



DESIGN TECHNOLOGY LONG TERM PLANNING DOCUMENT

Design Technology is one subject where there is a bought scheme in place. For DT, the scheme of work is through 'Projects on a page'

Curriculum Intent Statement

The intention of the DT curriculum across Greenfields Federation is to make the subject as inspiring, creative, rigorous and practical as possible. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable learners. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality Design and Technology education makes an essential contribution to the creativity, culture, wealth and well-being of the whole community. The planning of DT will provide opportunities for pupils to be challenged, including those who might not always shine in other academic subjects. Pupils from Year 1 are taught in two year cycles so progression should be seen between the cycles of Reception, KS1, Lower KS2 and Upper KS2.

Aims and Objectives

The aims of the Expressive Arts subjects are:

- To promote a love of learning in the enjoyment of arts and culture through a wide-range of experiences and opportunities; during and outside normal teaching hours.
- To continually strive to improve and develop teaching, ensuring pupils receive quality provision and a breadth of arts and cultural occasions.
- To involve pupil engagement; they will be able to talk enthusiastically about, and demonstrate their knowledge, skills, understanding and experience of, a broad range of high-quality arts and cultural provision.

- To embed a diverse curriculum, allowing pupils to explore and make connections in other subjects.
- To allow pupils to have the opportunity to have greater input in what they learn and how they record their learning.
- To have a commitment to CPD across the coverage of arts and culture for all members of staff, with appropriate resources for this.
- To work with and understand the value of working with a broad range of partners to provide and deliver high-quality arts and cultural education.
- To demonstrate a clear commitment to the equality of education and the opportunity for all pupils with protected characteristics (as defined in the Equality Act 2010) to take part in arts and cultural experiences.

LONG TERM PLAN

<u>Key Skill</u>	<u>Coverage Year 1/2 Cycle A</u>	<u>Coverage Year 1/2 Cycle B</u>
1. Design purposeful, functional, appealing products for themselves and other users based on design criteria	Autumn A- Snap, Crackle and Pop Spring A- Our, World, Other Worlds Summer A- The Secret Garden/Wild and Wonderful	Autumn B- Turrets and Tiaras Summer B- Land Ahoy
2. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology	Autumn A- Snap, Crackle and Pop Spring A- Our, World, Other Worlds Summer A- The Secret Garden/Wild and Wonderful	Autumn B- Turrets and Tiaras Summer B- Land Ahoy
3. Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]	Autumn A- Snap, Crackle and Pop Spring A- Our, World, Other Worlds Summer A- The Secret Garden/Wild and Wonderful	Autumn B- Turrets and Tiaras Summer B- Land Ahoy

4. Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics	Autumn A- Snap, Crackle and Pop Spring A- Our, World, Other Worlds Summer A- The Secret Garden/Wild and Wonderful	Autumn B- Turrets and Tiaras Summer B- Land Ahoy
5. Explore and evaluate a range of existing products	Autumn A- Snap, Crackle and Pop Spring A- Our, World, Other Worlds Summer A- The Secret Garden/Wild and Wonderful	Autumn B- Turrets and Tiaras Summer B- Land Ahoy
6. Evaluate their ideas and products against design criteria	Autumn A- Snap, Crackle and Pop Spring A- Our, World, Other Worlds Summer A- The Secret Garden/Wild and Wonderful	Autumn B- Turrets and Tiaras Summer B- Land Ahoy
7. Build structures, exploring how they can be made stronger, stiffer and more stable		Summer B- Land Ahoy
8. Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.	Summer A- The Secret Garden/Wild and Wonderful	Autumn B- Turrets and Tiaras
<u>Cooking and Nutrition</u>		
9. Use the basic principles of a healthy and varied diet to prepare dishes	Spring A- Our, World, Other Worlds	
10. Understand where food comes from.	Spring A- Our, World, Other Worlds	

<u>Key Skill</u>	<u>Coverage Year 3/4 Cycle 1</u>	<u>Coverage Year 3/4 Cycle 2</u>	<u>Coverage Year 5/6 Cycle 1</u>	<u>Coverage Year 5/6 Cycle 2</u>
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	Autumn 1- A Walk in the Woods Summer 1- What Lies Beneath	Autumn 2- Groovy Greeks Spring 2- From Stone to Steel Summer 2- Our Diverse World	Autumn 1- Welcome to the Jungle Spring 1- Tomb Raiders	Autumn 2- World Conflict Spring 2- North America Summer 2- Viking Invasions
Design - generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	Autumn 1- A Walk in the Woods Summer 1- What Lies Beneath	Autumn 2- Groovy Greeks Spring 2- From Stone to Steel Summer 2- Our Diverse World	Autumn 1- Welcome to the Jungle Spring 1- Tomb Raiders	Autumn 2- World Conflict Spring 2- North America Summer 2- Viking Invasions
Make - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately	Autumn 1- A Walk in the Woods Summer 1- What Lies Beneath	Autumn 2- Groovy Greeks Spring 2- From Stone to Steel Summer 2- Our Diverse World	Autumn 1- Welcome to the Jungle Spring 1- Tomb Raiders	Autumn 2- World Conflict Spring 2- North America Summer 2- Viking Invasions
Make - 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	Autumn 1- A Walk in the Woods Summer 1- What Lies Beneath	Autumn 2- Groovy Greeks Spring 2- From Stone to Steel Summer 2- Our Diverse World	Autumn 1- Welcome to the Jungle Spring 1- Tomb Raiders	Autumn 2- World Conflict Spring 2- North America Summer 2- Viking Invasions
Evaluate - investigate and analyse a range of existing products	Autumn 1- A Walk in the Woods Summer 1- What Lies Beneath	Autumn 2- Groovy Greeks Spring 2- From Stone to Steel Summer 2- Our Diverse World	Autumn 1- Welcome to the Jungle Spring 1- Tomb Raiders	Autumn 2- World Conflict Spring 2- North America Summer 2- Viking Invasions

Evaluate - evaluate their ideas and products against their own design criteria and consider the views of others to improve their work	Autumn 1- A Walk in the Woods Summer 1- What Lies Beneath	Autumn 2- Groovy Greeks Spring 2- From Stone to Steel Summer 2- Our Diverse World	Autumn 1- Welcome to the Jungle Spring 1- Tomb Raiders	Autumn 2- World Conflict Spring 2- North America Summer 2- Viking Invasions
Evaluate - understand how key events and individuals in design and technology have helped shape the world	Autumn 1- A Walk in the Woods Summer 1- What Lies Beneath	Autumn 2- Groovy Greeks Spring 2- From Stone to Steel Summer 2- Our Diverse World	Autumn 1- Welcome to the Jungle Spring 1- Tomb Raiders	Autumn 2- World Conflict Spring 2- North America Summer 2- Viking Invasions
Technical knowledge - apply their understanding of how to strengthen, stiffen and reinforce more complex structures	Summer 1- What Lies Beneath		Spring 1- Tomb Raiders	
Technical knowledge - understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]		Autumn 2- Groovy Greeks		Summer 2- Viking Invasions
Technical knowledge - understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]	Autumn 1- A Walk in the Woods			Autumn 2- World Conflict
Technical knowledge - apply their understanding of computing to program, monitor and control their products	Autumn 1- A Walk in the Woods			Autumn 2- World Conflict
Cooking and Nutrition				
understand and apply the principles of a healthy and varied diet		Spring 2- From Stone to Steel	Autumn 1- Welcome to the Jungle	

prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques		Spring 2- From Stone to Steel	Autumn 1- Welcome to the Jungle	
understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.		Spring 2- From Stone to Steel	Autumn 1- Welcome to the Jungle	

KNOWLEDGE AND SKILLS LADDER	EYFS	Years 1 and 2	Years 3 and 4	Years 5 and 6
Design	<p>Construct with a purpose in mind using a variety of resources.</p> <p>Manipulate materials to create a planned effect.</p>	<p>Create and use design criteria.</p> <p>Understand the purpose for a design.</p> <p>Design mechanisms.</p> <p>Communicate their design ideas through talking, drawing, templates, mock-ups and ICT.</p>	<p>Design to criteria, creating innovative, functional, appealing products that are fit for purpose.</p> <p>Generate and communicate ideas using sketching and modelling.</p> <p>Design for a purpose through discussion, annotated sketches and diagrams.</p> <p>Establish and use a design criteria to help focus their work and develop ideas.</p> <p>Apply the principles of a healthy and varied diet through designing.</p>	<p>Apply knowledge to generate design ideas creating innovative, functional, appealing products that are fit for purpose.</p> <p>Develop and model ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>Solve problems through designing.</p>
Make	<p>Use simple tools to effect changes to materials, including one handed tools.</p> <p>To handle tools, objects, construction and malleable materials safely, effectively and with increasing control.</p> <p>Practise some appropriate safety measures without direct supervision.</p>	<p>Assemble different components to work together.</p> <p>Select appropriate materials and equipment.</p> <p>Use mechanisms (e.g. levers, sliders, wheels and axles), in their products.</p> <p>Prepare fruit and vegetables safely and hygienically.</p> <p>Prepare dishes, based on the principles of a healthy and varied diet.</p>	<p>Following and adapting recipes.</p> <p>Select appropriate materials and equipment and explaining their choices of them.</p> <p>Measure, mark, cut, shape, join and assemble accurately.</p> <p>Use more demanding practical skills (e.g. paper engineering/paper folding techniques).</p> <p>Use mechanical systems in their products (including cams and levers).</p> <p>Experiment with circuits.</p>	<p>Apply a range of cooking techniques to prepare a variety of savoury dishes, including cooking meat safely.</p> <p>Work to a given timescale.</p> <p>Make functional components.</p> <p>Select from and use a wide range of materials and equipment (including construction materials, textiles and ingredients) according to functional and aesthetic properties.</p> <p>Work with increasingly accuracy in practical task.</p> <p>Use electrical systems in their products (for example series circuits, incorporating</p>

				<p>switches, bulbs, buzzers, and motors).</p> <p>Use mechanical systems in their products (including gears, pulleys, cams, levers and linkages).</p> <p>Apply their understanding of computing to program, monitor and control their products.</p>
Evaluate	<p>Understand that good practises with regard to hygiene can contribute to good health.</p> <p>Show understanding of the need of safety when tackling new challenges, how to move and store equipment safely and consider and manage some risks.</p>	<p>Discuss the making process and the finished product.</p> <p>Testing and reflecting on a finished product.</p> <p>Adapt their design based on teacher feedback.</p> <p>Explore and evaluate a range of existing products.</p> <p>Build structures, exploring how they can be made stronger, stiffer and more stable.</p>	<p>Using the views of others to improve their designs.</p> <p>Assess how well their product works and if it matches their design.</p> <p>Evaluate as they work and adapt their design through peer and self-reflections.</p> <p>Evaluate their own and other's final product.</p> <p>Researching existing products.</p>	<p>Check accuracy of work.</p> <p>Adapt products to improve functionality.</p> <p>Researching and analyse existing products.</p> <p>Constantly evaluate progress against design.</p> <p>Compare outcomes to original design.</p>
Technical knowledge	<p>Speculate on the reasons why things happen and how things work.</p>	<p>Understand where food comes from and the principles of a healthy diet.</p> <p>Explore mechanisms (e.g. levers, sliders, wheels and axles).</p>	<p>Understand how design and technology has helped shape the world.</p> <p>Understand mechanical systems in their products (including cams and levers).</p> <p>Understand basic circuits.</p> <p>Understand the principle of a healthy diet and apply them through design choices.</p> <p>Understand seasonality of vegetables.</p>	<p>Understand how key events and individuals in design and technology have helped shape the world.</p> <p>Understand mechanical systems in their products (including gears, pulleys, cams, levers and linkages).</p> <p>Understand electrical systems (for example series circuits, incorporating switches, bulbs, buzzers, and motors).</p> <p>Have an understanding of computing to program,</p>

				<p>monitor and control their products. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>
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DT YEAR 1 and 2 AUTUMN TERM CYCLE A

Pupils will learn how to design and make a finger puppet to perform a play.

National Curriculum Objectives	Knowledge	Links to Core Values
<p>Pupils will be taught to: 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. 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. explore and evaluate a range of existing products evaluate their ideas and products against design criteria. 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.</p>	<p>Aspect of DT: Textiles</p> <p>All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs. Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future. Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's artwork can grow and develop. Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their artistic achievements. Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
<p align="center">Skills</p>		<p align="center">Key Vocabulary</p>
<p>Pupils should: Create and use design criteria. Understand the purpose for a design. Assemble different components to work together. Select appropriate materials and equipment. Discuss the making process and the finished product. Testing and reflecting on a finished product. Adapt their design based on teacher feedback. Explore and evaluate a range of existing products.</p>		<p>names of existing products, joining and finishing techniques, tools, fabrics, components, template, pattern pieces, mark out, join, decorate, finish, features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function.</p>
<p align="center">Prior Learning</p>	<p align="center">Links to other Curriculum Areas</p>	
<p>In EYFS, pupils would have learnt to: Construct with a purpose in mind using a variety of resources. Manipulate materials to create a planned effect. Use simple tools to effect changes to materials, including one handed tools. To handle tools, objects, construction and malleable materials safely, effectively and with increasing control. Practise some appropriate safety measures without direct supervision.</p>	<p align="center">Key Questions</p> <p>What sort of puppet shall I make? Who is it for and what is it for? How can I make sure it fits my hand or finger? Which joining technique will work best for my puppet? What media and materials will I use? How will I add the features? What shall I do first? What tools and techniques will I use? What fabrics shall I use? Will the puppet meet the needs of the user and achieve its purpose?</p>	<p>Spoken language- Ask relevant questions to build understanding, knowledge and their vocabulary. Listen and respond to adults.</p> <p>Art and design- drawing. Maths- measurement. Science- everyday materials.</p> <p align="center">Future Learning</p> <p>In LKS2, pupils will develop their textile skills to create a functional purse.</p>

DT YEAR 1 and 2 SPRING TERM CYCLE A

Pupils will learn how to design, make and evaluate a fruit snack for a class picnic.

National Curriculum Objectives	Knowledge	Links to Core Values
<p>Pupils will be taught to: 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. 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. explore and evaluate a range of existing products evaluate their ideas and products against design criteria. 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.</p>	<p>Aspect of DT: Food</p> <p>All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs. Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future. Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's artwork can grow and develop. Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements. Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
<p align="center">Skills</p> <p>Create and use design criteria. Understand the purpose for a design. Communicate their design ideas through talking, drawing, templates, mock-ups and ICT. Select appropriate materials and equipment. Prepare fruit and vegetables safely and hygienically. Prepare dishes, based on the principles of a healthy and varied diet. Discuss the making process and the finished product. Testing and reflecting on a finished product. Adapt their design based on teacher feedback. Explore and evaluate a range of existing products. Understand where food comes from and the principles of a healthy diet</p>	<p align="center">Key Questions</p>	<p align="center">Key Vocabulary</p> <p>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, planning, investigating tasting, arranging, popular, design, evaluate, criteria.</p> <p align="center">Links to other Curriculum Areas</p> <p>PSHE- Jigsaw- Healthy Eating. Spoken language- asking questions to check understanding, gaining technical and sensory vocabulary, use the correct terminology for food processes and equipment. Writing- instructions, a simple account. Art- drawing skills. Science- plants/a balanced diet.</p>
<p align="center">Prior Learning</p> <p>Show understanding of the need of safety when tackling new challenges, how to move and store equipment safely and consider and manage some risks.</p>	<p>What sort of fruit product shall I make? Who will it be for? Which fruit will I put into my salad? Will my product appeal to my intended user?How will I process my fruit? How will different food processes create different effects? What tools and food processing skills will I use? What order will I work in? How will I present my fruit snack? Do I need to adjust or change anything?</p>	<p align="center">Future Learning</p> <p>In LKS2, pupils will develop their food expertise to create a bread based product to hold a lunchtime snack.</p>

DT YEAR 1 and 2 SUMMER TERM CYCLE A

Pupils will design, create and evaluate a small wheeled trolley that will carry tools to use in the school garden.

National Curriculum Objectives	Knowledge	Links to Core Values
<ul style="list-style-type: none"> 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. 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. explore and evaluate a range of existing products evaluate their ideas and products against design criteria. 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. 	<p>Aspect of DT: Mechanisms</p> <p>All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs.</p> <p>Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future.</p> <p>Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's artwork can grow and develop.</p> <p>Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements.</p> <p>Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
Skills	Key Questions	Key Vocabulary
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> Create and use design criteria. Understand the purpose for a design. Design mechanisms. Communicate their design ideas through talking, drawing, templates, mock-ups and ICT. Assemble different components to work together. Select appropriate materials and equipment. Use mechanisms (e.g. levers, sliders, wheels and axles), in their products. Discuss the making and the finished product. Testing and reflecting on a finished product. Adapt their design based on teacher feedback. Explore and evaluate a range of existing products. Explore mechanisms (e.g. levers, sliders, wheels and axles). 	<p>How many wheels will it need? What type of wheels will be best? What does it need to carry? Should there be sections for different items? How big does each section need to be? Do we want to pull or push it? Which way moves best? How could it be appealing as well as functional? What tools, resources and materials will we need? What will I do if something does not work as planned? How will I check the trolley is fit for the user and for its purpose as I make it? What do I think about my final product?</p>	<p>vehicle, wheel, axle, axle holder, chassis, body, cab, assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism, names of tools, equipment and materials used, design, make, evaluate, purpose, user, criteria, functional</p> <hr/> <p align="center">Links to other Curriculum Areas</p> <p>Science- working scientifically English- spoken language</p> <hr/> <p align="center">Future Learning</p>
Prior Learning		<p>In LKS2, pupils will develop their mechanism skills to create a Christmas card that uses levers and linkages.</p>

DT YEAR 1 and 2 AUTUMN TERM CYCLE B

Pupils will learn to design, make and evaluate a moving storyboard to retell a fairy tale to the class

National Curriculum Objectives	Knowledge	Links to Core Values
<p>Pupils will be taught to:</p> <ul style="list-style-type: none"> 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. 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. explore and evaluate a range of existing products evaluate their ideas and products against design criteria. 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 	<p>Aspect of DT: Mechanisms</p> <p>All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs.</p> <p>Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future.</p> <p>Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's artwork can grow and develop.</p> <p>Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements.</p> <p>Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
Skills	Key Questions	Key Vocabulary
<p>Create and use design criteria. Understand the purpose for a design. Design mechanisms. Communicate their design ideas through talking, drawing, templates, mock-ups and ICT. Assemble different components to work together. Select appropriate materials and equipment. Use mechanisms (e.g. levers, sliders, wheels and axles), in their products. Discuss the making process and the finished product. Testing and reflecting on a finished product. Adapt their design based on teacher feedback. Explore and evaluate a range of existing products. Explore mechanisms (e.g. levers, sliders, wheels and axles).</p>	<p>Who is the storyboard for? How will we use it? What will make it successful? What will be in each scene? What could move? What captions will we use? Should we use a lever or a slider for each scene? How will I draw and finish the pictures? Am I working on my own or with others? What is the first thing I/we need to do? How well am I doing? Are the mechanisms working in the storyboard?</p>	<p>slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push up, down, straight, curve, forwards, backwards, design, make, evaluate, user, purpose, ideas, design criteria, product, function.</p>
<p align="center">Prior Learning</p>		<p align="center">Links to other Curriculum Areas</p> <p>English-spoken language/becoming familiar with fairy tales and traditional tales. Maths- position, direction and movement. Art and design- use of colour, pattern, line and shape.</p> <p align="center">Future Learning</p> <p>In LKS2, pupils will develop their mechanism skills to create a Christmas card that uses levers and linkages.</p>
<ul style="list-style-type: none"> Practise some appropriate safety measures without direct supervision. 		

DT YEAR 1 and 2 SUMMER TERM CYCLE B

Pupils will learn to design, make and evaluate a strong chair for Baby bear.

National Curriculum Objectives	Knowledge	Links to Core Values
<p>Pupils will be taught to: 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. 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. explore and evaluate a range of existing products evaluate their ideas and products against design criteria. 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.</p>	<p>Aspect of DT: Structures All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs. Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future. Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's artwork can grow and develop. Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements. Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
Skills	Key Questions	Key Vocabulary
<p>Pupils should learn to: Create and use design criteria. Understand the purpose for a design. Design mechanisms. Communicate their design ideas through talking, drawing, templates, mock-ups and ICT. Assemble different components to work together. Select appropriate materials and equipment. Discuss the making process and the finished product. Testing and reflecting on a finished product. Adapt their design based on teacher feedback. Explore and evaluate a range of existing products. Build structures, exploring how they can be made stronger, stiffer and more stable.</p>	<p>What sort of chair shall I make? Who is it for and what is it for? How can I make sure it is strong, stiff and stable? Which joining techniques will work best for the chair? What media, materials and kits will I use? What shall I do first? What tools and techniques will I use? What materials shall I use? Will the chair meet the needs of the user and achieve its purpose?</p>	<p>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, design, make, evaluate, user, purpose, ideas, design criteria, product, function.</p>
Prior Learning		<p align="center">Links to other Curriculum Areas</p> <p>Geography- fieldwork, observations, physical geography. English- spoken language. Maths- measurement, shapes. Science- properties of materials. Art and design- formal elements, drawing.</p>
In EYFS, pupils would have learnt to: As started above		<p align="center">Future Learning</p> <p>In LKS2, pupils will develop their knowledge of structure by creating 3D packaging to hold a gift inside.</p>

YEAR 3&4 AUTUMN TERM CYCLE 1

Pupils will learn to design, make and evaluate a personalised programmable Santa trap.

National Curriculum Objectives	Knowledge	Links to Core Values
<p>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</p> <p>generate, develop, model and communicate their ideas through computer-aided design</p> <p>accurately select from and use a wider range of understand how key events and individuals in design and technology have helped shape the world</p> <p>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <p>understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>apply their understanding of computing to program, monitor and control their products.</p>	<p>Aspect of DT: Electrical Systems</p> <p>All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs.</p> <p>Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future.</p> <p>Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's work can grow and develop.</p> <p>Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements.</p> <p>Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
Skills	Key Questions	Key Vocabulary
<p>Design to criteria, creating innovative, functional, appealing products that are fit for purpose.</p> <p>Generate and communicate ideas using sketching and modelling.</p> <p>Design for a purpose through discussion, annotated sketches and diagrams.</p> <p>Establish and use a design criteria to help focus their work and develop ideas.</p> <p>Select appropriate materials and equipment and explaining their choices of them.</p> <p>Measure, mark, cut, shape, join and assemble accurately.</p> <p>Experiment with circuits. Improve their designs.</p> <p>Assess how well their product works and if it matches their design.</p> <p>Evaluate as they work and adapt their design through peer and self-reflections.</p> <p>Evaluate their own and other's final product.</p> <p>Research existing products.</p> <p>Understand how design and technology has helped shape the world.</p> <p>Understand basic circuits.</p>	<p>What sort of Santa trap shall I make?</p> <p>What parts will it have?</p> <p>How will it appeal to the user?</p> <p>How will I control my Santa trap so that it turns on and off when I want it to?</p> <p>How will it be powered?</p> <p>What will I use as a housing to contain the parts of the product?</p> <p>Who will I work with?</p> <p>How long will it take?</p> <p>What order will I work in?</p> <p>Which solution works best?</p> <p>How shall I decorate it to make it appealing to Santa?</p> <p>Will the Santa trap meet the needs of the user and achieve its purpose?</p>	<p>series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, light emitting diode (LED), bulb, bulb holder, USB cable, wire, insulator, conductor, crocodile clip, control, programme, system, input device, output device, process, user, purpose, function, prototype, design criteria, innovative, appealing, design brief.</p>
	Future Learning	Links to other Curriculum Areas
	<p>In UKS2, pupils will continue to use the crumble controllers to create an electronic money box for a child.</p>	<p>Science- Electricity</p> <p>Computing- programming</p> <p>Art- drawing</p>

**YEAR 3&4 SUMMER TERM CYCLE 1
WHAT LIES BENEATH**

National Curriculum Objectives	Knowledge	Links to Core Values
<p>Pupils will be taught to: use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups 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 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 apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p>	<p>Aspect of DT: Structures</p> <p>Pupils will learn to design, make and evaluate packaging for a gift for a family member.</p> <p>All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs. Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future. Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's work can grow and develop. Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements. Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
Skills	Key Questions	Key Vocabulary
<p>Design to criteria, creating innovative, functional, appealing products that are fit for purpose. Generate and communicate ideas using sketching and modelling. Establish and use a design criteria to help focus their work and develop ideas. Select appropriate materials and equipment and explaining their choices of them. Measure, mark, cut, shape, join and assemble accurately. Use more demanding practical skills (e.g. paper engineering/paper folding techniques). Using the views of others to improve their designs. Assess how well their product works and if it matches their design. Evaluate as they work and adapt their design through peer and self-reflections. Evaluate their own and other's final product. Research existing products.</p>	<p>What type of shell structure shall I make? What will be the purpose of my product? How will my product appeal to my intended user? Which materials will I use to make it? Which shape will be the best for my structure? How will I stiffen and strengthen my structure? What graphics techniques will I use to achieve a desired visual effect and purpose? Will I work with someone else? How long will it take? What order will I work in? What tools, techniques and skills will I use? Do I need to adjust or change anything? Will my product meet the needs of the user?</p> <p align="center">Prior Learning</p> <p>In KS1, pupils created a strong chair to be able to hold Baby bear.</p>	<p>shell structure, three dimensional (3D), shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tab, 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.</p> <p align="center">Links to other Curriculum Areas</p> <p>Science- properties of materials Maths- Properties of Shape/measurement</p>

YEAR 3&4 AUTUMN TERM CYCLE 2

GROOVY GREEKS Pupils will learn to design, make and evaluate a Christmas card for family or friends

National Curriculum Objectives	Knowledge	Links to Core Values
<p>Pupils will be taught to: use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups 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 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</p>	<p>Aspect of DT: Mechanical systems</p> <p>All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs. Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future. Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's work can grow and develop. Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements. Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
Skills	Key Questions	Key Vocabulary
<p>Design to criteria, creating innovative, functional, appealing products that are fit for purpose. Generate and communicate ideas using sketching and modelling. Design for a purpose through discussion, annotated sketches and diagrams. Establish and use a design criteria to help focus their work and develop ideas. Select appropriate materials and equipment and explaining their choices of them. Measure, mark, cut, shape, join and assemble accurately. Use more demanding practical skills (e.g. paper engineering/paper folding techniques). Use mechanical systems in their products (including cams and levers). Using the views of others to improve their designs. Assess how well their product works and if it matches their design. Evaluate as they work and adapt their design through peer and self-reflections. Understand how design and technology has helped shape the world. Understand mechanical systems in their products (including cams and levers).</p>	<p>What sort of Christmas card shall I make and who will it be for? What part will move? How will it appeal to the user? How will it move? Which lever and linkage mechanism will work best for my Christmas card? What media and materials will I use? Who will I work with? How long will it take? What order will I work in? What tools and techniques will I use? Will the Christmas card meet the needs of the user and achieve its purpose?</p>	<p>mechanism, lever, linkage, pivot, slot, bridge, guide, system, input, process, output, linear, rotary, oscillating, reciprocating, user, purpose, function, prototype, design criteria, innovative, appealing, design brief.</p>
	Prior Learning	Links to other Curriculum Areas
	<p>In KS1, pupils created a small wheeled trolley that carried tools to use in the school garden.</p>	<p>Maths- position and direction/measurement Art and design- drawing</p>

YEAR 3&4 SPRING TERM CYCLE 2

Pupils will be taught to design, make and evaluate a bread based product with a filling (which includes vegetables) for lunch.

National Curriculum Objectives	Knowledge	Links to Core Values
<p>Pupils will be taught to:</p> <ul style="list-style-type: none"> 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 select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], 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. 	<p>Aspect of DT: Food</p> <p>All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs.</p> <p>Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future.</p> <p>Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's work can grow and develop.</p> <p>Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements.</p> <p>Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
Skills	Key Questions	Key Vocabulary
<ul style="list-style-type: none"> Establish and use a design criteria to help focus their work and develop ideas. Apply the principles of a healthy and varied diet through designing. Follow and adapt recipes. Select appropriate materials and equipment and explaining their choices of them. Measure, mark, cut, shape, join and assemble accurately. Using the views of others to improve their designs. Assess how well their product works and if it matches their design. Evaluate as they work and adapt their design through peer and self-reflections. Understand how design and technology has helped shape the world. Understand the principle of a healthy diet and apply them through design choices. Understand seasonality of vegetables. 	<ul style="list-style-type: none"> Who am I making the food product for? How can I make it appealing for the range of users? What kind of food product shall I make that can be carried easily? What ingredients could it contain? How will I make sure it looks appealing as well as tastes and smells good? What techniques will I use to prepare the ingredients and what equipment do I need? How long will it take? What order will I work in? Has the snack met the needs of the user and achieved its purpose? <p align="center">Prior Learning</p> <p>In KS1, pupils would have created a fruit snack for a class picnic.</p>	<p>names 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, planning, design criteria, user, annotated sketch, sensory evaluations.</p> <p align="center">Links to other Curriculum Areas</p> <p>History/Geography- Farming, land uses/development Science- Animals including Humans Art and design- drawing English- Writing- new vocabulary</p>

YEAR 3&4 SUMMER TERM CYCLE 2

Pupils will learn to design, make and evaluate a holder/purse/wallet for a friend or relative.

National Curriculum Objectives	Knowledge	Links to Core Values
<p>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</p> <p>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, patterned pieces</p> <p>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing],</p> <p>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</p> <p>investigate and analyse a range of existing products</p> <p>evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p>	<p>Aspect of DT: Textiles</p> <p>All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs.</p> <p>Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future.</p> <p>Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's artwork can grow and develop.</p> <p>Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements.</p> <p>Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
Skills	Key Questions	Key Vocabulary
<p>Design for a purpose through discussion, annotated sketches and diagrams.</p> <p>Establish and use a design criteria to help focus their work and develop ideas.</p> <p>Select appropriate materials and equipment and explaining their choices of them.</p> <p>Measure, mark, cut, shape, join and assemble accurately.</p> <p>Use more demanding practical skills (e.g. paper engineering/paper folding techniques).</p> <p>Using the views of others to improve their designs.</p> <p>Assess how well their product works and if it matches their design.</p> <p>Evaluate as they work and adapt their design through peer and self-reflections</p>	<p>Who is it for?</p> <p>What will it hold? e.g. phone, money, plastic cards, pencils.</p> <p>What shape will the holder be?</p> <p>How will it fasten?</p> <p>What fabric should I use?</p> <p>Which joining techniques would be the best for the fabric and pattern?</p> <p>How can I make my holder aesthetically pleasing for the user? How long will it take to make?</p> <p>What tools will I need?</p> <p>What order should I do it in?</p> <p>What isn't working very well?</p> <p>What could I improve on?</p> <p>Will my holder/purse/wallet fulfil its function?</p> <p>Is it suitable for the user?</p>	<p>fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance, user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces.</p>
Prior Learning	Future Learning	Links to other Curriculum Areas
<p>In KS1 pupils created a puppet to perform a play.</p>	<p>In UKS2, pupils will create bunting based on the World Wars.</p>	<p>Science- Properties of materials Art and design- drawing Maths- measurement</p>

YEAR 5&6 AUTUMN TERM CYCLE 1

WELCOME TO THE JUNGLE To design, make and evaluate a yeast based snack for parents and pupils at an event.

National Curriculum Objectives	Knowledge	Links to Core Values
<p>Pupils will be taught to: use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, 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.</p>	<p>Aspect of DT: Cooking</p> <p>All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs. Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future. Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's work can grow and develop. Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements. Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
Skills	Key Questions	Key Vocabulary
<p>Pupils will learn to: Apply knowledge to generate design ideas creating innovative, functional, appealing products that are fit for purpose. Develop and model ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Solve problems through designing. Apply a range of cooking techniques to prepare a variety of savoury dishes. Work to a given timescale. Select from and use a wide range of materials and equipment (including construction materials, textiles and ingredients) according to functional and aesthetic properties. Work with increasingly accuracy in practical task. Check accuracy of work. Adapt products to improve functionality. Researching and analyse existing products. Constantly evaluate progress against design. Compare outcomes to original design. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>	<p>Who am I making the snack for? What is it for? How can I make it appealing for the range of users? What kind of snack shall I make? What ingredients could it contain? How could it be innovative? Where will the snack be served/eaten? What techniques will I use and what equipment do I need? What order will I work in? How long will it take? Has the snack met the needs of the user and achieved its purpose?</p>	<p>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, shape, sprinkle, crumble, design specification, innovative, research, evaluate, design brief.</p>
	Prior Learning	Links to other Curriculum Areas
	<p>In LKS2, pupils created a bread based product with a filling for lunch.</p>	<p>Geography- distribution to natural resources (food). Science- Properties of Materials/Changes of State. Maths- Measurement/Conversion.</p>

YEAR 5&6 SPRING TERM CYCLE 1

TOMB RAIDERS To design, make and evaluate a small-scale bird hide for children to use in the school wildlife area.

National Curriculum Objectives	Knowledge	Links to Core Values
<p>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</p> <p>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing],</p> <p>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</p> <p>investigate and analyse a range of existing products</p> <p>evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p>	<p>Aspect of DT: Structure</p> <p>All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs.</p> <p>Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future.</p> <p>Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's work can grow and develop.</p> <p>Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements.</p> <p>Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
Skills	Key Questions	Key Vocabulary
<p>Apply knowledge to generate design ideas creating innovative, functional, appealing products that are fit for purpose.</p> <p>Develop and model ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Solve problems through designing.</p> <p>Work to a given timescale. Make functional components.</p> <p>Select from and use a wide range of materials and equipment according to functional and aesthetic properties.</p> <p>Work with increasingly accuracy in practical task.</p> <p>Check accuracy of work.</p> <p>Adapt products to improve functionality.</p> <p>Researching and analyse existing products.</p> <p>Constantly evaluate progress against design.</p> <p>Compare outcomes to original design.</p> <p>Understand how key events and individuals in design and technology have helped shape the world.</p>	<p>What type of structure shall I make?</p> <p>What will be its purpose?</p> <p>Who will use it?</p> <p>Which will be the best shape for my pyramid?</p> <p>What features will it have?</p> <p>Which materials will I use to make it?</p> <p>What tools and materials will I need?</p> <p>What order will I work in?</p> <p>Will I work with someone?</p> <p>What constraints I am working to?</p> <p>Do I need to change anything?</p> <p>Will my product meet the needs of the user?</p>	<p>structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional.</p>
	Prior Learning	Links to other Curriculum Areas
	<p>In LKS2, pupils made packaging for a gift to a friend or family member.</p>	<p>Maths- Shape and measurement.</p> <p>Science- Properties of materials.</p>

YEAR 5&6 AUTUMN TERM CYCLE 2

WORLD CONFLICT To design, make and evaluate an eclectic toy moneybox for a child (using Crumble Controllers).

National Curriculum Objectives	Knowledge	Links to Core Values
<p>Pupils will be taught to: use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design understand how key events and individuals in design and technology have helped shape the world 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.</p>	<p>Aspect of DT: Electronic Systems</p> <p>All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs. Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future. Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's work can grow and develop. Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements. Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
Skills	Key Questions	Key Vocabulary
<p>Solve problems through designing. Work to a given timescale. Make functional components. Select from and use a wide range of materials and equipment (including construction materials, textiles and ingredients) according to functional and aesthetic properties. Work with increasingly accuracy in practical task. 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. Understand how key events and individuals in design and technology have helped shape the world. Understand mechanical systems in their products (including gears, pulleys, cams, levers and linkages). Understand electrical systems (for example series circuits, incorporating switches, bulbs, buzzers, and motors). Have an understanding of computing to program, monitor and control their products.</p>	<p>Who will my moneybox be for? How will it motivate the user to save money? How might it be programmed? What components will it need? Which switches or sensors should I use? What output devices should I use? What tools and components will I need? What sequence of steps will I use? How will computer control improve my moneybox? Will the electronic moneybox achieve its purpose?</p> <p align="center">Prior Learning</p> <p>In LKS2, pupils were introduced to the crumble controllers where they learnt to create a Santa trap.</p>	<p>reed switch, toggle switch, push-to-make switch, push-to-break switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device, series circuit, parallel circuit, function, innovative, design specification, design brief, user, purpose.</p> <p align="center">Links to other Curriculum Areas</p> <p>Computing- Coding Science- Electricity</p>

**YEAR 5&6 SPRING TERM CYCLE 2
NORTH AMERICA**

National Curriculum Objectives	Knowledge	Links to Core Values
<p>Pupils will be taught to: use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, pattern pieces 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</p>	<p>Aspect of DT: Textiles</p> <p>Pupils will learn to design, make and evaluate a purse to hold money inside.</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs. Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future. Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's work can grow and develop. Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements. Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
Skills	Key Questions	Key Vocabulary
<p>Apply knowledge to generate design ideas creating innovative, functional, appealing products that are fit for purpose. Develop and model ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Solve problems through designing. Work to a given timescale. Make functional components. Select from and use a wide range of materials and equipment (including construction materials, textiles and ingredients) according to functional and aesthetic properties. Work with increasingly accuracy in practical task. Check accuracy of work. Adapt products to improve functionality. Researching and analyse existing products. Constantly evaluate progress against design. Compare outcomes to original design. Understand how key events and individuals in design and technology have helped shape the world</p>	<p>What are the features of a successful product? What features do I need to include in a functional, innovative and authentic product? What knowledge and skills do I need to be able to design and make a good quality product? How do I make a paper pattern for the product I want to produce? What design decisions do I need to make? How can I communicate my ideas for my product in an effective way? How will I show innovation? Who will be the user of my product and what are their needs, wants and values? What will be the purpose of my product? Does my product meet the needs and wants of the user? Is it appealing and does it fulfil a purpose? Is it innovative?</p>	<p>seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shear, fastenings, iron transfer paper, design criteria, annotate, design decisions, functionality, innovation, authentic, authentic, user, purpose, evaluate, mock-up, prototype.</p>
	<p>Prior Learning</p>	<p>Links to other Curriculum Areas</p>
	<p>In LKS2, pupils created a purse/wallet for a family member.</p>	<p>Science- working scientifically/Properties of materials History- World War 1 and 2</p>

**EAR 5&6 SUMMER TERM CYCLE 2
VIKING INVASIONS**

National Curriculum Objectives	Knowledge	Links to Core Values
<p>Pupils will be taught to: use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design 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 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</p>	<p>Aspect of DT: Mechanisms</p> <p>Pupils will learn to design, make and evaluate a new toy vehicle for children in a particular age range.</p> <p>All knowledge is laid out in the progression documentation found on DT –Projects on a page</p>	<p>Deep thinking- Pupils reflect on their work and use their previous knowledge and learning of skills to create their own original designs. Risk takers- Pupils take risks by developing ideas and using a range of tools. They can articulate whether these risks were successful or not, and whether they would repeat them again in the future. Team builders- Pupils share and listen to each other's ideas. They can express their opinions in a safe space. Pupils comment and assess each other's work, providing meaningful feedback so other's work can grow and develop. Go Getters- Pupils try new ideas and persevere when things get tricky. They can discuss their achievements. Community makers- Pupils respect each other's differences and individual artistic choices. They respectfully listen to each other's ideas and opinions and are careful with the constructive feedback that they provide each other.</p>
Skills	Key Questions	Key Vocabulary
<p>Apply knowledge to generate design ideas creating innovative, functional, appealing products that are fit for purpose. Develop and model ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Select from and use a wide range of materials and equipment (including construction materials, textiles and ingredients) according to functional and aesthetic properties. Adapt products to improve functionality. Researching and analyse existing products. Constantly evaluate progress against design. Compare outcomes to original design. Understand how key events and individuals in design and technology have helped shape the world</p>	<p>What type of toy vehicle shall I make? What will be its purpose? Who will use it? What electrical and mechanical components shall I use? What materials will I use to make it? How will I make it fit for purpose? How will I make the body shell for my toy vehicle? What tools and equipment will I need? What order will I work in? What constraints am I working to? Do I need to change anything? Will my product meet the needs, wants and interests of the user group?</p>	<p>seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shear, fastenings, iron transfer paper, design criteria, annotate, design decisions, functionality, innovation, authentic, authentic, user, purpose, evaluate, mock-up, prototype.</p>
	Prior Learning	Links to other Curriculum Areas
	<p>In LKS2, pupils created a Christmas Card involving linkages.</p>	<p>Science- working scientifically/Properties of materials History- World War 1 and 2</p>

<p>Understand mechanical systems in their products (including gears, pulleys, cams, levers and linkages). Understand electrical systems (for example series circuits, incorporating switches, bulbs, buzzers, and motors).</p>		
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