electrical systems	Apply his/her understanding of computing to program, monitor and control his/her product

