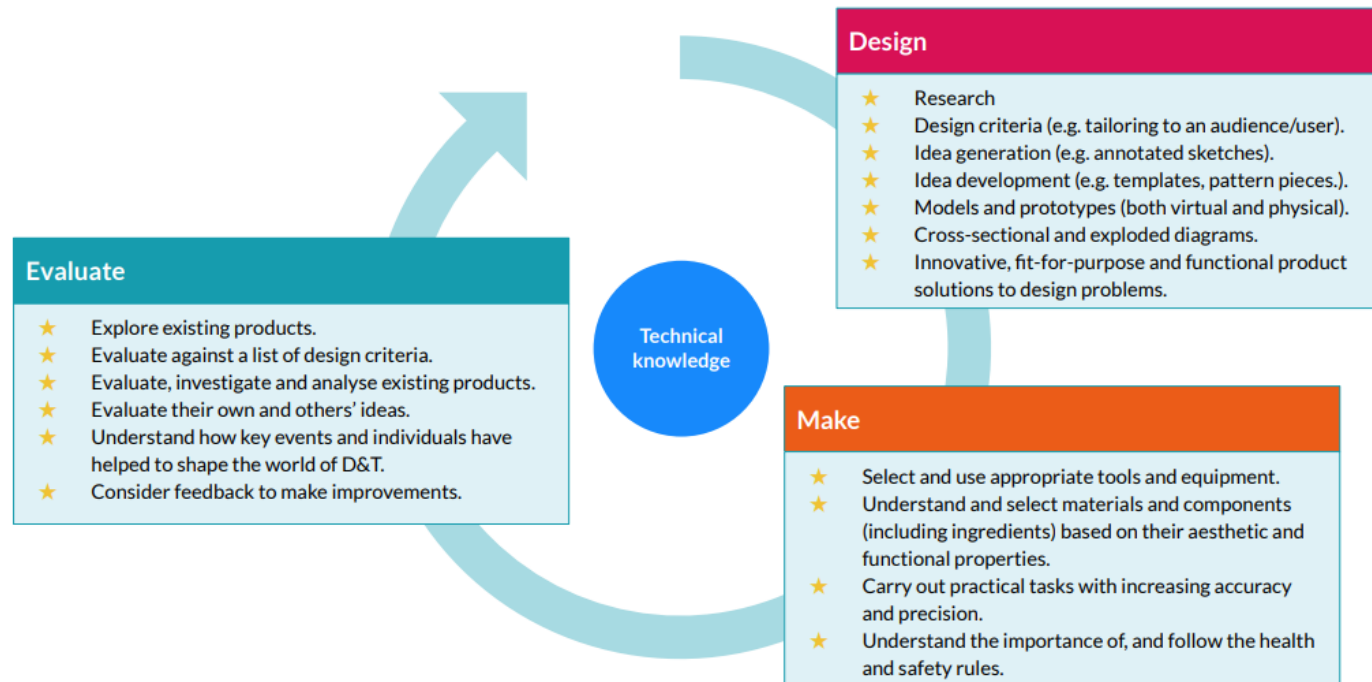


St Charles' Primary School

**Design and Technology
Curriculum**

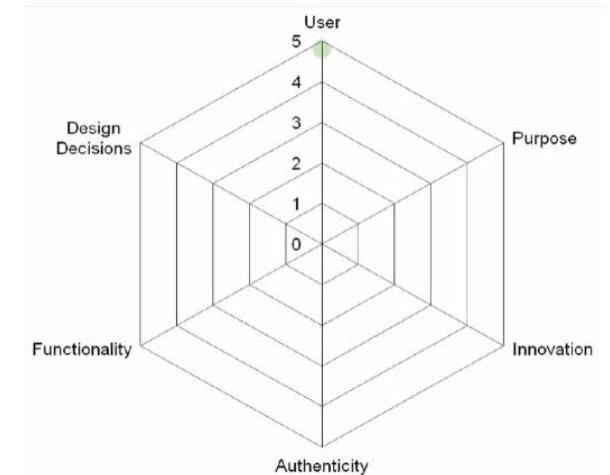
The Design Process:

The Design and technology National Curriculum outlines the three main stages of the design process: design, make and evaluate. Each unit follows these stages, to form a full project.



6 Principles for Design Technology Lessons: each principle should be considered with the children.

- User – identify who will use the product
- Purpose – what tasks/function will the product perform? Can they be used to help **in the community**?
- Functionality – how will the products actually work; pupils should be **inspired** by examples to allow them to think about what they need to be successful.
- Design Decisions – pupils are given the opportunity to make choices and be **curious** – mistakes are part of the learning process.
- Innovation – pupils must be **ambitious** and encouraged to take risks and try things that are different.
- Authenticity – How believable or real will the product be for the pupils and the user.



Curriculum Concepts:

Design Make Evaluate Technical Knowledge


Significance



Change and Continuity




Enquiry



Planning and Decision Making



Cause and Effect



Location and Place



Health and Wellbeing



Curriculum Themes:



Structures



Mechanisms



Textiles

























Digital World



Electrical Systems



Food

Long Term Plan	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 2	 Structures Freestanding structures – <u>Windmill</u> Science Link – Everyday Materials	 Mechanisms Wheels and axles – <u>Fairground Wheel</u> Science Link- Uses of Everyday Materials	 Digital World - CAD 2D and 3D modelling – <u>Avatar</u> Science Link- Materials in KS1	 Textiles 2D shape to 3D product – <u>Phone case</u> Science Link- Animals Including Humans Unit	 Structures  Frame structures – <u>Bridges</u> DT link – KS1	 Electrical Systems  Using more complex switches and circuits – <u>Steady Hand Game</u> Science Link- Electricity Yr5
Spring 2	 Mechanisms Sliders and Levers – <u>Moving Storybook</u> English/Reading – Range of pop-up and lever books	 Textiles Templates and joining techniques – <u>Pouch purse</u>	 Structures 2D and 3D structures – <u>Constructing a Church</u> Maths Link - Geometry	 Food Healthy and varied diet – <u>Healthy Sandwich</u> Maths Link - Geometry	 Food Seasonality Seasonal Salad Science Link – Seasons in KS1	 Food Celebrating culture and seasonality – <u>Come dine with me</u> Science and Maths Link
Summer 2	 Food Preparing fruit and vegetables – <u>Smoothies</u> Science Link- Animals including Humans	 Food Preparing fruit and vegetables <u>A Balanced Diet</u> Science Link- Animals including Humans	 Mechanisms Levers and Linkages – <u>Animated Picture/card</u> DT link – Yr 1 Mechanisms	 Electrical Systems  Simple circuits and switches (including programming and control) Battery Operated Light Science Link – Electricity Unit Yr4	 Mechanical Systems Structures, levers, sliders, layers and spacers – <u>Mechanical Toy</u> DT – KS1 and Yr 3	 Textiles  Combining different fabric shapes – <u>End of Year Costume</u> DT – Yr 1 and Yr 4

 - Bishop Bewick Catholic Education Trust Scheme and Resources

Early Years	Nursery – Range 5	Reception – Range 6
Expressive Arts and Design: Creating with Materials	<ul style="list-style-type: none"> • Uses various construction materials, e.g. joining pieces, stacking vertically and horizontally, balancing, making enclosures and creating spaces • Uses tools for a purpose 	<ul style="list-style-type: none"> • Uses their increasing knowledge and understanding of tools and materials to explore their interests and enquiries and develop their thinking • Develops their own ideas through experimentation with diverse materials, e.g. light, projected image, loose parts, watercolours, powder paint, to express and communicate their discoveries and understanding
Physical Development: Fine Motor	<ul style="list-style-type: none"> • Creates lines and circles pivoting from the shoulder and elbow • Manipulates a range of tools and equipment in one hand, tools include paintbrushes, scissors, hairbrushes, toothbrush, scarves or ribbons 	<ul style="list-style-type: none"> • Uses simple tools to effect changes to materials • Handles tools, objects, construction and malleable materials safely and with increasing control and intention • Shows a preference for a dominant hand

Big Question/Enquiry

Unit Coverage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Food	Can you make a smoothie to serve your parents at our summer picnic?	Can you create a healthy wrap to serve your parents at our Summer picnic?		Can you create a healthy sandwich to be served at our school picnic?	Due to difficulties importing fresh salad vegetables from Europe, Asda have asked us to design a seasonal salad with low food miles.	It's nearly our end of year celebrations! What will you serve to the guests at our graduation meal?
Textiles		We're going on a school trip; we need a purse to carry our money. Can you make one that is secure?		Apple have been in touch and want some new phone case design ideas. Can you create a phone case they could use for their new iPhone?		Can you design your own waistcoat to wear at our End of Year celebration? It must reflect your favourite memories/lesson in school.
Structures	The Eco-council have looked at using windmills to help produce energy to power our school. Can you design a windmill for our school field?		North East Architects are looking for new Church building designs for our local area. Can you design and construct a model to send to them?		Gosforth Nature Reserve have announced their boardwalk has been damaged. They need a new bridge design that will be safe for children to move around the ponds. Can you help?	
Mechanisms/ Electrical systems	Can you create a moving Story book for Nursery class?	The Hopping's is coming to town in the summer. Can we design a Ferris Wheel for families to ride on?	CAD - Smyths Toys want a new Avatar to use within one of their online games. Can you create a new Avatar design to help them? Can you design and construct an amusing "annotated picture" from your favourite book using a simple linkage system?	Can you design a new battery operated light for the staff at St Charles'?	Nursery and Reception need some new toys for the new children. Can you design a mechanical toy?	Can you help Amazon Toys design a challenging 'BUZZ' game for children aged 8-10 years?

Designing Something, for Somebody, for Some Purpose

National Curriculum Objectives

Early Learning Goal - Expressive Arts and Design

Creating with Materials

Children at the expected level of development will:

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;
- Share their creations, explaining the process they have used;
- Make use of props and materials when role playing characters in narratives and stories.

Fine Motor Skills

Children at the expected level of development will:

- Hold a pencil effectively in preparation for fluent writing – using the tripod grip in almost all cases.
- Use a range of small tools, including scissors, paint brushes and cutlery.
- Begin to show accuracy and care when drawing.

KS1 National Curriculum Objectives:

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.

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:

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

KS2 National Curriculum Objectives:

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.

Cooking and Nutrition

Pupils should be taught to:

- 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.

Developing, planning and communicating ideas

Foundation Stage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> •Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. •They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories. 	<ul style="list-style-type: none"> •Begin to draw on their own experience to help generate ideas and research conducted on criteria. •Begin to understand the development of existing products: What they are for, how they work, materials used. •Start to suggest ideas and explain what they are going to do. •Understand how to identify a target group for what they intend to design and make based on a design criteria. •Begin to develop their ideas through talk and drawings. •Make templates and mock ups of their ideas in card and paper or using ICT. 	<ul style="list-style-type: none"> •Start to generate ideas by drawing on their own and other people's experiences. •Begin to develop their design ideas through discussion, observation, drawing and modelling. •Identify a purpose for what they intend to design and make. •Understand how to identify a target group for what they intend to design and make based on a design criteria. •Develop their ideas through talk and drawings and label parts. •Make templates and mock ups of their ideas in card and paper or using ICT. 	<ul style="list-style-type: none"> •With growing confidence generate ideas for an item, considering its purpose and the user/s. •Start to order the main stages of making a product. •Identify a purpose and establish criteria for a successful product. •Understand how well products have been designed, made, what materials have been used and the construction technique. •Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. •Start to understand whether products can be recycled or reused. •Know to make drawings with labels when designing. •When planning explain their choice of materials and components including function and aesthetics. 	<ul style="list-style-type: none"> •Start to generate ideas, considering the purposes for which they are designing- link with Mathematics and Science. •Confidently make labelled drawings from different views showing specific features. •Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail. •Identify the strengths and areas for development in their ideas and products. •When planning, consider the views of others, including intended users, to improve their work. •Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. •When planning explain their choice of materials and components according to function and aesthetic. 	<ul style="list-style-type: none"> •Start to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces. •Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. •With growing confidence apply a range of finishing techniques, including those from art and design. •Draw up a specification for their design- link with Mathematics and Science. •Use results of investigations, information sources, including ICT when developing design ideas. •With growing confidence select appropriate materials, tools and techniques. •Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. 	<ul style="list-style-type: none"> •Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces. •Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. •Accurately apply a range of finishing techniques, including those from art and design. •Draw up a specification for their design- link with Mathematics and Science. •Plan the order of their work, choosing appropriate materials, tools and techniques. •Suggest alternative methods of making if the first attempts fail. •Identify the strengths and areas for development in their ideas and products. •Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.

Working with tools, equipment, materials and components to make quality products

Foundation Stage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Construct with a purpose in mind, using a variety of resources</p> <ul style="list-style-type: none"> •Use simple tools and techniques competently and appropriately. •Build and construct with a wide range of objects, selecting appropriate resources and adapting their work when necessary. •Select the tools and techniques they need to shape, assemble and join materials they are using. 	<ul style="list-style-type: none"> •Begin to make their design using appropriate techniques. •Begin to 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. •With help measure, mark out, cut and shape a range of materials. •Explore using tools e.g. scissors and a hole punch safely. •Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. •Begin to use simple finishing techniques to improve the appearance of their product. 	<ul style="list-style-type: none"> •Begin to select tools and materials; use correct vocabulary to name and describe them. •Build structures, exploring how they can be made stronger, stiffer and more stable. •With help measure, cut and score with some accuracy. •Learn to use hand tools safely and appropriately. •Start to assemble, join and combine materials in order to make a product. •Demonstrate how to cut, shape and join fabric to make a simple product. •Use basic sewing techniques. •Start to choose and use appropriate finishing techniques based on own ideas. 	<ul style="list-style-type: none"> •Select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles, food ingredients, mechanical components and electrical components. •Explain their choice of tools and equipment in relation to the skills and techniques they will be using. •Start to understand that mechanical and electrical systems have an input, process and output. •Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement. •Measure, mark out, cut, score and assemble components with more accuracy. •Start to work safely and accurately with a range of simple tools. •Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work. 	<ul style="list-style-type: none"> •Select a wider range of tools and techniques for making their product safely. •Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. •Start to join and combine materials and components accurately in temporary and permanent ways. •Understand how electrical circuits and components can be used to create functional products. •Continue to learn how to program a computer to monitor changes in the environment and control their products. •Understand how to reinforce and strengthen a 3D framework. •Demonstrate how to measure, tape or pin, cut and join fabric with some accuracy. •Begin to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. 	<ul style="list-style-type: none"> •Select appropriate materials, tools and techniques e.g. 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. •Understand how mechanical systems such as cams or pulleys or gears create movement. •Understand that mechanical and electrical systems have an input, process and output. •Begin to measure and mark out more accurately. •Demonstrate how to use skills in using different tools and equipment safely and accurately with growing confidence cut and join with accuracy to ensure a good-quality finish to the product. •Weigh and measure accurately (time, dry ingredients, liquids). •Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. •Know how to reinforce and strengthen a 3D framework. 	<ul style="list-style-type: none"> •Confidently select appropriate tools, materials, components and techniques and use them. •Use tools safely and accurately. •Assemble components to make working models. •Aim to make and to achieve a quality product. •With confidence pin, sew and stitch materials together to create a product. •Demonstrate when make modifications as they go along. •Construct products using permanent joining techniques. •Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. •Understand that mechanical and electrical systems have an input, process and output. •Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.

Evaluating processes and products

Foundation Stage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> •Talk about the things they have built and what they are used for. 	<ul style="list-style-type: none"> •Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria). •When looking at existing products explain what they like and dislike about products and why. •Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make. 	<ul style="list-style-type: none"> •Evaluate their work against their design criteria. •Look at a range of existing products explain what they like and dislike about products and why. •Start to evaluate their products as they are developed, identifying strengths and possible changes they might make. •With confidence talk about their ideas, saying what they like and dislike about them. 	<ul style="list-style-type: none"> •Start to evaluate their product against original design criteria e.g. how well it meets its intended purpose •Begin to disassemble and evaluate familiar products and consider the views of others to improve them. •Evaluate the key designs of individuals in design and technology has helped shape the world. 	<ul style="list-style-type: none"> •Evaluate their products carrying out appropriate tests. •Start to evaluate their work both during and at the end of the assignment. •Be able to disassemble and evaluate familiar products and consider the views of others to improve them. •Evaluate the key designs of individuals in design and technology has helped shape the world. 	<ul style="list-style-type: none"> •Start to evaluate a product against the original design specification and by carrying out tests. •Evaluate their work both during and at the end of the assignment. •Begin to evaluate it personally and seek evaluation from others. •Evaluate the key designs of individuals in design and technology has helped shape the world. 	<ul style="list-style-type: none"> •Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. •Evaluate their work both during and at the end of the assignment. •Record their evaluations using drawings with labels. •Evaluate against their original criteria and suggest ways that their product could be improved. •Evaluate the key designs of individuals in design and technology has helped shape the world.

Cooking and Nutrition – Food

Foundation Stage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> •Name some ingredients. •Mix ingredients together. •Talk about textures and smells of ingredients and final products. •Begin to understand healthy and unhealthy food. •Understand good high hygiene by washing hands and cleaning surfaces. 	<ul style="list-style-type: none"> •Begin to understand that all food comes from plants or animals. •Explore the understanding that food has to be farmed, grown elsewhere (e.g. home) or caught. •Start to understand how to name and sort foods into the five groups in 'The Eat well plate' •Begin to understand that everyone should eat at least five portions of fruit and vegetables every day. •Know how to prepare simple dishes safely and hygienically, without using a heat source. •Know how to use techniques such as cutting, peeling and grating. 	<ul style="list-style-type: none"> •Understand that all food comes from plants or animals. •Know that food has to be farmed, grown elsewhere (e.g. home) or caught. •Understand how to name and sort foods into the five groups in 'The Eat well plate' •Know that everyone should eat at least five portions of fruit and vegetables every day. •Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source. •Demonstrate how to use techniques such as cutting, peeling and grating. 	<ul style="list-style-type: none"> •Start to know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. •Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. •Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. •Start to understand that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate' •Begin to know that to be active and healthy, food and drink are needed to provide energy for the body. 	<ul style="list-style-type: none"> •Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. •Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. •Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. •Know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate' •Know that to be active and healthy, food and drink are needed to provide energy for the body. 	<ul style="list-style-type: none"> •Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. •Begin to understand that seasons may affect the food available. •Understand how food is processed into ingredients that can be eaten or used in cooking. •Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. •Start to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. •Begin to understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health. 	<ul style="list-style-type: none"> •Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. •Understand that seasons may affect the food available. •Understand how food is processed into ingredients that can be eaten or used in cooking. •Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. •Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. •Know different food and drink contain different substances – nutrients, water and fibre – that are needed for health.

Technical Knowledge

<ul style="list-style-type: none"> To know the names of some ingredients. To know which food is healthy and which food 	<ul style="list-style-type: none"> • Understanding the difference between fruits and vegetables • To understand that some foods typically known as vegetables are 	<ul style="list-style-type: none"> • To know that 'diet' means the food and drink that a person or animal usually eats 	<ul style="list-style-type: none"> • To know that not all fruits and vegetables can be grown in the UK • To know that climate 	<ul style="list-style-type: none"> • To know that the amount of an ingredient in a recipe is known as the 'quantity' 	<ul style="list-style-type: none"> • To understand where meat comes from - learning that beef is from cattle and 	<ul style="list-style-type: none"> • To know that 'flavour' is how a food or drink tastes • To know that many
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<p>is unhealthy.</p>	<p>actually fruits (e.g. cucumber)</p> <ul style="list-style-type: none"> • To know that a blender is a machine which mixes ingredients together into a smooth liquid • To know that a fruit has seeds and a vegetable does not • To know that fruits grow on trees or vines • To know that vegetables can grow either above or below ground • To know that vegetables can come from different parts of the plant (e.g. roots: potatoes, leaves: lettuce, fruit: cucumber) 	<ul style="list-style-type: none"> • To understand what makes a balanced diet • To know where to find the nutritional information on packaging • To know that the five main food groups are: Carbohydrates, fruits and vegetables, protein, dairy and foods high in fat and sugar • To understand that I should eat a range of different foods from each food group, and roughly how much of each food group • To know that nutrients are substances in food that all living things need to make energy, grow and develop • To know that 'ingredients' means the items in a mixture or recipe • To know that I should only have a maximum of five teaspoons of sugar a day to stay healthy • To know that many food and drinks we do not expect to contain sugar do; we call these 'hidden sugars' 	<p>affects food growth</p> <ul style="list-style-type: none"> • To know that vegetables and fruit grow in certain seasons • To know that cooking instructions are known as a 'recipe' • To know that imported food is food which has been brought into the country • To know that exported food is food which has been sent to another country. • To understand that imported foods travel from far away and this can negatively impact the environment • To know that each fruit and vegetable gives us nutritional benefits because they contain vitamins, minerals and fibre • To understand that vitamins, minerals and fibre are important for energy, growth and maintaining health • To know safety rules for using, storing and cleaning a knife safely • To know that similar coloured fruits and vegetables often have similar nutritional benefits 	<ul style="list-style-type: none"> • To know that it is important to use oven gloves when removing hot food from an oven • To know the following cooking techniques: sieving, creaming, rubbing method, cooling • To understand the importance of budgeting while planning ingredients for biscuits 	<p>how beef is reared and processed, including key welfare issues</p> <ul style="list-style-type: none"> • To know that I can adapt a recipe to make it healthier by substituting ingredients • To know that I can use a nutritional calculator to see how healthy a food option is • To understand that 'cross-contamination' means that bacteria and germs have been passed onto ready-to-eat foods and it happens when these foods mix with raw meat or unclean objects 	<p>countries have 'national dishes' which are recipes associated with that country</p> <ul style="list-style-type: none"> • To know that 'processed food' means food that has been put through multiple changes in a factory • To understand that it is important to wash fruit and vegetables before eating to remove any dirt and insecticides • To understand what happens to a certain food before it appears on the supermarket shelf (Farm to Fork)
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Unit Outcome

<p>Children will name ingredients. They will be able to sort food into what's healthy and unhealthy.</p>	<p>Children handle and explore fruits and vegetables and learn how to identify which category they fall into, before undertaking taste testing to establish their chosen</p>	<p>Through their exploration of what makes a balanced diet, children taste test food combinations of different food groups.</p>	<p>Explain that fruits and vegetables grow in different countries based on their climates. Understand that</p>	<p>Children work in groups to adapt a simple biscuit recipe, to create the tastiest biscuit. While making they will also</p>	<p>Focusing on nutrition, children research and modify a traditional Bolognese sauce recipe to make it healthier.</p>	<p>Working in groups, children research and prepare a three-course meal taught as a rotational activity over</p>
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	ingredients for the smoothie they will make and design packaging for.	They will also aim to make a wrap that includes a healthy mix of protein, vegetables and dairy, and learn about the term 'hidden sugars'.	'seasonal' fruits and vegetables are those that grow in a given season and taste best then. Know that eating seasonal fruit and vegetables has a positive effect on the environment. Design their own tart recipe using seasonal ingredients. Understand the basic rules of food hygiene and safety. Follow the instructions within a recipe.	ensure that their creation comes within the given budget of overheads and costs of ingredients	They will cook their new and improved versions, making appropriate packaging and also learn about the ethical considerations of farming cattle.	three lessons. They will taste-test and score their food and when they aren't cooking, they will research the journey of their main ingredient from 'farm to fork' or write a favourite recipe to include in a class cookbook.
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Key Skills

To prepare areas. To mix ingredients together.	<p>Design</p> <ul style="list-style-type: none"> Designing smoothie carton packaging by-hand or on ICT software <p>Make</p> <ul style="list-style-type: none"> Chopping fruit and vegetables safely to make a smoothie Identifying if a food is a fruit or a vegetable Learning where and how fruits and vegetables grow <p>Evaluate</p> <ul style="list-style-type: none"> Tasting and evaluating different food combinations Describing appearance, smell and taste Suggesting information to be included on packaging 	<p>Design</p> <ul style="list-style-type: none"> Designing a healthy wrap based on a food combination which work well together <p>Make</p> <ul style="list-style-type: none"> Slicing food safely using the bridge or claw grip Constructing a wrap that meets a design brief <p>Evaluate</p> <ul style="list-style-type: none"> Describing the taste, texture and smell of fruit and vegetables Taste testing food combinations and final products Describing the information that should be included on a label Evaluating which grip was most effective 	<p>Design</p> <ul style="list-style-type: none"> Creating a healthy and nutritious recipe for a savoury tart using seasonal ingredients, considering the taste, texture, smell and appearance of the dish <p>Make</p> <ul style="list-style-type: none"> Knowing how to prepare themselves and a work space to cook safely in, learning the basic rules to avoid food contamination Following the instructions within a recipe <p>Evaluate</p> <ul style="list-style-type: none"> Establishing and using design criteria to help test and review dishes Describing the benefits of seasonal fruits and vegetables and the impact on 	<p>Design</p> <ul style="list-style-type: none"> Designing a biscuit within a given budget, drawing upon previous taste testing <p>Make</p> <ul style="list-style-type: none"> Following a baking recipe Cooking safely, following basic hygiene rules Adapting a recipe <p>Evaluate</p> <ul style="list-style-type: none"> Evaluating a recipe, considering: taste, smell, texture and appearance Describing the impact of the budget on the selection of ingredients Evaluating and comparing a range of products Suggesting modifications 	<p>Design</p> <ul style="list-style-type: none"> Adapting a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients Writing an amended method for a recipe to incorporate the relevant changes to ingredients Designing appealing packaging to reflect a recipe <p>Make</p> <ul style="list-style-type: none"> Cutting and preparing vegetables safely Using equipment safely, including knives, hot pans and hobs Knowing how to avoid cross-contamination Following a step by step method carefully to make a recipe <p>Evaluate</p>	<p>Design</p> <ul style="list-style-type: none"> Writing a recipe, explaining the key steps, method and ingredients Including facts and drawings from research undertaken <p>Make</p> <ul style="list-style-type: none"> Following a recipe, including using the correct quantities of each ingredient Adapting a recipe based on research Working to a given timescale Working safely and hygienically with independence <p>Evaluate</p> <ul style="list-style-type: none"> Evaluating a recipe, considering: taste, smell, texture and origin of the food group Taste testing and scoring final products Suggesting and writing up points of
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			the environment • Suggesting points for improvement when making a seasonal tart		• Identifying the nutritional differences between different products and recipes • Identifying and describing healthy benefits of food groups	improvements in productions • Evaluating health and safety in production to minimise cross contamination
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What will these skills look like?

Children will prepare areas to work in. They will use different tools to combine different ingredients (e.g. spoons, whisks etc.).	Children will use tools safely, including knives, scissors, graters and peelers. Children will use measuring equipment (with support) to measure ingredients, including jugs, scales and spoons. Children will use fruit and vegetable ingredients to prepare a dish against a design criteria.	Children will use tools safely, including knives, scissors, graters, whisks, rolling pins and peelers. Children will use measuring equipment to measure ingredients, including jugs, scales and spoons. Children will use a heat source safely to heat/cook food. Children will use savoury ingredients to prepare a dish against a design criteria.	Children will use tools safely, including knives, scissors, graters, whisks, rolling pins and peelers. Children will use measuring equipment to measure ingredients, including jugs, scales and spoons. Children will use a heat source safely to heat/cook food. Children will use savoury ingredients to prepare a dish against a design criteria.
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Vocabulary







fruit and vegetable names, sensory vocabulary	<ul style="list-style-type: none"> • Blender • Carton • Fruit • Healthy • Ingredients • Peel • Peeler • Recipe • Slice • Smoothie • Stencil • Template • Vegetable 	<ul style="list-style-type: none"> • Alternative • Diet • Balanced diet • Evaluation • Expensive • Healthy • Ingredients • Nutrients • Packaging • Refrigerator • Sugar • Substitute 	<ul style="list-style-type: none"> • Climate • Dry climate • Exported • Imported • Mediterranean climate • Nationality • Nutrients • Polar climate • Recipe • Seasonal food • Seasons • Temperate climate • Tropical climate 	<ul style="list-style-type: none"> • Adapt • Budget • Cooling rack • Creaming • Equipment • Evaluation • Flavour • Ingredients • Method • Net • Packaging • Prototype • Quantity • Recipe • Rubbing • Sieving • Target audience • Unit of measurement • Utilities 	<ul style="list-style-type: none"> • Adapt • Budget • Cooling rack • Creaming • Equipment • Evaluation • Flavour • Ingredients • Method • Net • Packaging • Prototype • Quantity • Recipe • Rubbing • Sieving • Target audience • Unit of measurement • Utilities 	<ul style="list-style-type: none"> • Accompaniment • Collaboration • Cookbook • Cross-contamination • Equipment • Farm • Flavour • Illustration • Imperative-verb • Ingredients • Method • Nationality • Preparation • Processed • Reared • Recipe • Research • Storyboard • Target audience • Top tips • Unit of measurement
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Resources/Equipment

Specific ingredients, knives, graters, bowls, spoons, measuring equipment, jugs, scales, whisks, rolling pins, peelers, heat source (microwave or oven).

Suggested Visits/Visitors

Fruit Farmer		Fruit Farmer	Bakery	The People's Kitchen –	Invite parents in – end of
Pick your own etc.		Pick your own etc.	Asda Bakers	visit to school to talk	year celebration to try

					about how meals help.	one of their courses
Examples of work						
						
						

Mechanisms			Electrical and Mechanical Systems			
Foundation Stage	Year 1 Moving Storybook	Year 2 Fairground Wheel	Year 3 Mechanical systems – Pneumatic Toys	Year 4 Electrical systems – Torches	Year 5 Mechanical systems – Pop-up Book	Year 6 Electrical systems – Steady Hand Game
<ul style="list-style-type: none"> •Explore a range of toys and equipment that have mechanisms. 	<ul style="list-style-type: none"> •Operate sliders and levers. •Know that different mechanisms create different types of movement. •Join materials together as part of a moving product. •Add some kind of design to their product. 	<ul style="list-style-type: none"> •Know the difference between fixed and free moving axels. •Know simple methods to fix wheels and axels to a product. •Make a product that moves. •Describe the materials using different words. •Say why they have chosen moving parts. 	<ul style="list-style-type: none"> •Select the most appropriate tools and techniques to use for a given task. •Make a product which uses mechanical components. •Use a number of components. •Start to understand that mechanical systems such as levers 	<ul style="list-style-type: none"> •Know what an electrical circuit is and know a range of simple electrical components and their functions. <i>E.g. a bulb, buzzer and switch.</i> •Make a simple circuit and add components to their circuits. •Alter their product after checking it. 	<ul style="list-style-type: none"> •Understand how mechanical systems such as cams or pulleys or gears create movement. •Incorporate cams, pulleys or gears in their own product. 	<ul style="list-style-type: none"> •Incorporate simple self- made switches in a circuit. •Use different kinds of circuit in their product. •Know how to assess faults in their own electrical systems. •Think of ways in which adding a circuit would improve their product. •Design ICT controlled mechanisms- use computer to control programs and equipment.

			and linkages or pneumatic systems create movement. •Name the parts and functions of a lever and linkage mechanical system.	•Understand how electrical circuits and components can be used to create functional products.		•Use a computer to operate switch and devise simple programs to control own models.
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Technical Knowledge

<ul style="list-style-type: none"> •To know that different objects move in different ways. 	<ul style="list-style-type: none"> • To know that a mechanism is the parts of an object that move together. •To know that a slider mechanism moves an object from side to side • To know that a slider mechanism has a slider, slots, guides and an object • To know that bridges and guides are bits of card that purposefully restrict the movement of the slider • To know that in Design and technology we call a plan a 'design' 	<ul style="list-style-type: none"> •To know what an axle is. • To know the difference between fixed and free moving axels. • To know that different materials have different properties and are therefore suitable for different uses • To know the features of a Ferris wheel include the wheel, frame, pods, a base an axle and an axle holder • To know that it is important to test my design as I go along so that I can solve any problems that may occur 	<ul style="list-style-type: none"> • To understand how pneumatic systems work • To understand that pneumatic systems can be used as part of a mechanism • To know that pneumatic systems operate by drawing in, releasing and compressing air • To understand how sketches, drawings and diagrams can be used to communicate design ideas • To know that exploded-diagrams are used to show how different parts of a product fit together • To know that thumbnail sketches are small drawings to get ideas down on paper quickly 	<ul style="list-style-type: none"> • To understand that electrical conductors are materials which electricity can pass through • To understand that electrical insulators are materials which electricity cannot pass through • To know that a battery contains stored electricity that can be used to power products • To know that an electrical circuit must be complete for electricity to flow •To know that a switch can be used to complete and break an electrical circuit • To know the features of a torch: case, contacts, batteries, switch, reflector, lamp, lens • To know facts from the history and invention of the electric light bulb(s) - by Sir Joseph Swan and Thomas Edison 	<ul style="list-style-type: none"> • To know that mechanisms control movement • To understand that mechanisms that can be used to change one kind of motion into another •To understand how to use sliders, pivots and folds to create paper-based Mechanisms • To know that a design brief is a description of what I am going to design and make • To know that designers often want to hide mechanisms to make a product more aesthetically pleasing 	<ul style="list-style-type: none"> • To know that batteries contain acid, which can be dangerous if they leak • To know the names of the components in a basic series circuit including a buzzer •To know that 'form' means the shape and appearance of an object •To know the difference between 'form' and 'function' •To understand that 'fit for purpose' means that a product works how it should and is easy to use • To know that form over purpose means that a product looks good but does not work very well • To know the importance of 'form follows function' when designing: the product must be designed primarily with the function in mind • To understand the diagram perspectives 'top view', 'side view' and 'back'
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What would this knowledge look like?

Children will	Children will sort	Children will be able to sort	Children will be able to	Children will explain	Children will label	Children will create their own circuits
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experiment with a range of toys and equipment – rolling, pushing, pop-up etc.	levers and sliders. •They will experiment with using levers and sliders in pre-existing products, discussing the purpose of them.	fixed and free moving axels. •They will describe the differences between these.	label diagrams of lever and linkage systems with annotations. •They will describe the movements created and explain the process.	what an electrical circuit is. •They will create their own circuits using a range of electrical components. •They will draw their own circuits and label the components, describing their function.	pulleys and gears. •They will experiment with using pulleys and gears together to create movement.	using a range of electrical components. •They will draw their own diagrams of their circuits and label the components, describing the functions.
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Key Skills

To construct own products that move.	<p>Design</p> <ul style="list-style-type: none"> Explaining how to adapt mechanisms, using bridges or guides to control the movement Designing a moving story book for a given audience <p>Make</p> <ul style="list-style-type: none"> Following a design to create moving models that use levers and sliders <p>Evaluate</p> <ul style="list-style-type: none"> Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed Reviewing the success of a product by testing it with its intended audience 	<p>Design</p> <ul style="list-style-type: none"> Selecting a suitable linkage system to produce the desired motions Designing a wheel Selecting appropriate materials based on their properties <p>Make</p> <ul style="list-style-type: none"> Selecting materials according to their characteristics Following a design brief <p>Evaluate</p> <ul style="list-style-type: none"> Evaluating different designs Testing and adapting a design 	<p>Design</p> <ul style="list-style-type: none"> Designing a toy which uses a pneumatic system Developing design criteria from a design brief Generating ideas using thumbnail sketches and exploded diagrams Learning that different types of drawings are used in design to explain ideas clearly <p>Make</p> <ul style="list-style-type: none"> Creating a pneumatic system to create a desired motion Building secure housing for a pneumatic system Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy Selecting materials due to their functional and aesthetic characteristics 	<p>Design</p> <ul style="list-style-type: none"> Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas <p>Make</p> <ul style="list-style-type: none"> Making a torch with a working electrical circuit and switch Using appropriate equipment to cut and attach materials Assembling a torch according to the design and success criteria <p>Evaluate</p> <ul style="list-style-type: none"> Evaluating electrical products Testing and evaluating the success of a final product and taking inspiration from the world 	<p>Design</p> <ul style="list-style-type: none"> Designing a pop-up book which uses a mixture of structures and mechanisms Naming each mechanism, input and output accurately Storyboarding ideas for a book <p>Make</p> <ul style="list-style-type: none"> Following a design brief to make a pop-up book, neatly and with focus on accuracy Making mechanisms and/or structures using sliders, pivots and folds to produce movement Using layers and spacers to hide the workings of mechanical parts for an Aesthetically pleasing result <p>Evaluate</p> <ul style="list-style-type: none"> Evaluating the work of others and receiving feedback on own work Suggesting points for 	<p>Design</p> <ul style="list-style-type: none"> Designing a steady hand game - identifying and naming the components required Drawing a design from three different perspectives Generating ideas through sketching and discussion Modelling ideas through prototypes Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function' <p>Make</p> <ul style="list-style-type: none"> Constructing a stable base for a game Accurately cutting, folding and assembling a net Decorating the base of the game to a high quality finish Making and testing a circuit Incorporating a circuit into a base <p>Evaluate</p> <ul style="list-style-type: none"> Testing own and others finished games, identifying what went well and making suggestions for improvement Gathering images and information about existing children's toys Analysing a selection of existing children's toys
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			<ul style="list-style-type: none"> Manipulating materials to create different effects by cutting, creasing, folding, weaving <p>Evaluate</p> <ul style="list-style-type: none"> Using the views of others to improve designs Testing and modifying the outcome, suggesting improvements Understanding the purpose of exploded-diagrams through the eyes of a designer and their client 		improvement	
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What will these skills look like?

Using resources in construction areas, children will build their own products, adding wheels and other moving parts.	Children will be able to join materials together in different ways. They will use tools safely. They will produce a final product and will explain how the levers and sliders cause different parts to move.	Children will be able to attach wheels and axels to a product. Children will use tools safely. They will produce a final product and can move and explain how they have achieved this.	Children will use tools safely and accurately. They will produce a final product that includes levers and linkages, explaining how these cause different parts to move.	Children will create their own simple electrical circuits. They will recognise when their circuit is incomplete and use problem solving skills to recognise and correct these faults.	Children will experiment with using cams and pulleys, exploring how they work together. They will apply these mechanisms in a final, moving product.	Children will create their own, more complex, electrical circuits. They will create their own switches, using what they know about electricity and conductors. They will recognise when their circuit is incomplete and use problem solving skills to recognise and correct these faults.
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Vocabulary




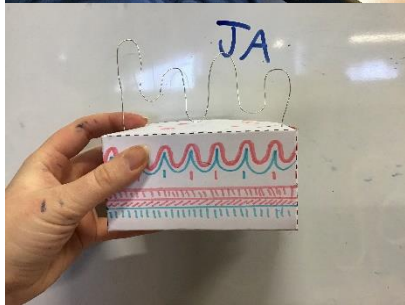
push, pull, wheels, vehicle	<ul style="list-style-type: none"> Assemble Design Evaluation Mechanism Model Sliders Stencil 	<ul style="list-style-type: none"> Axle Decorate Evaluation Ferris wheel Mechanism Stable Strong 	<ul style="list-style-type: none"> Exploded-diagram Function Input Lever Linkage Mechanism Motion 	<ul style="list-style-type: none"> Battery Bulb Buzzer Cell Component Conductor Copper 	<ul style="list-style-type: none"> Aesthetic Computer-aided design (CAD) Caption Design Design brief Design criteria 	<ul style="list-style-type: none"> Assemble Battery Battery pack Benefit Bulb Bulb holder Buzzer
	<ul style="list-style-type: none"> Target audience 	<ul style="list-style-type: none"> Test 	<ul style="list-style-type: none"> Net 	<ul style="list-style-type: none"> Design criteria 	<ul style="list-style-type: none"> Exploded-diagram 	<ul style="list-style-type: none"> Circuit

	<ul style="list-style-type: none"> ● Template ● Test 	<ul style="list-style-type: none"> ● Waterproof ● Weak 	<ul style="list-style-type: none"> ● Output ● Pivot ● Pneumatic system ● Thumbnail sketch 	<ul style="list-style-type: none"> ● Electrical item ● Electricity ● Electronic item ● Function ● Insulator ● Series circuit ● Switch ● Test ● Torch ● Wire 	<ul style="list-style-type: none"> ● Function ● Input ● Linkage ● Mechanism ● Motion ● Output ● Pivot ● Prototype ● Slider ● Structure ● Template 	<ul style="list-style-type: none"> ● Circuit symbol ● Component ● Conductor ● Copper ● Design ● Design criteria ● Evaluation ● Fine motor skills ● Fit for purpose ● Form ● Function ● Gross motor skills ● Insulator ● LED
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Resources/Equipment

Construction sets, wheels, axels, sliders, levers, gears, pulleys, wires, bulbs, buzzers, motors,

Examples of work

									
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Structures

Foundation Stage	Year 1	Year 3	Year 5
<ul style="list-style-type: none"> •Use building blocks to construct. •Use materials in the construction area for a range of purposes 	<ul style="list-style-type: none"> •Talk with others about how they want to construct their product. •Select appropriate resources and tools for their building projects. •Make simple plans before making objects, e.g. drawings, arranging pieces of construction before building. •Know the name of simple 2D and 3D shapes. •Know how to make freestanding structures stronger, stiffer and more stable. •Make a structure using different materials. •Work tidily. •Begin to measure materials to use in a structure. •Join material in different ways. 	<ul style="list-style-type: none"> •Use the most appropriate materials. •Use more sophisticated methods for stiffening/strengthening structures. •Know what a net is. •Know the names of more complex 3D shapes. •Work accurately to make and cuts holes. •Measure, mark out, cut and join materials in different ways. •Test a material's strength. 	<ul style="list-style-type: none"> •Select appropriate tools, materials, components and techniques and justify their choices. •Stiffen strengthen and reinforce a range of 3-D frameworks. •Know which shapes are the strongest and will support the most weight in a structure. •Know which materials are best suited to stiffen and reinforce by selecting them due to their properties. •Construct products using permanent joining techniques. •Hide joints so as to improve the look of their product. •Use accurate measurements to ensure that everything is precise. •Use skills in using different tools and equipment safely and accurately.

Technical Knowledge

<ul style="list-style-type: none"> •To know that materials can be constructed in different ways. 	<ul style="list-style-type: none"> • To understand that the shape of materials can be changed to improve the strength and stiffness of structures • To understand that cylinders are a strong type of structure (e.g. the main shape used for windmills and lighthouses) • To understand that axles are used in structures and mechanisms to make parts turn in a circle • To begin to understand that different structures are used for different 	<ul style="list-style-type: none"> • To understand that wide and flat based objects are more stable • To understand the importance of strength and stiffness in structures • To know that a façade is the front of a structure • To know that a paper net is a flat 2D shape that can become a 3D shape once assembled • To know that a design specification is a list of success criteria for a product 	<ul style="list-style-type: none"> • To understand some different ways to reinforce structures • To understand how triangles can be used to reinforce bridges • To know that properties are words that describe the form and function of materials • To understand why material selection is important based on their properties • To understand the material (functional and aesthetic) properties of wood
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	<p>purposes</p> <ul style="list-style-type: none"> • To know that a structure is something that has been made and put together • To know that a client is the person I am designing for • To know that design criteria is a list of points to ensure the product meets the client's needs and wants • To know that a windmill harnesses the power of wind for a purpose like grinding grain, pumping water or generating electricity • To know that windmill turbines use wind to turn and make the machines inside work • To know that a windmill is a structure with sails that are moved by the wind • To know the three main parts of a windmill are the turbine, axle and structure 		<ul style="list-style-type: none"> • To understand the difference between arch, beam, truss and suspension bridges • To understand how to carry and use a saw safely
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What would this knowledge look like?

<ul style="list-style-type: none"> •Children will use construction materials to build different things. 	<ul style="list-style-type: none"> •Children will name, describe and sort a range of 2D and 3D shapes. •Children will experiment with ways in which they can make their structures stronger and explain these. 	<ul style="list-style-type: none"> •Children will use nets to construct 3D shapes. •Children will name and describe more complex shapes. 	<ul style="list-style-type: none"> •Children will describe the properties of different shapes. •They will make predictions and test which shapes hold the most weight.
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Key Skills

<ul style="list-style-type: none"> •To use motor skills and hand-eye coordination •To use language skills 	<p>Design</p> <ul style="list-style-type: none"> • Learning the importance of a clear design criteria • Including individual preferences and requirements in a design <p>Make</p> <ul style="list-style-type: none"> • Making stable structures from card, tape and glue • Learning how to turn 2D nets into 3D structures • Following instructions to cut and assemble the supporting structure of a windmill • Making functioning turbines and axles which are assembled into a main supporting structure <p>Evaluate</p> <ul style="list-style-type: none"> • • 	<p>Design</p> <ul style="list-style-type: none"> • Designing a castle with key features to appeal to a specific person/purpose • Drawing and labelling a castle design using 2D shapes, labelling: -the 3D shapes that will create the features - materials needed and colours • Designing and/or decorating a castle tower on CAD software <p>Make</p> <ul style="list-style-type: none"> • Constructing a range of 3D geometric shapes using nets • Creating special features for individual designs • Making facades from a range of recycled materials <p>Evaluate</p> <ul style="list-style-type: none"> • Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design • Suggesting points for modification of the individual designs 	<p>Design</p> <ul style="list-style-type: none"> • Designing a stable structure that is able to support weight • Creating frame structure with focus on triangulation <p>Make</p> <ul style="list-style-type: none"> •• Making a range of different shaped beam bridges • Using triangles to create truss bridges that span a given distance and supports a load • Building a wooden bridge structure • Independently measuring and marking wood accurately • Selecting appropriate tools and equipment for particular tasks • Using the correct techniques to saws safely • Identifying where a structure needs reinforcement and using card corners for support • Explaining why selecting appropriating materials is an important part of the design process • Understanding basic wood functional properties <p>Evaluate</p>
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			<ul style="list-style-type: none"> • Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary • Suggesting points for improvements for own bridges and those designed by others
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What will these skills look like?

<ul style="list-style-type: none"> •To build structures using hand-eye coordination skills •Children will describe what they have built and how. 	<ul style="list-style-type: none"> •Children will use tools safely to cut, screw, nail, glue, fill and sand. •Children will choose a technique and explain why they have chosen this. •Using a ruler, children will measure materials for a purpose. •Children will be able to accurately join materials together. 	<ul style="list-style-type: none"> •Children choose their own materials. •Children offer suggestions for combining materials and experiment with different ways of joining. •Children will be able to make a structure stronger. •They will use tools safely to cut and make holes. •Using a ruler, children will measure accurately with independence. 	<ul style="list-style-type: none"> •Children choose their own materials. •Children offer suggestions for combining materials and experiment with different ways of joining. •They are able to hide joints in their own structures for a more polished, finished piece. •Children will offer ways in which their structure can be stiffened and strengthened and will apply these to their own work.
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Vocabulary

cut, fold, join, fix, weak, strong, tower, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder	<ul style="list-style-type: none"> • Client • Design • Evaluation • Net • Stable • Strong • Test • Weak • Windmill 	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, evaluating, design brief design criteria, innovative, prototype	<ul style="list-style-type: none"> • Abutment • Accurate • Arched bridge • Beam bridge • Coping saw • Evaluation • File • Mark out • Material properties • Measure • Predict • Reinforce • Research • Sandpaper • Set square • Suspension bridge • Tenon saw • Test • Truss bridge • Wood
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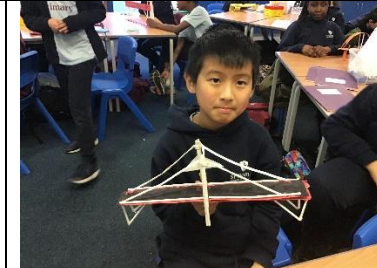
Resources/Equipment

Wood, dowel, rulers, junior hack-saws,

Suggested Visits/Visitors

	Visit Windmills Cleadow, Sunderland		Visit Newcastle castle, Tynemouth or Hylton Castle		Visit to the Quayside	
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Examples of work



Textiles

Foundation Stage	Year 2 Pouch/Purses	Year 4 Phone Case	Year 6 End of Year Costume
<ul style="list-style-type: none"> •Begin to experiment with different materials, including fabrics, wool, thread, string, felt, ribbon, cotton wool or faux fur. •Investigate the properties of these materials. •Discuss texture and generate words to describe them. •Use fabric in imaginative play 	<ul style="list-style-type: none"> •Cut, shape and join fabric to make a simple garment. •Use basic sewing techniques. •To describe how different textiles feel. •Use a range of tools safely (e.g. scissors and a hole punch). •Measure and cut with some accuracy. •Explain why they chose a certain material/textile. •Cut, shape and join a fabric to make a simple garment using basic sewing techniques. 	<ul style="list-style-type: none"> •Measure, tape or pin, cut and join fabric with some accuracy •Sew using a range of different stitches, weave and knit •Choose textiles both for their appearance and qualities, taking the user into account. •Devise a template. •Measure, mark out, cut and shape a range of materials using appropriate tools, equipment and techniques. •Add further decorations to work to finish a product. 	<ul style="list-style-type: none"> •Pin, sew and stitch materials together to create a product. •Take the user into account when choosing textiles. •Create a prototype. •Use a range of joining techniques. •Measure and mark out accurately. •Think about how a product could be sold.

Key Knowledge

<ul style="list-style-type: none"> •Know that objects are made of different materials 	<ul style="list-style-type: none"> •To know that fabric can be joined in different ways. 	<ul style="list-style-type: none"> •To know what a template is •To know how 2D nets form 3D products •To know that there are different types of stitches 	<ul style="list-style-type: none"> •To know that are many ways to join materials together. •To know the purpose of a product •To know who the audience is when designing and making a product.
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What would this knowledge look like?

<p>Children will be able to name the materials that objects are made of.</p> <p>They will be able to describe the material based on senses.</p>	<p>Children will be able to recognise how fabric is joined together and suggest ways in which they can join their fabric.</p>	<p>Children will use templates as the basis for their own product.</p> <p>Children will use 2D nets and build 3D products from these – use maths equipment to practise this.</p> <p>Children will recognise different types of stitches and give reasons where and when they would be used.</p>	<p>Children will identify the ways in which materials are joined by naming the types of stitch or joining technique.</p> <p>Children will discuss the purpose of a product.</p> <p>They will explain who the intended audience is and justify their reasons for choices, based on the intended audience.</p>
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Key Skills

<p>•To weave with simple fabrics.</p>	<p><u>Design</u></p> <ul style="list-style-type: none"> • Designing a pouch <p><u>Make</u></p> <ul style="list-style-type: none"> • Selecting and cutting fabrics for sewing • Decorating a pouch using fabric glue or running stitch • Threading a needle • Sewing running stitch, with evenly spaced, neat, even stitches to join fabric • Neatly pinning and cutting fabric using a template <p><u>Evaluate</u></p> <ul style="list-style-type: none"> • Troubleshooting scenarios posed by teacher • Evaluating the quality of the stitching on others' work • Discussing as a class, the success of their stitching against the success criteria • Identifying aspects of their peers' work that they particularly like and why 	<p><u>Design</u></p> <ul style="list-style-type: none"> • <p><u>Make</u></p> <ul style="list-style-type: none"> • <p><u>Evaluate</u></p> <ul style="list-style-type: none"> • 	<p><u>Design</u></p> <ul style="list-style-type: none"> • <p><u>Make</u></p> <ul style="list-style-type: none"> • <p><u>Evaluate</u></p> <ul style="list-style-type: none"> •
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What will these skills look like?

<p>With support, children will weave materials to create a pattern.</p>	<p>Children will explore a range of items and plan their own textile product with illustrations and labels, using design criteria.</p> <p>Children will use a range of scissors to cut and shape materials.</p> <p>They will use sewing techniques and glue to join fabric.</p> <p>Using needles with a large eye, they will thread their own needle.</p> <p>Using binca squares, they will practise simple sewing skills.</p> <p>Using a ruler and pencil, they will mark material ready for cutting.</p> <p>Using the design criteria, they will evaluate their final product.</p>	<p>Children will explore a range of items and plan their own textile product with illustrations and labels, using design criteria.</p> <p>Children will use tools safely to measure, tape, cut and join fabric.</p> <p>Using needles with a smaller eye, they will thread their own needle.</p> <p>They will use some different stitches in their own work.</p> <p>Using a ruler and pencil, they will mark material ready for cutting.</p> <p>Using the design criteria, they will evaluate their final product.</p>	<p>Children will explore a range of items and plan their own textile product with illustrations and labels, using design criteria.</p> <p>Children will create an accurate prototype, evaluate this, and use it as the basis for a final product.</p> <p>There is a growing range of examples of effective joining techniques that show control and some precision.</p>
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Vocabulary

<p>Material, fabric, soft, fluffy, weave, in, out</p>	<ul style="list-style-type: none"> ● Accurate ● Fabric ● Knot ● Pouch ● Running-stitch ● Sew ● Shape ● Stencil ● Template ● Thimble 	<p>Fastenings</p> <ul style="list-style-type: none"> ● Aesthetic ● Assemble ● Book sleeve ● Design criteria ● Evaluation ● Fabric ● Fastening ● Mock-up ● Net ● Running-stitch ● Stencil 	<ul style="list-style-type: none"> ● Accurate ● Adapt ● Annotate ● Design ● Design criteria ● Detail ● Fabric ● Fastening ● Knot ● Properties ● Running-stitch ● Seam
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		<ul style="list-style-type: none"> • Target audience • Target customer • Template 	<ul style="list-style-type: none"> • Sew • Shape • Target audience • Target customer • Template • Thread • Unique • Waistcoat
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Resources/Equipment

Needles, thread, binca squares, wool, weaving materials, felt, beads, zips, sequins, pompoms, any other fabric, fabric scissors.

Examples of work

	PICTURES TO ADD		
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