

Chiltern Primary School DT Long Term Plan

Together, over time, we are proud to learn to make a difference, to ourselves and others.

Our curriculum vision:

- Our Chiltern community celebrates differences and diversity within a safe and nurturing environment.
- A curriculum, which engages and enriches.
- Has ambition for ALL moving all from novice to expert.

What does this look like within DT?

- *Diversity*. Using creativity and originality, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own or others' needs, values.
- *Enrichment* Offering wide opportunities for broadening their experiences of DT in the wider world and to equip them with skills for the future.
- *Ambition* Acquire a broad range of subject knowledge (Mathematics, Science, Engineering, Computing and Art) and learning to take risks, becoming resourceful, innovative and capable citizens. Each child will know that their DT has meaning and will confidently create high-quality products, demonstrating increasingly complex knowledge and skills.

Design and Technology Skills for ALL Children at Chiltern.

ALL children will leave Chiltern Primary School with *three main skills*:

Experimenting with design from a wide range of cultures and disciplines

Using DT techniques to broaden their knowledge of Design and Technology

Reflection and evaluative communication ensure the creation of high-quality products



What we want a designer at Chiltern to achieve:

We follow the National Curriculum by incorporating DT skills with areas of experience, for e.g. Mechanical systems/Pneumatics.

We have a strong focus on the use of DT vocabulary which will enable our children to communicate their opinions about their own work and work of others.

We are inspired by different designers and technological advances to create their own interpretation.

It is the intent of Chiltern Primary School for Design Technology to be taught in all year groups through at least one topic per term, which includes one topic relating to food. Design Technology projects are often made cross curricular - linking to other subjects taught

Key

- Year 6
- Year 5
- Year 4
- Year 3
- Year 2
- Year 1
- Reception

Areas of experiences/ techniques

- Food, nutrition
- Structures
- Mechanical systems
- Electrical circuits
- Textiles

BOLD RED IS A NON-NEGOTIABLE SKILL.

BOLD BLACK IS A NON-NEGOTIABLE OBJECTIVE

DT at Chiltern

Chiltern end-of-unit statements

National Curriculum statements

Links to prior learning

Reception	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	The development of children's artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their understanding, self-expression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to and observe.					
Vocabulary	planning, investigating design, make, user, purpose, ideas, product, use simple utensils, tools, equipment, Perform, peel, cut, slice, squeeze, grate, chop, safety, marking out, cutting, sticking, junk modelling, joining and finishing, paper, card, 2D/3D shapes, properties, ingredients, material, fabric, experiment, explore, floating, sinking, playdough, tape, pouring, blending					

Understanding the world

Children in Reception will show curiosity about objects, events and people, question why things happen and engage in open-ended activity, They will think of ideas, find ways to solve problems and new ways to do things. Children will test their ideas, use their senses to explore the world around them and create simple representations of events, people and objects.

Children make and adapt models through various projects and in the moment planning. Over the year they will use a range of materials such as clay, Modroc and natural resources. The children will learn through first-hand experiences. They will be encouraged to explore, observe, solve problems, think critically, make decisions and to talk about why they have made their decisions.

The DT learning experiences that children at Chiltern will have are:

Constructing: Learning to construct with a purpose in mind, (for example: using scissors, glue, string, a hole punch etc.).

Using a range of tools: Through this, the children will learn about planning and adapting initial ideas to make them better. For example, a child might choose to use scissors, a stapler, elastic bands and glue to join bits together to make a toy vehicle. But they might then modify their initial idea by using masking tape.

Cooking techniques: practising stirring, mixing, pouring and blending ingredients during cookery activities.

Exploration: Children will dismantle things and learn about how everyday objects work. For example, a child might dismantle a pepper grinder and discover how it is put together and the materials different parts are made of.

Discussion: The children will be given opportunities to discuss reasons that make activities safe or unsafe, for example hygiene, electrical awareness, and appropriate use of senses when tasting different flavourings. They will also learn to record their experiences by, for example, drawing, writing and making a tape or model.

Year 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2			
Links to Prior Learning	(ELG) Creating with Materials Children at the expected level of development will: <ul style="list-style-type: none"> - 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. 								
Vocabulary		Bauble, decoration, Christmas, material, fabric, scissors, felt, safety, thread, needle, sewing, stitching, sew, cut, button, glue, stitch, design, make, evaluate		Healthy, Unhealthy, Fruit Vegetables, Balanced, diet, Carbohydrate, Dairy Portion, Fillings, Plants/animals, Grown/caught, Farmed, Travel, Packaged, Hygiene, Taste, White/brown, granary bread, Fillings, Carbohydrate, Protein, Dairy, Portion, Evaluate Explain, Describe Ingredients, Taste Texture, Appearance, Smell Design	Features, equipment, tools, safety, design, joining, evaluate/explain, combine, cutting, shaping, finishing, materials, textiles, assemble				
(NC Statements) At Chiltern we believe design and technology provides a natural opportunity for all		Term 2 Structures	Making a decoration		Term 4 Food	Designing and making sandwiches	Term 5 Structures	Designing and Making a Paper Bag House	

<p>children to practise and improve basic skills such as spoken language, English and mathematics. When communicating with EYFS and Year 1 -KS1 children, we will always look for opportunities to notice and discuss materials around them – utensils in the role-play areas, tree barks in the adventure playground, soft furnishings in the book corners, etc.</p>	<p><u>Cutting, shaping, joining- Christmas card- RE linked</u></p> <p>I can explore different decorations I can find out about and research decorations. I can make a Christmas decoration/card/chain. I can make and design a decoration following design criteria.</p> <p><u>Design:</u> Have own ideas. Explain what I want to do. Explain what my product is for, and how it will work. Use pictures and words to plan, begin to use models. Design a product for myself following design criteria. Research similar existing products.</p> <p><u>Make:</u> Explain what I'm making and why. Consider what I need to do next. Select tools/equipment to cut, shape, join, finish and explain choices. Measure, mark out, cut and shape, with support. Choose suitable materials and explain choices. Try to use finishing techniques to make product look good. Work in a safe and hygienic manner.</p> <p><u>Evaluate:</u> Talk about my work, linking it to what I was asked to do. Talk about existing products considering: use, materials, how they work, audience, where they might be used.</p>	<p><u>Linked to English- instructions</u></p> <p>I know which foods are healthy and unhealthy. I understand where food comes from. I know what we could use to make a healthy sandwich. I can explain what my sandwich tasted like (using adjectives). I can make a sandwich. I can design and make a healthy sandwich.</p> <p><u>Food and nutrition:</u> Describe textures. Wash hands & clean surfaces. Think of interesting ways to decorate food. Say where some foods come from, (i.e. plant or animal). Describe differences between some food groups (i.e. sweet, vegetable etc.). Discuss how fruit and vegetables are healthy. Cut, peel and grate safely, with support.</p>	<p><u>History linked</u></p> <p>I know different types of houses. I can adapt my sketch to design a house. I know which materials I will select to add the features of my paper bag house. I can make a paper bag house. I can evaluate and communicate my ideas about my paper bag house.</p> <p><u>Design</u> Have own ideas. Explain what I want to do. Explain what my product is for, and how it will work. Use pictures and words to plan, begin to use models. Design a product for myself following design criteria. Research similar existing products.</p> <p><u>Make:</u> Explain what I'm making and why. Consider what I need to do next. Select tools/equipment to cut, shape, join, finish and explain choices. Measure, mark out, cut and shape, with support. Choose suitable materials and explain choices. Try to use finishing techniques to make product look good. Work in a safe and hygienic manner.</p> <p><u>Evaluate:</u> Talk about my work, linking it to what I was asked to do.</p>
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	Talk about existing products, and say what is and isn't good. Talk about things that other people have made. Begin to talk about what could make product better.				Talk about existing products considering: use, materials, how they work, audience, where they might be used. Talk about existing products, and say what is and isn't good. Talk about things that other people have made. Begin to talk about what could make product better.	
Year 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Links to Prior Learning	<p>In KS1, through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in a 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).</p> <p>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.</p> <p>At the end of Key Stage 1, pupils should also be taught to: use the basic principles of a healthy and varied diet to prepare dishes – understand where food comes from.</p>					
Vocabulary		Christmas, celebration, decoration, occasion, baubles, design, texture, cutting, sewing, needle, scissors, techniques, stitches, fabric, evaluate	Year 1 Term 4		Zoetrope?- no wheels Hobby horse- wheels Steam Train (fire engine with axels and wheels)- old planning	

<p>(NC Statements) All of our children will develop an understanding of the design and made world through first-hand experience. Wherever possible children will be given opportunities to visit local museums, shops and restaurants and meet with designers, engineers, chefs, architects and students from college or secondary schools (face-to-face or on-line experiences).</p>			<p>Term 2 Textiles</p>	<p>Making a stocking decoration</p>	<p>Term 3 Food</p>	<p>Food fit for a queen/king</p>		<p>Term 4 Mechanical systems</p>	<p>Making a moving Victorian toy</p>		
<p>RE linked- Christmas</p> <p>I know what a decoration is and when it can be used. I can explore different decorations. I can describe different types of Christmas baubles. I can share and explain own opinions about different Christmas baubles. I can make a Christmas decoration. I can design and sew a Christmas decoration.</p> <p><u>Design</u> Have own ideas and plan what to do next. Explain what I want to do and describe how I may do it. Explain purpose of product, how it will work and how it will be suitable for the user. Describe design using pictures, words, models, diagrams, begin to use ICT. Design products for myself and others following design criteria. Choose best tools and materials, and explain choices. Use knowledge of existing products to produce ideas.</p> <p><u>Make</u> Explain what I am making and why it fits the purpose. Make suggestions as to what I need to do next. Join materials/components together in different ways</p>	<p>History linked</p> <p>I can talk about how the foods that people ate in the past are different to the present. I can explore and taste different food. I know the importance of a varied diet. I can design and make biscuits.</p> <p><u>Food and nutrition</u> Explain hygiene and keep a hygienic kitchen. Describe properties of ingredients and importance of varied diet. Say where food comes from (animal, underground etc.). Describe how food is farmed, home-grown, caught. Draw eat well plate; explain there are groups of food. Describe "five a day". Cut, peel and grate with increasing confidence.</p> <p><u>Evaluate:</u> Describe what went well, thinking about design criteria. Talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion. Evaluate how good existing products are.</p>	<p>History linked</p> <p>I can make a moving steam train. I can begin to understand how to use wheels/axles.</p> <p><u>Design</u> Have own ideas and plan what to do next. Explain what I want to do and describe how I may do it. Explain purpose of product, how it will work and how it will be suitable for the user. Describe design using pictures, words, models, diagrams, begin to use ICT. Design products for myself and others following design criteria. Choose best tools and materials, and explain choices</p>									

	<p>Measure, mark out, cut and shape materials and components, with support.</p> <p><u>Describe which tools I'm using and why.</u></p> <p>Choose suitable materials and explain choices depending on characteristics.</p> <p>Use finishing techniques to make product look good.</p> <p>Work safely and hygienically.</p> <p><u>Evaluate:</u></p> <p>Describe what went well, thinking about design criteria.</p> <p>Talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion.</p> <p>Evaluate how good existing products are.</p> <p>Talk about what I would do differently if I were to do it again and why.</p> <p><u>Technical language:</u></p> <p>Measure textiles</p> <p>Join textiles together to make a product, and explain how I did it.</p> <p>Carefully cut textiles to produce accurate pieces.</p> <p>Explain choices of textile.</p> <p>Understand that a 3D textile structure can be made from two identical fabric shapes.</p>	<p>Talk about what I would do differently if I were to do it again and why.</p>	<p>Use knowledge of existing products to produce ideas.</p> <p><u>Make</u></p> <p>Explain what I am making and why it fits the purpose.</p> <p>Make suggestions as to what I need to do next.</p> <p>Join materials/components together in different ways</p> <p>Measure, mark out, cut and shape materials and components, with support.</p> <p><u>Describe which tools I'm using and why.</u></p> <p>Choose suitable materials and explain choices depending on characteristics.</p> <p>Use finishing techniques to make product look good.</p> <p>Work safely and hygienically.</p> <p><u>Evaluate:</u></p> <p>Describe what went well, thinking about design criteria.</p> <p>Talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion.</p>	
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										Evaluate how good existing products are. Talk about what I would do differently if I were to do it again and why. <u>Technical language:</u> Use levers or slides. Begin to understand how to use wheels and axles.	
Year 3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2					
Links to Prior Learning		Year 2 Term 2	Year 1 Term 2, 5		Year 2 Term 4						
Vocabulary		Needle felting, wool roving, foam, layers, foreground, background, landscape, colours, path, material	Anglo-Saxon, house,		Climate, rainforest, vegetation, tropical, species, animals, toucan, Amazon, cardboard, glue, scissors, hole puncher, markers, construction paper/tissue paper, googly eyes, brass fasteners, rubber bands, pipe cleaners, design mechanism, testing,						
(NC Statements) DT helps our children to develop a range of creative and practical skills using their own imagination and creativity. Children can take risks, be creative and resourceful, and understand the impact of design and		Term 2 Textiles	Felting a landscape	Term 3 Structures	Making an Anglo-Saxon house			Term 5 Mechanical systems	Moving a rainforest animal		
	Geography linked (Mapping) https://www.cutoutandkeep.net/projects/needle-felt-a-landscape I can sort items by material and colour.		History linked I know the features of an Anglo-Saxon house. I can make a miniature 3D Anglo-Saxon house. <u>Design</u>			Geography linked https://www.youtube.com/watch?v=OJbtFdJtyMA I know what a pivot is. I can use tools and equipment safely.					

<p>technology on their daily life and wider society.</p>	<p>I can use felt to create paths and environment. I can manipulate the felt when creating a landscape. I can use wool and felting needles to create a landscape. <u>Design</u> Begin to research others' needs. Show design meets a range of requirements. Describe purpose of product. Follow a given design criteria. Have at least one idea about how to create product. Create a plan which shows order, equipment and tools. Describe design using an accurately labelled sketch and words. Make design decisions. Explain how product will work. Make a prototype. Begin to use computers to show design. <u>Make</u> Select suitable tools/equipment, explain choices; begin to use them accurately. Select appropriate materials, fit for purpose. Work through plan in order. Consider how good product will be. Begin to measure, mark out, cut and shape materials/components with some accuracy. Begin to assemble, join and combine materials and components with some accuracy. Begin to apply a range of finishing techniques.</p>	<p>Begin to research others' needs. Show design meets a range of requirements. Describe purpose of product. Follow a given design criteria. Have at least one idea about how to create product. Create a plan which shows order, equipment and tools. Describe design using an accurately labelled sketch and words. Make design decisions. Explain how product will work. Make a prototype. Begin to use computers to show design. <u>Make</u> Select suitable tools/equipment, explain choices; begin to use them accurately. Select appropriate materials, fit for purpose. Work through plan in order. Consider how good product will be. Begin to measure, mark out, cut and shape materials/components with some accuracy. Begin to assemble, join and combine materials and components with some accuracy. Begin to apply a range of finishing techniques. <u>Evaluate</u> Look at design criteria while designing and making.</p>	<p>I can select appropriate equipment and materials to create my design. I can make a cardboard moving toucan. I can test my mechanism. <u>Design</u> Begin to research others' needs. Show design meets a range of requirements. Describe purpose of product. Follow a given design criteria. Have at least one idea about how to create product. Create a plan which shows order, equipment and tools. Describe design using an accurately labelled sketch and words. Make design decisions. Explain how product will work. Make a prototype. Begin to use computers to show design. <u>Make</u> Select suitable tools/equipment, explain choices; begin to use them accurately. Select appropriate materials, fit for purpose. Work through plan in order. Consider how good product will be. Begin to measure, mark out, cut and shape materials/components with some accuracy. Begin to assemble, join and combine materials and components with some accuracy. Begin to apply a range of finishing techniques.</p>
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	<p><u>Evaluate</u> Look at design criteria while designing and making. Use design criteria to evaluate finished product. Say what I would change to make design better. Begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose. Begin to understand by whom, when and where products were designed. Learn about some inventors/designers/ engineers/chefs/ manufacturers of ground-breaking products.</p> <p><u>Technical language</u> Join different textiles in different ways. Choose textiles considering appearance and functionality. Begin to understand that a simple fabric shape can be used to make a 3D textiles project.</p>		<p>Use design criteria to evaluate finished product. Say what I would change to make design better. Begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose. Begin to understand by whom, when and where products were designed. Learn about some inventors/designers/ engineers/chefs/ manufacturers of ground-breaking products.</p> <p><u>Technical language</u> Use appropriate materials. Work accurately to make cuts and holes. Join materials. Begin to make strong structures.</p>		<p><u>Evaluate</u> Look at design criteria while designing and making. Use design criteria to evaluate finished product. Say what I would change to make design better. Begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose. Begin to understand by whom, when and where products were designed. Learn about some inventors/designers/ engineers/chefs/ manufacturers of ground-breaking products.</p> <p><u>Technical language</u> Select appropriate tools / techniques. Alter product after checking, to make it better. Begin to try new/different ideas. Use simple lever and linkages to create movement.</p>	
Year 4	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Links to Prior Learning			Year 2 Term 3, Year 1 Term 4	Year 3 Term 5, Year 2 Term 4		
Vocabulary			Chocolate, flavours, companies, wrapper, colour, style, pattern, packaging, ingredients, vegan, lactose-free, allergies, diet friendly, calories, cocoa, nibs, caramel, coffee, milk, honeycomb, organic,	Storybook, paper, card, scissors, glue, paper clips, split-pins, craft knives, rulers, staplers, paper clips, split-pins, masking tape, sticky tape, glue, investigate, research, font, size, graphics,		Circuits, electrics, power, batteries, bulbs/buzzers, wires, rubber, paperclips, pencil, teaspoon, coin, paper, teabag, pen, e, crocodile clips, motors

<p>(NC Statements) At Chiltern we have the ambition to develop children's DT skills through cooking, woodworking, product design, and more. We are also encouraging all children, including our most vulnerable groups, to take these skills outside of the classroom and apply them to a range of different contexts, such as: at home, in the garden, In the local community, in the industry, in the playground, in the wider world and environment.</p>					<p>Term 3 Food</p>	<p>Design and make a chocolate bar</p>	<p>Term 4 Mechanical systems</p>	<p>Pop-up story book</p>		<p>Term 6 Electrical circuits</p>	<p>Light up lamp</p>
<p>English-instructions linked <u>Technical language</u> I can explore the origins of the cocoa bean. I can explore what happens to a cocoa pod once it is harvested, and how it is turned into a chocolate product. I can evaluate my ideas and products against my own design criteria and consider the views of others to improve my work. I know what a balanced diet consists of. I can create, develop, model and communicate my ideas through discussion, annotated sketches. I can design and make my own chocolate bar, based on a chosen design criteria.</p> <p><u>Food and nutrition</u></p> <p>English/Science linked I can investigate and evaluate products with lever and linkage systems. I can explore and experiment with a range of different fonts and graphic techniques. I know how to make a moving mechanism using card or paper. I can plan and design a storybook. I can evaluate a finished product.</p> <p><u>Design</u> Use research for design ideas. Show design meets a range of requirements and is fit for purpose. Begin to create own design criteria. Have at least one idea about how to create</p> <p>History/Science linked I can investigate circuits and their different components. I know the differences between mains and battery powered circuits. I can recognise some common conductors and insulators, and associate metals with being good conductors. I can use knowledge of conductors and insulators to create switches to complete a circuit and light up a lamp. I can carry out an experiment to see how to change the brightness of a bulb/lamp. I can evaluate my work.</p> <p><u>Design</u> Use research for design ideas. Show design meets a range of requirements and is fit for purpose. Begin to create own design criteria. Have at least one idea about how to create product and suggest improvements for design. Produce a plan and explain it to others. Say how realistic plan is. Include an annotated sketch.</p> <p><u>Make</u> Select suitable tools and equipment, explain choices in relation to required techniques and use accurately. Select appropriate materials, fit for purpose; explain choices. Work through plan in order. Realise if product is going to be good quality.</p>											

			<p>Explain how to be safe/hygienic. Think about presenting product in interesting/attractive ways. Understand ingredients can be fresh, pre-cooked or processed. Begin to understand about food being grown, reared or caught in the UK or wider world. Describe eat well plate and how a healthy diet=variety / balance of food and drinks. Explain importance of food and drink for active, healthy bodies. Prepare and cook some dishes safely and hygienically. Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p>	<p>product and suggest improvements for design. Produce a plan and explain it to others. Say how realistic plan is. Include an annotated sketch. <u>Make</u> Select suitable tools and equipment, explain choices in relation to required techniques and use accurately. Select appropriate materials, fit for purpose: explain choices. Work through plan in order. Realise if product is going to be good quality. Measure, mark out, cut and shape materials/components with some accuracy. Assemble, join and combine materials and components with some accuracy. Apply a range of finishing techniques with some accuracy. <u>Evaluate</u></p>	<p>Measure, mark out, cut and shape materials/components with some accuracy. Assemble, join and combine materials and components with some accuracy. Apply a range of finishing techniques with some accuracy. <u>Evaluate</u> Refer to design criteria while designing and making. Use criteria to evaluate product. Begin to explain how I could improve original design. Evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose. Discuss by whom, when and where products were designed. Research whether products can be recycled or reused. Know about some inventors/designers/engineers/chefs/manufacturers of ground-breaking products. <u>Technical language</u> Use number of components in circuit. Program a computer to control product.</p>
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				<p>Refer to design criteria while designing and making.</p> <p>Use criteria to evaluate product.</p> <p>Begin to explain how I could improve original design.</p> <p>Evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose.</p> <p>Discuss by whom, when and where products were designed.</p> <p>Research whether products can be recycled or reused.</p> <p>Know about some inventors/designers/engineers/chefs/manufacturers of ground-breaking products.</p> <p><u>Technical language</u></p> <p>Measure carefully to avoid mistakes.</p> <p>Attempt to make product strong.</p>	
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															Continue working on product even if original didn't work. Make a strong, stiff structure.		
Year 5	Autumn 1		Autumn 2		Spring 1		Summer 1		Summer 2								
Links to Prior Learning	Year 4 Term 4, Year 3 Term 5, Year 2 Term 4						Year 3 Term 3, Year 1 Term 2, 5		Year 4 Term 3, Year 2 Term 3, Year 1 Term 4								
Vocabulary	Cardboard box, masking tape, foil, axles, wheels, base, landscape, astronaut, lunar, Moon, technology, surface, mechanics, chassis, rotate, frame,						Insulation, tent, coating, fabric, nylon, water repellent, heat, layers, entrance, surface, shelter, Waterproof, Lanolin, wax, ash, coal tar, oil, container, sample, safety, flammable, damp		bread, nutrition, knead, bake, wheat, dough, Kitchen equipment: baking trays. Weighing scales, sieves, mixing bowls. Measuring spoons, measuring jugs. Oven gloves, cooling racks. Ingredients to make the Bread Rolls Recipe. A selection of ingredients for adding to the bread, different types bread: Milk Roll, Toastie, Seeded Batch, Fruit Loaf with Orange.								
(NC Statements) In Year 5 and 6 children are coming up with and discussing their ideas, drawing out first drafts and templates, and then making mock-ups before	Term 1 Mechanical systems	Making a moon buggy					Term 4 Structures	Make a weather proof tent	Term 5 Food	Food Technology – Making Bread							
	Science linked I can research about a moon buggy. I can build and reinforce my moon buggy.				Science linked I know what to use to make my tent waterproof.				History linked <u>Food nutrition</u> <u>Technical language</u>								

<p>landing on the finished product. This is how they'll learn how to make products better and more efficient for their purpose and explore different angles of how to achieve this in their own designs.</p>	<p>I can design a miniature buggy suitable for exploring the Moon.</p> <p>I understand how to use mechanical systems, e.g. pulleys, wheels, axles and bearings.</p> <p><u>Design</u> Use internet and questionnaires for research and design ideas. <i>Take a user's view into account when designing.</i> Begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose. Create own design criteria. Have a range of ideas. Produce a logical, realistic plan and explain it to others. Use cross-sectional planning and annotated sketches. Make design decisions considering time and resources. Clearly explain how parts of product will work. Model and refine design ideas by making prototypes and using pattern pieces. Use computer-aided designs.</p> <p><u>Make</u> Use selected tools/equipment with good level of precision. Produce suitable lists of tools, equipment/materials needed. Select appropriate materials, fit for purpose; explain choices, considering functionality. Create and follow detailed step by-step plan. Explain how product will appeal to an audience</p>	<p><u>Design</u> Use internet and questionnaires for research and design ideas. <i>Take a user's view into account when designing.</i> Begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose. Create own design criteria. Have a range of ideas. Produce a logical, realistic plan and explain it to others. Use cross-sectional planning and annotated sketches. Make design decisions considering time and resources. Clearly explain how parts of product will work. Model and refine design ideas by making prototypes and using pattern pieces. Use computer-aided designs.</p> <p><u>Make</u> Use selected tools/equipment with good level of precision. Produce suitable lists of tools, equipment/materials needed. Select appropriate materials, fit for purpose; explain choices, considering functionality. Create and follow detailed step by-step plan. Explain how product will appeal to an audience Mainly accurately measure, mark out, cut and shape materials/components.</p>	<p>I can find out about important people and events in the past that have shaped the way bread is made and sold today. I can explain why I have chosen certain ingredients and processes and link them to my design criteria. I can make and evaluate my bread product against objective design criteria. I can select appropriate ingredients to match my sensory properties. I can shape dough. I can knead and bake.</p> <p><i>Explain how to be safe / hygienic and follow own guidelines.</i> <i>Present product well - interesting, attractive, fit for purpose.</i> <i>Begin to understand seasonality of foods.</i> <i>Understand food can be grown, reared or caught in the UK and the wider world.</i> <i>Describe how recipes can be adapted to change appearance, taste, texture, aroma.</i> <i>Explain how there are different substances in food / drink needed for health.</i> <i>Prepare and cook some savoury dishes safely and hygienically including, where appropriate, use of heat source.</i> <i>Use range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</i></p>
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	<p>Mainly accurately measure, mark out, cut and shape materials/components.</p> <p>Mainly accurately assemble, join and combine materials/components.</p> <p>Mainly accurately apply a range of finishing techniques.</p> <p>Use techniques that involve a small number of steps.</p> <p>Begin to be resourceful.</p> <p><u>Evaluate</u></p> <p>Evaluate quality of design while designing and making.</p> <p>Evaluate ideas and finished product against specification, considering purpose and appearance.</p> <p>Test and evaluate final product.</p> <p>Evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose.</p> <p>Begin to evaluate how much products cost to make and how innovative they are. Research how sustainable materials are.</p> <p>Talk about some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products.</p> <p><u>Technical language:</u></p> <p>Refine product after testing.</p> <p>Grow in confidence about trying new / different ideas.</p> <p>Begin to use cams, pulleys or gears to create movement.</p>	<p>Mainly accurately assemble, join and combine materials/components.</p> <p>Mainly accurately apply a range of finishing techniques.</p> <p>Use techniques that involve a small number of steps.</p> <p>Begin to be resourceful.</p> <p><u>Evaluate</u></p> <p>Evaluate quality of design while designing and making.</p> <p>Evaluate ideas and finished product against specification, considering purpose and appearance.</p> <p>Test and evaluate final product.</p> <p>Evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose.</p> <p>Begin to evaluate how much products cost to make and how innovative they are. Research how sustainable materials are.</p> <p>Talk about some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products.</p> <p><u>Technical language:</u></p> <p>Select materials carefully, considering intended use of product and appearance.</p> <p>Explain how product meets design criteria.</p>	
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			Measure accurately enough to ensure precision. Ensure product is strong and fit for purpose. Begin to reinforce and strengthen a 3D frame.				
Year 6	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
Links to Prior Learning		Year 5 Term 1, Year 4 Term 4, Year 3 Term 5, Year 2 Term 4	Year 5 Term 4, Year 3 Term 3, Year 1 Term 2, 5		Year 3 Term 2, Year 2 Term 2		
<p>KS2: Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].</p> <p>At the end of Key stage 2 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.</p>							
Vocabulary		Fairgrounds, Ride, components, sturdy, materials, properties, tubular, foundation, engineer, strengthen, force, gravity, arch, suspension, Prototype, brief, scale, design criteria, functional, clearance, Analyse, evaluate, high-quality, process	Pillars, beams, span, deck, parapet, sturdy, clapper, materials, properties, girder, tubular, cross-section, pier, foundation, Truss, engineer, strengthen, sagging, force, gravity, compression force, abutment, distribution, weight, transfer, lattice truss, warren truss, pratt truss, falsework, arch, suspension, anchorage, Prototype, brief, scale, design criteria, functional, clearance, Analyse, evaluate		visual and tactile qualities, eg shiny, scaly drawing skills, eg outline, mark making making skills, eg glueing, stitching composition, eg arrangement of shapes, colours, lines, background, foreground Running stitch Ladder stitch Slip stitch Catchstitch Blanket stitch Whipstitch backstitch		
One of the distinct changes between KS1 and KS2 is that our older pupils will learn		Term 2 Pulleys	Fairgrounds	Term 3 Structures	Bridges	Term 5+6 Textiles-changing every year	Legacy

<p>to make products that are appealing, have a specific purpose and have a target audience. At Chiltern we Year 5 and 6 children will think more carefully about their designs and the decisions they make during the planning, drafting and mock-up process. There is also a bigger focus on generating, sharing and working on ideas before starting practical work on the design itself.</p>	<p>Geography linked I can investigate ways of making a framework for a fairground ride. I can make a fairground ride following a design. I can evaluate a finished product.</p> <p><u>Design</u> Draw on market research to inform design. Use research of user's individual needs, wants, requirements for design. Identify features of design that will appeal to the intended user. Create own design criteria and specification. Come up with innovative design ideas. Follow and refine a logical plan. Use annotated sketches, cross-sectional planning and exploded diagrams. Make design decisions, considering, resources and cost. Clearly explain how parts of design will work, and how they are fit for purpose. Independently model and refine design ideas by making prototypes and using pattern pieces. Use computer-aided designs.</p> <p><u>Make</u> Use selected tools and equipment precisely. Produce suitable lists of tools, equipment, materials needed, considering constraints. Select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics. Create, follow, and adapt detailed step-by-step plans. Explain how product will appeal to audience; make changes to improve quality. Accurately measure, mark out, cut and shape materials/components. Accurately assemble, join and combine materials/components. Accurately apply a range of finishing techniques.</p>	<p>Geography linked I can explore ways in which pillars and beams are used to span gaps. I can explore ways in which trusses can be used to strengthen bridges. I can explore ways in which arches are used to strengthen bridges. I understand how suspension bridges are able to span long distances. I can develop a criteria and design a prototype bridge for a purpose. I can analyse and evaluate products according to design criteria.</p> <p><u>Design</u> Draw on market research to inform design. Use research of user's individual needs, wants, requirements for design. Identify features of design that will appeal to the intended user. Create own design criteria and specification. Come up with innovative design ideas. Follow and refine a logical plan. Use annotated sketches, cross-sectional planning and exploded diagrams. Make design decisions, considering, resources and cost. Clearly explain how parts of design will work, and how they are fit for purpose. Independently model and refine design ideas by making prototypes and using pattern pieces. Use computer-aided designs.</p> <p><u>Make</u> Use selected tools and equipment precisely.</p>	<p>I can question and make thoughtful observations about starting points for my work. I can practise a range of stitches to use in my design. I know how to create a design and how to use chalk to transfer shapes onto fabric and cut out. I know how to adapt my work, based on feedback from peers. I know how bring together two pieces of fabric and begin stitching around pieces.</p> <p><u>Technical language:</u> Think about user's wants/needs and aesthetics when choosing textiles. Make product attractive and strong. Make a prototype. Use a range of joining techniques Think about how product might be sold. Think carefully about what would improve product. Understand that a single 3D textiles project can be made from a combination of fabric shapes.</p>
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	<p>Use techniques that involve a number of steps. Be resourceful with practical problems.</p> <p><u>Evaluate</u> Evaluate quality of design while designing and making: is it fit for purpose? Keep checking design is best it can be. Evaluate ideas and finished product against specification, stating if it's fit for purpose. Test and evaluate final product; explain what would improve it and the effect different resources may have had Do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose. Evaluate how much products cost to make and how innovative they are. Research and discuss how sustainable materials are. Consider the impact of products beyond their intended purpose. Discuss some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products.</p> <p><u>Technical language</u> Refine product after testing, considering aesthetics, functionality and purpose. Incorporate hydraulics and pneumatics. Be confident to try new / different ideas. Use cams, pulleys and gears to create movement.</p>	<p>Produce suitable lists of tools, equipment, materials needed, considering constraints. Select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics. Create, follow, and adapt detailed step-by-step plans. Explain how product will appeal to audience; make changes to improve quality. Accurately measure, mark out, cut and shape materials/components. Accurately assemble, join and combine materials/components. Accurately apply a range of finishing techniques. Use techniques that involve a number of steps. Be resourceful with practical problems.</p> <p><u>Evaluate</u> Evaluate quality of design while designing and making: is it fit for purpose? Keep checking design is best it can be. Evaluate ideas and finished product against specification, stating if it's fit for purpose. Test and evaluate final product; explain what would improve it and the effect different resources may have had Do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose. Evaluate how much products cost to make and how innovative they are. Research and discuss how sustainable materials are. Consider the impact of products beyond their intended purpose. Discuss some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products.</p>	
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Technical language:

Select materials carefully, considering intended use of the product, the aesthetics and functionality.
Explain how product meets design criteria.
Reinforce and strengthen a 3D frame.

