

## **Design Technology**

### **How we teach Design Technology**

At Wroxall Primary School we believe that Design Technology prepares children to take part in the development of tomorrow's quickly changing world. The curriculum allows opportunities for children to use their creativity and imagination to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. Children develop technical understanding and making skills, learn about design methods and investigate their environment and the materials around them. This allows them to reflect on and evaluate present and past design and technology, its uses and its impacts. Design Technology helps all children to become discriminating and informed consumers and potential innovators.

### **Developing knowledge and understanding**

All pupils are encouraged to:

- Generate ideas through discussion and experimentation.
- Extend knowledge and understanding of a wide range of materials, including construction kits, textiles, food, wood, plastic, and reclaimed/junk materials.
- Work within groups and as individuals.
- Make use of drawings and models to communicate their ideas.
- Evaluate their work and identify strengths and weaknesses in a positive way.
- Experiment with simple components, mechanisms and structures.
- Learn about health and safety aspects when working with a variety of materials and tools.
- Consider risk to themselves and to others and build up a knowledge and understanding of the dangers inherent in certain products and tools.
- Experience Design Technology through off-site visits, where practicable, in order to see technology used in a real environment.

### **How we plan learning in Design Technology**

Design Technology is a foundation subject in the National Curriculum. Our school uses both the National Curriculum and units from **PlanBee** as benchmark towards curriculum planning in Design Technology in addition to assessed teachers planning. It is important to consider that the National Curriculum identifies Food Technology as being an essential element within Design Technology and that planning should incorporate researching, understanding and preparing food.

Across the school Individual teachers will decide each term whether to teach the identified learning objectives and outcomes for each unit as either a series of lessons over several weeks or an intensive block of lessons. Each teacher will ensure an appropriate balance and distribution of work across each term.

Each teacher will ensure that the children are designing and making a product for a specific purpose and audience whilst ensuring they are progressing their technical skills.

### **Children with SEND**

At Wroxall our aim is that a broad and balanced curriculum with support and challenge should be accessible to all children, including those with SEND. Children who are identified as having SEND or additional needs will have an individual support plan. The provision and targets identified within the plan may well have relevance to learning in Design and Technology. As such the class teacher will seek to differentiate learning within lessons to ensure its accessibility to all children. Support could include: finding alternative ways of recording understanding, reducing the need for writing if possible/appropriate; using visual cues/checklists to support learning; overtly teaching associated vocabulary.

### **How we assess learning in Design Technology**

Assessment of a child's Design Technology learning is completed both during and at the end of each Design Technology topic they undertake. Our assessment methods include the following:

- Looking at a child's recorded work i.e. model, photographs, written work.
- Individual discussion.
- Group discussions in both planning and reporting back sessions.
- Observing the children's skills in Design and Technology.
- Record the progress that children make by assessing the children's work against the learning objectives for their lessons.

At the end of a unit of work, teachers make a judgement against the Key Learning Skills.

Curriculum coverage and progression of skills in Design Technology

Skills and Knowledge - Progression Map

	DESIGN	MAKING	EVALUATE
<b>E Y F S</b>	<ul style="list-style-type: none"> <li>*Select appropriate resources</li> <li>*Use gestures, talking and arrangements of materials and components to show design</li> <li>* Use contexts set by the teacher and myself</li> <li>*Use language of designing and making (join, build, shape, longer, shorter, heavier etc.)</li> </ul>	<ul style="list-style-type: none"> <li>*Construct with a purpose, using a variety of resources</li> <li>*Use simple tools and techniques</li> <li>*Build / construct with a wide range of objects</li> <li>*Select tools &amp; techniques to shape, assemble and join</li> <li>*Replicate structures with materials / components</li> <li>*Discuss how to make an activity safe and hygienic</li> <li>*Record experiences by drawing, writing, voice recording</li> <li>*Understand different media can be combined for a purpose</li> </ul>	<ul style="list-style-type: none"> <li>*Adapt work if necessary</li> <li>*Dismantle, examine, talk about existing objects/structures</li> <li>*Consider and manage some risks</li> <li>*Practise some appropriate safety measures independently</li> <li>*Talk about how things work</li> <li>*Look at similarities and differences between existing objects / materials / tools</li> <li>*Show an interest in technological toys</li> <li>*Describe textures</li> </ul>
<b>Y e a r 1</b>	<ul style="list-style-type: none"> <li>* have own ideas</li> <li>* explain what I want to do</li> <li>*explain what my product is for, and how it will work</li> <li>* use pictures and words to plan, begin to use models</li> <li>* design a product for myself following design criteria</li> <li>*research similar existing products</li> </ul>	<ul style="list-style-type: none"> <li>*explain what I'm making and why</li> <li>*consider what I need to do next</li> <li>*select tools/equipment to cut, shape, join, finish and explain choices</li> <li>*measure, mark out, cut and shape, with support</li> <li>*choose suitable materials and explain choices</li> <li>*try to use finishing techniques to make product look good</li> <li>*work in a safe and hygienic manner</li> </ul>	<ul style="list-style-type: none"> <li>*talk about my work, linking it to what I was asked to do</li> <li>* talk about existing products considering: use, materials, how they work, audience, where they might be used</li> <li>*talk about existing products, and say what is and isn't good</li> <li>* talk about things that other people have made</li> <li>*begin to talk about what could make product better</li> </ul>
<b>Y e a r 2</b>	<ul style="list-style-type: none"> <li>* have own ideas and plan what to do next</li> <li>* explain what I want to do and describe how I may do it</li> <li>* explain purpose of product, how it will work and how it will be suitable for the user</li> <li>* describe design using pictures, words, models, diagrams, begin to use ICT</li> <li>* design products for myself and others following design criteria</li> <li>* choose best tools and materials, and explain choices</li> <li>* use knowledge of existing products to produce ideas</li> </ul>	<ul style="list-style-type: none"> <li>*explain what I am making and why it fits the purpose</li> <li>*make suggestions as to what I need to do next.</li> <li>*join materials/components together in different ways</li> <li>*measure, mark out, cut and shape materials and components, with support.</li> <li>*describe which tools I'm using and why</li> <li>*choose suitable materials and explain choices depending on characteristics.</li> <li>*use finishing techniques to make product look good</li> <li>*work safely and hygienically</li> </ul>	<ul style="list-style-type: none"> <li>* describe what went well, thinking about design criteria</li> <li>* talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion</li> <li>*evaluate how good existing products are</li> <li>*talk about what I would do differently if I were to do it again and why</li> </ul>

	<b>DESIGN AND DEVELOP</b>	<b>MAKING</b>	<b>PRODUCT AND EVALUATION</b>
<b>Year 3</b>	<p>*begin to research others' needs * show design meets a range of requirements * describe purpose of product * follow a given design criteria * have at least one idea about how to create product * create a plan which shows order, equipment and tools</p> <p>*describe design using an accurately labelled sketch and words * make design decisions *explain how product will work * make a prototype * begin to use computers to show design</p>	<p>*select suitable tools/equipment, explain choices; begin to use them accurately * select appropriate materials, fit for purpose. * work through plan in order *consider how good product will be * begin to measure, mark out, cut and shape materials/components with some accuracy * begin to assemble, join and combine materials and components with some accuracy * begin to apply a range of finishing techniques with some accuracy</p>	<p>* look at design criteria while designing and making *use design criteria to evaluate finished product * say what I would change to make design better *begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose * begin to understand by whom, when and where products were designed * learn about some inventors/designers/ engineers/chefs/ manufacturers of groundbreaking products</p>
<b>Year 4</b>	<p>* use research for design ideas * show design meets a range of requirements and is fit for purpose *begin to create own design criteria *have at least one idea about how to create product and suggest improvements for design. * produce a plan and explain it to others *say how realistic plan is. *include an annotated sketch *make and explain design decisions considering availability of resources *explain how product will work * make a prototype *begin to use computers to show design.</p>	<p>* select suitable tools and equipment, explain choices in relation to required techniques and use accurately *select appropriate materials, fit for purpose; explain choices * work through plan in order. * realise if product is going to be good quality * measure, mark out, cut and shape materials/components with some accuracy *assemble, join and combine materials and components with some accuracy *apply a range of finishing techniques with some accuracy</p>	<p>*refer to design criteria while designing and making *use criteria to evaluate product * begin to explain how I could improve original design *evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * discuss by whom, when and where products were designed * research whether products can be recycled or reused * know about some inventors/designers/ engineers/chefs/manufacturers of ground-breaking products</p>

	<b>DESIGN AND DEVELOP</b>	<b>MAKING</b>	<b>PRODUCT AND EVALUATION</b>
Year 5	<p>*use internet and questionnaires for research and design ideas *take a user's view into account when designing * begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose *create own design criteria * have a range of ideas *produce a logical, realistic plan and explain it to others. *use cross-sectional planning and annotated sketches * make design decisions considering time and resources. *clearly explain how parts of product will work. *model and refine design ideas by making prototypes and using pattern pieces. *use computer-aided designs</p>	<p>use selected tools/equipment with good level of precision * produce suitable lists of tools, equipment/materials needed *select appropriate materials, fit for purpose; explain choices, considering functionality * create and follow detailed stepby-step plan * explain how product will appeal to an audience * mainly accurately measure, mark out, cut and shape materials/components *mainly accurately assemble, join and combine materials/components * mainly accurately apply a range of finishing techniques * use techniques that involve a small number of steps * begin to be resourceful with practical problems</p>	<p>*evaluate quality of design while designing and making *evaluate ideas and finished product against specification, considering purpose and appearance. *test and evaluate final product * evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * begin to evaluate how much products cost to make and how innovative they are *research how sustainable materials are *talk about some key inventors/designers/ engineers/ chefs/manufacturers of groundbreaking products</p>
Year 6	<p>* draw on market research to inform design * use research of user's individual needs, wants, requirements for design * identify features of design that will appeal to the intended user * create own design criteria and specification * come up with innovative design ideas *follow and refine a logical plan. *use annotated sketches, cross sectional planning and exploded diagrams * make design decisions, considering, resources and cost * clearly explain how parts of design will work, and how they are fit for purpose * independently model and refine design ideas by making prototypes and using pattern pieces * use computer-aided designs</p>	<p>* use selected tools and equipment precisely *produce suitable lists of tools, equipment, materials needed, considering constraints * select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics * create, follow, and adapt detailed step-by-step plans *explain how product will appeal to audience; make changes to improve quality * accurately measure, mark out, cut and shape materials/components * accurately assemble, join and combine materials/components * accurately apply a range of finishing techniques * use techniques that involve a number of steps * be resourceful with practical problems</p>	<p>*evaluate quality of design while designing and making; is it fit for purpose? * keep checking design is best it can be. *evaluate ideas and finished product against specification, stating if it's fit for purpose *test and evaluate final product; explain what would improve it and the effect different resources may have had *do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose *evaluate how much products cost to make and how innovative they are *research and discuss how sustainable materials are *consider the impact of products beyond their intended purpose *discuss some key inventors/designers/ engineers/ chefs/manufacturers of groundbreaking products</p>

The following examples of I can statements can be used to evidence progression of skills and knowledge across the school.

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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I can use appropriate vocabulary through talking about and explaining their designing and making activities.	I can use my own ideas to design something for myself and others.	I can design a product that looks good and works well, for myself and others.	I can research existing products on the market.	I can research and use ideas from other people when designing.	I can research and collect information and ideas on existing products on the market.	I can research existing and develop them so they are fit for purpose and aimed at a specific group. Follow and refine original plans.
I can use appropriate vocabulary when I talk about my designs and explain what I am doing.	I can describe how my own ideas work.	I can draw and talk about my designs.	I can annotate my sketches and explain my design, to say how it is suitable for a specific purpose.	I can annotate my designs to explain it.	I can explain how a product will appeal to a specific audience.	I can draw detailed designs, justifying planning in convincing way.
I can use joins and shape materials, to be more confident when constructing.	I can design a product, which moves.	I can explain why I have chosen specific features.	I can make prototypes to explain ideas to see if they work.	Preserve and adapt plans when original plans do not work.	I can design a product that requires mechanical and electrical systems.	I can show that culture and society is considered in plans and designs.
I can use joins and shape materials, to be more confident when constructing.	I can design a product, which moves.	I can explain why I have chosen specific features.	I can follow plans, choosing the right equipment and materials.	I can make prototypes to explain ideas and see if they work.	I can make a product that is attractive and strong.	I can say which tools to use for specific practical tasks.
I can use joins and shape materials, to be more confident when constructing.	I can use pictures and words to plan my designs	I can think of an idea and plan what to do next.	I can select the most appropriate tools and techniques for a given task.	I can say which tools to use for a particular tasks and show knowledge of handling the tools.	I can use a range of tools and equipment competently.	I can say how to use tools correctly and safely.
I am confident and enthusiastic about exploring things around me.	I can use own ideas to make something.	I can choose tools and materials and explain why I have chosen them.	I can make a product which uses mechanical components.	I can say which material is likely to give the best outcome.	I can make a prototype before making my final version.	I can say which tool is used for.
I am confident and enthusiastic about exploring things around me.	I can make a	I can work accurately to measure, make cuts and make holes.	I can work accurately to measure, make cuts and make holes.	I can measure accurately.	I can preserve through different stages of the making process to	I can explain why a specific tool is best for a specific
I am confident and enthusiastic about exploring things around me.	I can make a	I can work accurately to measure, make cuts and make holes.	I can work accurately to measure, make cuts and make holes.	I can show resilience in	I can preserve through different stages of the making process to	I can explain why a specific tool is best for a specific

Within each academic year, children will study a range of Design Technology topics.

In Reception, Design Technology is taught through a child-led approach that develops the children’s interests and allows them to freely explore their environment. Through this, the children will aim to meet the objectives set out in the Early Learning Goals.

In both Key Stage 1 and Key Stage 2, children are taught Design Technology as a freestanding subject, covering a specific topic each term. Our Design Technology topics focus on teaching skills that progress throughout the school and are aligned with the National Curriculum 2014. The tables below show the Design Technology topics currently delivered.

Year 1 and 2 Cycle B			
Design and make product: For someone: For particular purpose:	Block 1	Block 2	Block 3
	<b>Stiff / Flexible Sheet</b> Materials Moving pictures To give to a family member For Christmas	<b>Cooking and nutrition</b> Fruit salad To share with parents In an afternoon picnic	<b>Construction Freestanding Structures</b> Homes
<ul style="list-style-type: none"> <li>● <b>Designing:</b> Understanding contexts, users and purposes. Generating, developing, modelling and communicating ideas.</li> <li>● <b>Making:</b> Planning. Practical skills and techniques.</li> <li>● <b>Evaluating:</b> Own ideas and products. Existing products. Key events and individuals.</li> <li>● <b>Technical Knowledge:</b> Making products work.</li> <li>● <b>Cooking and nutrition:</b> Where food comes from. Food preparation, cooking and nutrition.</li> </ul>	<ul style="list-style-type: none"> <li>● To be able to create a sliding mechanism.</li> <li>● To be able to use levers to create a moving mechanism.</li> <li>● To investigate and create wheel mechanisms.</li> <li>● To be able to design a picture with a moving mechanism.</li> <li>● To be able to make a moving picture based on a design.</li> <li>● To be able to evaluate a moving picture.</li> </ul>	<ul style="list-style-type: none"> <li>● To find out the favourite fruits and vegetables in the class and present the data in a pictogram.</li> <li>● To examine, taste and describe a variety of fruits and vegetables.</li> <li>● To find out how to handle and prepare a variety of fruits and vegetables.</li> <li>● To be able to design a recipe to include fruit and/or vegetables.</li> <li>● To be able to make and evaluate a food product based on a design.</li> </ul>	<ul style="list-style-type: none"> <li>● To explore different types of houses and identify shapes and features.</li> <li>● To investigate how to join and combine shapes to make a house.</li> <li>● To investigate ways of creating the interior features of a house.</li> <li>● To be able to design a house.</li> <li>● To be able to follow a design and create a house.</li> <li>● To be able to evaluate a finished product.</li> </ul>
	Vocabulary - slider, lever, pivot, slot, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards	Vocabulary - fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients,	Vocabulary cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder

Year 1 and 2 Cycle A			
Design and make product: For someone: For particular purpose:	Block 1	Block 2	Block 3
	<b>Textiles - Templates and joining techniques</b>  Puppets (possibly linked to another curriculum area) for themselves to use in a puppet show	<b>Cooking and nutrition</b>  Perfect Pizzas To share with parents For a meal	<b>Mechanisms/Construction wheels and axels</b>  Fire Engines

<ul style="list-style-type: none"> <li>● <b>Designing:</b> Understanding contexts, users and purposes. Generating, developing, modelling and communicating ideas.</li> <li>● <b>Making:</b> Planning. Practical skills and techniques.</li> <li>● <b>Evaluating:</b> Own ideas and products. Existing products. Key events and individuals.</li> <li>● <b>Technical Knowledge:</b> Making products work.</li> <li>● <b>Cooking and nutrition:</b> Where food comes from. Food preparation, cooking and nutrition.</li> </ul>	<ul style="list-style-type: none"> <li>● To investigate a range of puppets and their features</li> <li>● To develop and practise sewing skills.</li> <li>● To be able to work with fabric to create a finger puppet.</li> <li>● To be able to design a glove puppet.</li> <li>● To be able to follow a design to make a puppet</li> <li>● To select materials according to function and aesthetic qualities</li> <li>● To be able to evaluate a finished product against design criteria, considering the views of others</li> </ul>	<ul style="list-style-type: none"> <li>● To find out what the favourite pizzas in the class are.</li> <li>● To examine, describe and categorise a variety of bread-based products.</li> <li>● To examine, describe and categorise a variety of pizza toppings.</li> <li>● To design a balanced healthy pizza, understanding and applying principles of a healthy balanced diet to the design</li> <li>● To be able to make and evaluate a food product based on a design and the views of others</li> </ul>	<ul style="list-style-type: none"> <li>● To explore modern fire engines.</li> <li>● To investigate wheels, axles and chassis.</li> <li>● To be able to investigate ways of creating the body of a fire engine.</li> <li>● To be able to design a fire engine.</li> <li>● To be able to make a fire engine based on a design.</li> <li>● To be able to evaluate a finished product.</li> </ul>
	<p>Vocabulary - investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function</p>	<p>Vocabulary - names of food, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients</p>	<p>Vocabulary - vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used</p>

Vocabulary Yr1/2

Year 3/4 and Year 4/5 Cycle C			
Design and make product: For someone: For particular purpose:	Block 1 <b>Stiff / Flexible Sheet Materials</b> Moving Pictures (storybooks) Family Member Christmas Card	Block 2 <b>Textiles</b> Money Containers For themselves To store money	Block 3 <b>Cooking and Nutrition</b> Sandwich Snacks For themselves For lunch
<ul style="list-style-type: none"> <li>● <b>Designing:</b> Understanding contexts, users and purposes. Generating, developing, modelling and communicating ideas.</li> <li>● <b>Making:</b> Planning. Practical skills and techniques.</li> <li>● <b>Evaluating:</b> Own ideas and products. Existing products. Key events and individuals.</li> <li>● <b>Technical Knowledge:</b> Making products work.</li> <li>● <b>Cooking and nutrition:</b> Where food comes from. Food preparation, cooking and nutrition.</li> </ul>	<ul style="list-style-type: none"> <li>● To investigate and evaluate products with lever and linkage systems</li> <li>● To experiment with a range of techniques to create moving mechanisms.</li> <li>● To explore and experiment with a range of different fonts and graphic techniques.</li> <li>● To be able to plan and design a storybook.</li> <li>● To be able to make a storybook with moving mechanisms using a design.</li> <li>● To be able to evaluate a finished product</li> </ul>	<ul style="list-style-type: none"> <li>● To explore a range of money containers and examine their features.</li> <li>● To learn how to sew using a range of different stitches.</li> <li>● To gather ideas for designing a money container.</li> <li>● To be able to design a money container.</li> <li>● To be able to make a money container using textiles</li> <li>● To be able to evaluate a finished product.</li> </ul>	<ul style="list-style-type: none"> <li>● To learn that food can be divided into different groups and that sandwiches can form part of a healthy diet</li> <li>● To taste a variety of different breads and sandwiches and examine flavours and textures</li> <li>● To design and plan a sandwich for a particular purpose.</li> <li>● To be able to create a healthy sandwich.</li> <li>● To be able to evaluate a finished product.</li> </ul>

	Vocabulary -	Vocabulary -	Vocabulary - name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet
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**Year 3/4 and Year 4/5 Cycle A**

Design and make product: For someone: For particular purpose:	Block 1	Block 2	Block 3
	<b>Electrical Systems</b>	<b>Stiff /Flexible Sheet Materials</b>	<b>Cooking and Nutrition</b>
	Torches	Structures Packaging	Seasonal Food
<ul style="list-style-type: none"> <li>● <b>Designing:</b> Understanding contexts, users and purposes. Generating, developing, modelling and communicating ideas.</li> <li>● <b>Making:</b> Planning. Practical skills and techniques.</li> <li>● <b>Evaluating:</b> Own ideas and products. Existing products. Key events and individuals.</li> <li>● <b>Technical Knowledge:</b> Making products work.</li> <li>● <b>Cooking and nutrition:</b> Where food comes from. Food preparation, cooking and nutrition.</li> </ul>	<ul style="list-style-type: none"> <li>● To identify the features of torches and investigate their uses</li> <li>● To be able to create a simple circuit and investigate different types of switches</li> <li>● To investigate casings for a torch.</li> <li>● To be able to design a torch for a particular purpose.</li> <li>● To be able to make a torch.</li> <li>● To be able to evaluate a finished product.</li> </ul>	<ul style="list-style-type: none"> <li>● To investigate a range of packaging.</li> <li>● To be able to construct nets for 3-D shaped packages.</li> <li>● To explore the use of graphics on packaging.</li> <li>● To be able to design a packaging box for a particular purpose.</li> <li>● To be able to make a packaging box by following a design.</li> <li>● To be able to evaluate a finished product.</li> </ul>	<ul style="list-style-type: none"> <li>● To cook using British ingredients available all year round</li> <li>● To know how seasonal fruits in Britain are grown and processed.</li> <li>● To understand why vegetables form an important part of a healthy and varied diet</li> <li>● To find out about how seasonally produced meat can form part of a healthy diet.</li> <li>● To know how fish are caught or reared, processed and used in healthy meals.</li> <li>● To show what you have learned about eating seasonal food as part of a healthy, varied diet.</li> </ul>

	Vocabulary - series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device	Vocabulary - shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision,	Vocabulary - name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet
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**Year 3/4 and Year 4/5 Cycle B**

Design and make product: For someone: For particular purpose:	Block 1	Block 2	Block 3
	<b>Electrical Systems</b>	<b>Textiles</b>	<b>Cooking and Nutrition</b>
	Alarms	Pencil Cases	Biscuits



<ul style="list-style-type: none"> <li>● <b>Designing:</b> Understanding contexts, users and purposes. Generating, developing, modelling and communicating ideas.</li> <li>● <b>Making:</b> Planning. Practical skills and techniques.</li> <li>● <b>Evaluating:</b> Own ideas and products. Existing products. Key events and individuals.</li> <li>● <b>Technical Knowledge:</b> Making products work.</li> <li>● <b>Cooking and nutrition:</b> Where food comes from. Food preparation, cooking and nutrition.</li> </ul>	<ul style="list-style-type: none"> <li>● To investigate what alarm systems are used for and how different types of switches are activated.</li> <li>● To investigate how to create circuits with a variety of different switches.</li> <li>● To be able to design an alarm system for a particular purpose.</li> <li>● To be able to create an alarm system based on a design.</li> <li>● To evaluate a finished product.</li> </ul>	<ul style="list-style-type: none"> <li>● To investigate a range of pencil cases.</li> <li>● To practise and compare sewing stitches.</li> <li>● To investigate ways of opening and closing pencil cases.</li> <li>● To be able to sew embellishments to a piece of fabric.</li> <li>● To be able to design a pencil case.</li> <li>● To be able to make and evaluate a pencil case based on a design.</li> </ul>	<ul style="list-style-type: none"> <li>● To investigate and compare a variety of different biscuits.</li> <li>● To explore the sensory characteristics of biscuits.</li> <li>● To be able to design biscuits for a particular purpose</li> <li>● To be able to make biscuits to fulfil design specifications.</li> <li>● To be able to evaluate a finished product</li> </ul>
	<p>Vocabulary - series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device</p>	<p>Vocabulary - fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance</p>	<p>Vocabulary - name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet</p>

Year 5 and 6 Cycle A			
Design and make product: For someone: For particular purpose:	Block 1	Block 2	Block 3
<ul style="list-style-type: none"> <li>● <b>Designing:</b> Understanding contexts, users and purposes. Generating, developing, modelling and communicating ideas.</li> <li>● <b>Making:</b> Planning. Practical skills and techniques.</li> <li>● <b>Evaluating:</b> Own ideas and products. Existing products. Key events and individuals.</li> <li>● <b>Technical Knowledge:</b> Making products work.</li> <li>● <b>Cooking and nutrition:</b> Where food comes from. Food preparation, cooking and nutrition.</li> </ul>	<p><b>Stiff, Flexible and Mouldable Materials</b></p> <p>Building Bridges - Propose design for Council Bridge from Cowes - Wootton</p> <ul style="list-style-type: none"> <li>● To explore ways in which pillars and beams are used to span gaps.</li> <li>● To explore ways in which trusses can be used to strengthen bridges.</li> <li>● To explore ways in which arches are used to strengthen bridges.</li> <li>● To understand how suspension bridges are able to span long distances</li> <li>● To develop criteria and design a prototype bridge for a purpose.</li> <li>● To analyse and evaluate products according to design criteria.</li> </ul>	<p><b>Textiles</b></p> <p>Talking Textiles</p> <ul style="list-style-type: none"> <li>● To explore ways in which stories can be told visually</li> <li>● To collect visual information to develop ideas</li> <li>● To experiment with different ways of using textiles to create effects.</li> <li>● To be able to design a piece of textile artwork that tells a story.</li> <li>● To be able to create a piece of artwork that tells a story through textiles.</li> <li>● To be able to evaluate a finished piece of artwork</li> </ul>	<p><b>Cooking and Nutrition</b></p> <p>Burgers</p> <ul style="list-style-type: none"> <li>● To explore different types of burgers and their nutrition facts</li> <li>● To explore how to make burger patties.</li> <li>● To explore sauces and side dishes for burgers</li> <li>● To explore burger buns and their suitability.</li> <li>● To be able to plan and design a burger to make.</li> <li>● To be able to make a burger and evaluate the process.</li> </ul>

	Vocabulary - frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent	Vocabulary - seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings	Vocabulary - ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out,
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Year 5/6 Cycle B			
Design and make product: For someone: For particular purpose:	Block 1	Block 2	Block 3
	<b>Textiles</b>	<b>Cooking and Nutrition</b>	<b>Electrical System Circuits:</b>
	Funky Furnishings	Bread	Fairground Rides.
<ul style="list-style-type: none"> <li>● <b>Designing:</b> Understanding contexts, users and purposes. Generating, developing, modelling and communicating ideas.</li> <li>● <b>Making:</b> Planning. Practical skills and techniques.</li> <li>● <b>Evaluating:</b> Own ideas and products. Existing products. Key events and individuals.</li> <li>● <b>Technical Knowledge:</b> Making products work.</li> <li>● <b>Cooking and nutrition:</b> Where food comes from. Food preparation, cooking and nutrition.</li> </ul>	<ul style="list-style-type: none"> <li>● To investigate and analyse different types of cushions.</li> <li>● To explore different ways to join fabric using sewing skills</li> <li>● To explore different ways to decorate fabric using sewing skills</li> <li>● To explore different ways to create fastenings.</li> <li>● To design a cushion cover</li> <li>● To make and evaluate a cushion cover.</li> </ul>	<ul style="list-style-type: none"> <li>● To investigate and evaluate bread products according to their characteristics.</li> <li>● To learn how bread products are an important part of a balanced diet and can be eaten in different ways.</li> <li>● To find out which different ingredients are needed to make bread and how ingredients can be altered and mixed to create different effects.</li> <li>● To be able to design a new bread product for a particular person or event.</li> <li>● To be able to make bread based on a plan and design.</li> <li>● To be able to evaluate a finished product.</li> </ul>	<ul style="list-style-type: none"> <li>● To develop a design criteria to inform their ideas.</li> <li>● Generate, develop, model and communicate ideas.</li> <li>● Select from a wider range of tools and equipment.</li> <li>● Investigate and analyse existing products.</li> <li>● Evaluate the ideas against their own design.</li> <li>● Apply understanding of: strengthening, stiffening and reinforcing structures.</li> <li>● Understand and use mechanical systems in their products.</li> <li>● Understand and use electrical systems in their products</li> </ul>
	Vocabulary - seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings	Vocabulary - ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine,	Vocabulary - pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output

		fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out	
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Year 5/6 Cycle C (If needed in the future)			
Design and make product: For someone: For particular purpose:	Block 1	Block 2	Block 3
	<b>Stiff, Flexible and Mouldable Materials</b>	<b>Stiff, Flexible and Mouldable Materials</b>	<b>Electrical System Circuits:</b>
	Making a gadget.	Bird boxes	Programming Pioneers
<ul style="list-style-type: none"> <li>● <b>Designing:</b> Understanding contexts, users and purposes. Generating, developing, modelling and communicating ideas.</li> <li>● <b>Making:</b> Planning. Practical skills and techniques.</li> <li>● <b>Evaluating:</b> Own ideas and products. Existing products. Key events and individuals.</li> <li>● <b>Technical Knowledge:</b> Making products work.</li> <li>● <b>Cooking and nutrition:</b> Where food comes from. Food preparation, cooking and nutrition.</li> </ul>	<ul style="list-style-type: none"> <li>● To explore how gadgets are used and made.</li> <li>● To design a gadget that compliments their spy story as well as annotating their designs.</li> <li>● To select and analyse and source suitable materials for their gadget.</li> <li>● Using their selected materials to make the gadget.</li> <li>● To analyse and evaluate products according to design criteria.</li> </ul>	<ul style="list-style-type: none"> <li>● To investigate the purpose and appearance of bird houses.</li> <li>● To investigate the materials and features of bird houses and how to draw diagrams.</li> <li>● To investigate and practise woodwork skills.</li> <li>● To investigate and practise woodwork skills.</li> <li>● To be able to make a bird house by following a plan</li> <li>● To evaluate, make predictions and promote a completed bird house.</li> </ul>	<ul style="list-style-type: none"> <li>● To explain how computers and computer programs are used in a variety of products.</li> <li>● To develop ideas for a product with an embedded computer system that controls it.</li> <li>● To develop, model and communicate ideas for an embedded system which monitors and controls a door, a room or both.</li> <li>● To develop ideas for a product and start to write programs to monitor and control them.</li> <li>● To model and communicate ideas, using either prototype models or computer-aided design.</li> <li>● To evaluate your design for a computer-controlled system and consider the views of others to improve your work.</li> </ul>

### Foundation Stage Areas of Development that support/link to the teaching of Design and Technology

During the Early Years Foundation Stage (EYFS) pupils explore and use a variety of media and materials through a combination of child initiated and adult directed activities. They have opportunities to learn to:

- Explore the textures, movement, feel and look of different media and materials.
- Respond to a range of media and materials developing an understanding that they manipulate and create effects with these.
- Use different media and materials to express their own ideas.
- Construct with a purpose in mind using a variety of resources.
- Develop skills to use simple tools and techniques competently and appropriately.
- Select appropriate resources for a product and adapt their work where necessary.

### National Curriculum Programme of Study in Design Technology

#### 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, textile 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, 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.

#### **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:

**Key stage 1**

- use the basic principles of a healthy and varied diet to prepare dishes
- Understand where food comes from.

**Key stage 2**

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.