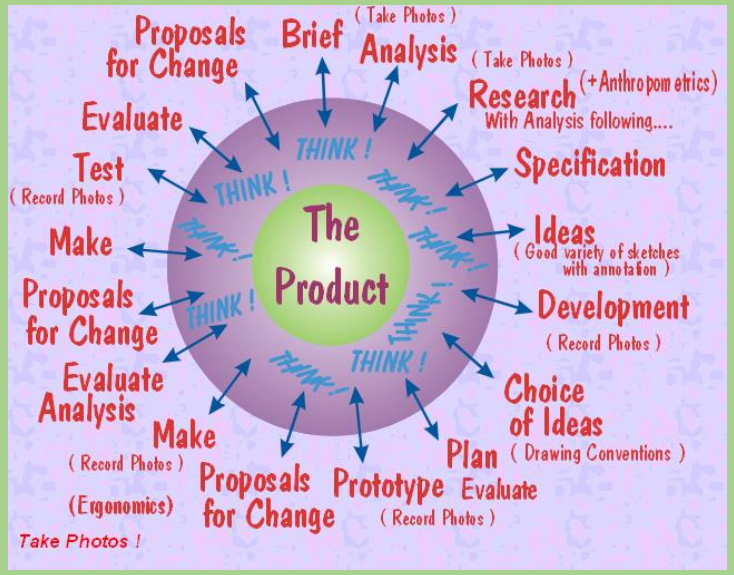
2022

Curriculum Skills and Progression Map
Design Technology

The DT Curriculum at Old Catton Junior school aims to develop children's experience and love of designing and making while fostering the joy of seeing plans come to fruition with a completed design. It encourages children to explore current and existing products while allowing their imagination and creativity to flourish in their independent tasks. It provides children with the freedom to experiment and explore design techniques using a variety of resources with cross curricular links in a way that hopes to support Children's knowledge, understanding and ability in future endeavours in this subject.



OLD CATTON JUNIOR SCHOOL J Cooper

Nebula
where stars are born

DESIGN TECHNOLOGY: AGE RELATED STATUTORY COVERAGE	
KEY STAGE ONE LEARNING	**KEY STAGE TWO LEARNING**
Design • Design purposeful, functional, appealing products based on design criteria • Generate, develop, model and communicate their ideas through talking, • drawing, templates, mock-ups and ICT **Make** • Select from and use a range of tools and equipment to perform practical tasks • Select from and use a wide range of materials and components, including • construction materials, textiles, ingredients **Evaluate** • Explore and evaluate a range of existing products • Evaluate ideas / products against design criteria **Technical knowledge** • Build structures, exploring how they can be made stronger, stiffer and more stable • Explore and use mechanisms in their products. • Use the basic principles of a healthy and varied diet to prepare dishes Understand where food comes from.	**Design** • Use research and develop criteria to inform the design of innovative, functional, appealing products that are fit for purpose • Generate, develop, model and communicate ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Make** • Select from and use a wider range of tools and equipment to perform practical tasks accurately • Select from and use a wider range of materials and components **Evaluate** • Investigate and analyse a range of existing products • Evaluate ideas and products against own design criteria and consider the views of others • Understand how key events and individuals have helped shape the world **Technical knowledge** • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Understand and use mechanical systems in their products • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply understanding of computing to program, monitor and control products. • 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.

Skills Map – Design Technology		
Year 2 – Design Technology		
Developing, Planning and Communicating Ideas	**Working with tools, equipment, materials and components to make quality products**	**Evaluating processes and products**
• Can they generate ideas through comparing existing products? • Can they plan an innovative product? • Can they choose the most appropriate tools and materials and explain their choices? • Can they describe their design by using pictures, diagrams, and words? **DESIGN AND DEVELOP** • Generate ideas, and plan what to do next, using their experience of materials and components • Use their knowledge of some working characteristics of materials when designing • Use wheels, slides and levers in plans • Use plans to show how to put their ideas into practice • Say how the product will be useful to the user • Draw pictures with labels, with some text	• Can they join materials/ components together in different ways? • Can they measure materials to use in a model or structure? • Can they use joining, folding or rolling to make it stronger? **MAKING** • Begin to select tools for folding, joining, rolling • Measure out and cut fabric • Use a simple template for cutting out • Practise skills before using them • Use simple finishing techniques • Select tools and techniques appropriate to the job • Follow basic safety rules • Understand and use the terms ingredient and component • Use simple scales or balances • Understand main rules of food hygiene	• Can they assess how well their product works? • If they did it again, can they explain what they would improve? **PRODUCT AND EVALUATION** • Talk about how moving objects work • Describe how a commercial product works • Use like and dislike when evaluating or describing • Explain why some products are useful • Use digital photography to present design or finished work • Recognise what they have done well and talk about what could be improved • Seek out the views and judgements of others • Predict how changes will improve the finished product
Year 2 – Choose from: Areas of Study		
Textiles • Can they measure an amount of a textile? • Can they join textiles together to make a product, using techniques such as stitching? • Can they cut textiles accurately? • Can they explain why they chose a certain textile?	**Mechanisms** • Can they join materials together as part of a moving product? • Can they explain how different parts move?	**Construction** • Can they make sensible choices of which material to use for their construction? • Can they make their structure stronger, stiffer or more stable?

Skills Map – Design Technology		
Year 3 – Design Technology		
Developing, Planning and Communicating Ideas	**Working with tools, equipment, materials and components to make quality products**	**Evaluating processes and products**
• Can they plan their design, using accurate diagrams and labels? • Can they plan the equipment/ tools needed and give reasons why? • Can they start to order the main stages of making their product? • Can they identify a design criteria and establish a purpose/ audience for their product? • How realistic are their plans? e.g. tools, equipment, materials, components? **DESIGN AND DEVELOP** • Use others to help generate their ideas • Use what they know about the properties of materials • Plan their work to include a range of joins • Ensure that plans are realistic and appropriate for the aim • Show the order of working in plans • Use models, pictures and words in designs • Make increasing use of ICT to plan ideas • Recognise that designs must meet a range of needs • Say why something will be useful • Apply what they know about mechanisms to create movement when planning and designing • Investigate a range of products to see how they work	• Can they use equipment and tools accurately and safely? • Can they select the most appropriate materials, tools and techniques to use? • Can they manipulate materials using a range of tools and equipment? • Can they measure, cut and assemble with increasing accuracy? **MAKING** • Measure and cut out using centimetres and weigh in grams • Choose tools and equipment which are appropriate for the job • Prepare for work by assembling components together before joining • Use scoring and folding for precision • Make holes using a punch and drill • Work out how to make models stronger • Alter and adapt materials to make them stronger • Combine a number of components together in different ways • Make the finished product neat and tidy • Begin to select their own ingredients when cooking or baking • Make good presentation of food	• Start to think about their ideas as they make progress and be willing to make changes if this helps them to improve their work? • Can they assess how well their product works in relation to the purpose? • Can they explain how they could change their design to make it better? **PRODUCT AND EVALUATION** • Be clear about their ideas when asked • Can alter and adapt original plans following discussion and evaluation • Recognise what has gone well, but suggest further improvements for the finished article • Suggest which elements they would do better in the future • Identify where evaluation has led to improvements • Understand safe food storage
Year 3 – Choose from: Areas of Study		
Textiles • Can they join textiles of different types in a range of ways? • Can they choose textiles both for their appearance and also qualities? • Can they begin to use a range of simple stitches?	**Mechanisms** • Can they make a product which uses mechanical components? • Can they use a range of components? e.g. levers, linkages and pneumatic systems	**Construction** • Can they join materials effectively to build a product? • Can they use a range of techniques to shape and mould materials? • Can they use finishing techniques? e.g. sanding, varnishing, glazing etc.

Skills Map – Design Technology		
Year 4 – Design Technology		
Developing, Planning and Communicating Ideas	**Working with tools, equipment, materials and components to make quality products**	**Evaluating processes and products**
• Can they create a final design for their product based on initial ideas and revisions, based on existing ideas? • Can they create a detailed plan considering their target audience, design criteria and intended purpose? **DESIGN AND DEVELOP** • Collect and use information to generate ideas • Consider the way the product will be used • Understand designs must meet a range of criteria and constraints • Take users' views into account • Understand how some properties can be used – e.g. waterproof • Think ahead about the order of their work • Add electricity to create motion or make light • Produce step by step plans • Make ongoing sketches and annotations	• Can they use equipment and tools with increased accuracy and safety? • Can they select the most effective materials, tools and techniques to use? • Can they manipulate materials effectively using a range of tools and equipment? • Can they measure, cut and assemble accurately? **MAKING** • Increasingly model their ideas before making • Measure accurately to centimetres and grams • Combine materials for strength and to improve how the product looks • Use permanent and temporary fastenings to join • Join with a greater range of techniques – e.g. staples • Strengthen joins and corners in a variety of ways • Understand how wheels, axles, turning mechanisms, hinges and levers all work together	• Can they think about their ideas as they progress and make changes to improve their work? • Can they assess how well their product works in relation to the design criteria and the intended purpose? • Can they explain how they could improve their design and how their improvement would affect the original outcome? **PRODUCT AND EVALUATION** • Talk about what they like and dislike, giving reasons • Develop their designs through their own reflection and the evaluation of others • Carry out tests before making improvements • Evaluate food by taste, texture, flavour etc.
Year 4 – Choose from: Areas of Study		
Textiles • Can they consider which materials are fit for purpose and join them appropriately? • Can they devise a template or pattern for their product?	**Electrical and Mechanical Components** • Can they use a simple circuit and add components to it? • Can they make a product which uses both electrical and mechanical components?	**Construction** • Can they measure accurately to build effective structures? • Can they use a range of techniques to shape and mould? • Can they experiment with a range of techniques to increase stability in a structure? • Can they use finishing techniques, showing an awareness of audience? • e.g. sanding, varnishing, glazing etc.

Skills Map – Design Technology		
Year 5 – Design Technology		
Developing, Planning and Communicating Ideas	**Working with tools, equipment, materials and components to make quality products**	**Evaluating processes and products**
• Can they survey their target audience and use this to generate ideas? • Can they take a user's view into account when designing? • Can they produce a detailed step-by-step plan for their design method? • Can they suggest some alternative designs and compare the benefits and drawbacks to inform the design process and outcome? **DESIGN AND DEVELOP** • Make more complex designs to include belts and pulleys, and a combination of other mechanisms • Plan the order of work by thinking ahead • Use sketches to show other ways of doing things – and then make choices • Meet an identified need – e.g. a meal for an older person – by selecting ingredients or materials • Use various sources of information and draw on them in design	• Can they choose appropriate tools and materials to ensure that the final product will appeal to the audience? • Can they use a range of tools and equipment with good accuracy and effectiveness, within established safety parameters? **MAKING** • Carry out tests to see if their design works • Make improvements from design suggestions • Work in a safe and hygienic way • Measure and cut precisely to millimetres • Make stable and strong joins to stand the test of time • Use proportions when cooking, by doubling and halving recipes	• Can they continuously check that their design is effective and fit for purpose? • Can they assess how well their product works in relation to the design criteria and the intended purpose and suggest improvements? • Can they evaluate appearance and function against the original design criteria? **PRODUCT AND EVALUATION** • Identify what is working well and what might be improved – and make choices from several alternatives • Refine the quality of the finished product, including making annotations on the design • Clarify ideas through drawing and modelling • Increasingly use testing to improve models and finished products
Year 5 – Choose from: Areas of Study		
Textiles • Can they consider the audience when choosing textiles? • Can they make up a prototype first? • Can they use a range of joining techniques? • Can they devise a template or pattern for their product?	**Mechanical Components** • Can they refine their product after testing it?	**Construction** • Are their measurements accurate enough to ensure precision? • Can they demonstrate that their product is strong and fit for purpose? • Are they motivated to refine and further improve their product?

Skills Map – Design Technology		
Year 6 – Design Technology		
Developing, Planning and Communicating Ideas	**Working with tools, equipment, materials and components to make quality products**	**Evaluating processes and products**
• Can they use a range of information to inform their design? • Can they use market research to inform plans? • Can they work within constraints? • Can they justify their plan to someone else? • Can they consider culture and society in their designs? • Have they considered the use of the product when selecting materials? • Have they thought about how their product could be marketed through packaging and advertising? **DESIGN AND DEVELOP** • Keep cost constraints in mind when selecting materials in design • Use their knowledge of –e.g.- science and art when designing • Be aware of commercial aspects and incorporate these into their designs • Design including hydraulics and pneumatics when where appropriate • Draw scaled diagrams with increasing use of ratio Calculate the amount of materials needed use this to estimate cost	• Can they choose appropriate tools and materials to ensure that the final product will appeal to the audience? • Can they use a range of tools and equipment with good accuracy and effectiveness, within established safety parameters? **MAKING** • Measure and cut out in precise detail, and make sure that finished products are carefully finished • Make separate elements of a model before combining into the finished article • Understand how an article might be mass produced • Produce a simple instruction manual or handbook for their product	• How well do they test and evaluate their final product? • Is it fit for purpose? • What would improve it? • Would different resources have improved their product? • Would they need more or different information to make it even better? • Does their product meet all design criteria? **PRODUCT AND EVALUATION** • Research products using the internet • Test and evaluate commercial products, understanding how this information supports their own designs • Evaluate a range of different sources of information such as advertising and handbooks
Year 6 – Choose from: Areas of Study		
Textiles • Can they consider the audience when choosing textiles? • Can they make up a prototype first? • Can they use a range of joining techniques?	**Electrical and Mechanical Components** • Can they use different kinds of circuits in their product to improve it? • Can they incorporate a switch into their product? • Can they refine their product after testing it?	**Construction** • Are their measurements accurate enough to ensure precision? • Can they demonstrate that their product is strong and fit for purpose? • Are they motivated to refine and further improve their product?

DT at Old Catton Junior School
DT at old Catton Junior follows the Plan Bee Programme of study. Year 6 units are supplemented by the Christmas fair and a fashion show. All units follow the same pattern: Design and Develop (investigating existing products, collecting ideas, designing), Making and Evaluating the finished product. Many of the skills are applicable across all units. Key skills covered in each unit have been included below. Units have been allocated a particular term, however, these may change due to circumstances within school, availability of resources, extra events in the school timetable, time constraints, absences etc. Teachers may wish to alter the order according to these circumstances. A separate skills overview has been attached for year 3, 4, 5 and 6. These are designed to show the skills covered in each unit across two years. It is not however exclusive as elements of many of the skills are naturally and implicitly incorporated into other units. **Writing opportunities if time allows**: Most Units lend themselves to certain writing opportunities – often **instructions, advertising, explanations, reviews**. It is understood these might be included if time and opportunity allows. **Creative curriculum if time allows:** some units may present opportunities for the creative curriculum such as Seasonal Foods in year 3 and 4 and fairgrounds or Bridges in year 5 and 6. These could start with a scenario to set the scene e.g. A local shop would like to advertise their products, and cater especially to vegetarian/healthy eating consumers or, something has been destroyed or broken or is derelict in a local area and the council want to replace it. Commissions could be to create an advertising campaign with cookery demonstrations and/or cooking cards, or the council desires to replace or build a memorial or to solve a wider problem e.g. rising water levels (bridges) youth crime/tourism (fairground ride) in a community to focus children's studies in the units. The subject lead is investigating incorporating these into at least one DT unit. **Ongoing development of DT in School:** The subject lead is reviewing units in all year groups and seeking to collect the children's voice with a view to updating some of them. **RE Ethos:** **The DT Curriculum at Old Catton Junior school aims to develop children's experience and love of designing and making while fostering the joy of seeing plans come to fruition with a completed design. It encourages children to explore current and existing products while allowing their imagination and creativity to flourish in their independent tasks. It provides children with the freedom to experiment and explore design techniques using a variety of resources with cross curricular links in a way that hopes to support Children's knowledge, understanding and ability in future endeavours in this subject.**

YEAR 3 and 4

	Unit:	Learning objectives:	Assessment:	Key Vocabulary	Opportunities for writing:	Cross curricular links:
Year 2 (Autumn)	Photograph frames	• To investigate free-standing structures and how they are made stable. • To find different ways of strengthening and joining paper and card. • To investigate ways of making stable free-standing structures. • To be able to design a photograph frame for a particular purpose. • To be able to make a stable photograph frame from a design. • To be able to evaluate a finished product.	• Can you identify the different components of a photograph frame? • Can you describe different techniques for strengthening and joining paper? • Can you select and use appropriate strengthening and joining techniques? • Can you design a photograph frame that would be suitable for a particular purpose? • Can you create a strong and stable structure? • Can you suggest ways in which you would change your design if you were to make your photograph frame again?	Year 2: Circuits Components Features Product Design Brief Modify Improve Evaluate Analyse Materials Join Combine Mechanism Font Graphic techniques Lever Linkage Free standing Stable Strengthen Joining Structure	• Instructions	• Literacy • Science - structures
Skills:		Y3: Measure and cut out in centimetres Y3: Use scoring and folding for precision Y3: Combine a number of components together in different ways Y4: Measure accurately to centimetres Y4: Combine materials for strength and to improve how the product looks Y4: Experiment with a range of techniques to increase stability in a structure				
Year 2 (Spring)	Lighting it up	• To investigate a variety of lights and how they are • designed and used. • To investigate which metal components can be used • in a simple circuit • To investigate how to use switches to control a bulb • To be able to design a light for a particular purpose • To be able to make a product from a design • To be able to evaluate a finished product.	• Can children describe how a light and switches work? • Can children make a bulb light up in a simple circuit? • Can children create their own switches and know how to place them in a circuit to control a bulb? • Can children apply what they have learnt to their design ideas? • Can children follow a design? • Can children identify ways in which they could modify or improve their product if they were to make it again?		Instructions on how to use or play Instructions on how to make Advertising poster	Literacy Science – circuits History – how lighting has changed over time
Skills:		Y3: Alter and adapt materials to make them stronger Y3: Use scoring and folding for precision Y4: Add electricity to create motion or light				

		Y4: increasingly model ideas before making Y4: Use permanent and temporary fastenings to join Y4: Carry out tests before making improvements				
Year 2 (Summer)	Storybooks	• To investigate and evaluate products with lever and linkage systems. • To experiment with a range of techniques to create moving mechanisms. • To explore and experiment with a range of different fonts and graphic techniques. • To be able to plan and design a storybook. • To be able to make a storybook with moving mechanisms using a design. • To be able to evaluate a finished product.	• Can children explain why a particular mechanism has been used for a particular purpose? • Can children join and combine materials and components in a variety of ways? • Can children experiment to create a range of different fonts and graphic techniques? • Can children choose suitable mechanisms to create moving parts in their storybook? • Can children create moving mechanisms that work well? • Can children evaluate their own finished product fairly and constructively?		Instructions on how to Make Story/picture book Blurb Book review Advert/poster	Literacy – stories, children's books Art – pictures, graphics, calligraphy
Skills:		Y3: Use models, pictures and words in designs Y3: Apply what they know about mechanisms to create movement when planning and designing Y3 Use scoring and folding for precision Y4: Join materials with a greater range of techniques Y4: Understand how wheels, axles, turning mechanisms, hinges and levers all work together				
					•	
Year 1 Spring Whole Term - Long Unit	Seasonal Food	• To cook using British ingredients available all year round. • To know how seasonal fruits in Britain are grown and processed. • To understand why vegetables form an important part of a healthy and varied diet. • To find out about how seasonally produced meat can form part of a healthy diet. • To know how fish are caught or reared, processed and used in healthy meals. • To show what you have learned about eating seasonal food as part of a healthy, varied diet.	• Do children know what 'seasonal food' is? • Do children know why certain foods are available all year round in Britain? • Can children use a variety of techniques to bake cakes safely and hygienically? • Do children understand that some seasonal fruits are suited to the climate and weather conditions in Britain? • Do children know how fruit may be processed and/or preserved? • Can children follow instructions for a recipe using seasonal fruit or jam?	Year 1: Healthy eating Carbohydrates proteins, fats, sugar, minerals, vitamins nutrients Food Hygiene Vegetarian seasonal Flavours Textures Purpose	• Healthy eating information leaflet • Recipe/instructions • Magazine review • Seasonal foods fact sheet	• Science – healthy eating • PSHCE – hygiene in kitchen / healthy living • Literacy • Maths - survey

			• Do children know why vegetables form an important part of a healthy diet? • Do children know when some British vegetables are in season? • Can children prepare a healthy meal using seasonal vegetables? • Can children name a variety of food products that come from animals? • Do children know some reasons why some meat is not in season all-year-round? • Can children prepare a healthy, savoury meal using meat (or a vegetarian alternative)? • Do children know some ways in which fish are caught or reared and processed in Britain? • Do children know some of the nutrients in fish? • Can children prepare a healthy, savoury meal using fish or vegetarian alternatives? • Can children explain why it is a good thing to eat seasonal food?	Evaluate Brief Features Chracteristics Running stitch Back stitch Whip stitch embellishment fastening		
Skills:		Y3 - Measure and cut out in centimetres and weigh in grams Y3: Use scoring and folding for precision (Packaging) Y3: Begin to select their own ingredients when cooking or baking Y3: Make good presentation of food Y3: Understand safe food storage Y4: Measure accurately to centimetres and grams Y4: Evaluate food by taste, texture and flavour				
Year 1 (Summer)	Textiles	• To know about the properties and uses of a range of different fabrics • To investigate natural and synthetic fabrics and how their uses changed fashion • To understand the importance of recycling and reusing fabric • To explore and practise different sewing stitches	• Can children define what a fabric is? • Can children name a variety of different fabrics? • Can children discuss and answer questions about fabrics in terms of their properties and uses? • Do children know the difference between natural and synthetic fabrics?		• Instructions	• Literacy

		• To design a small fabric bag using specific criteria • To make and evaluate a small bag using specific criteria	• Can children name some synthetic fabrics and the advantages they have over natural fabrics? • Do children understand the impact that the invention of synthetic fabrics had on the world? • Do children understand why it is important to try to recycle/reuse unwanted clothing? • Can children name and discuss some sustainable fabrics? • Can children practise their sewing skills in order to repair a piece of clothing? • Can children identify and name some different sewing stitches? • Can children use one or more of these stitches when sewing fabric together? • Can children discuss the use/effectiveness of these different sewing stitches? • Do children understand what design criteria are? • Can children design a bag or pouch to meet specific design criteria? • Can children plan the making process, understanding what they will need to do and the order in which they will need to do it? • Can children follow their design (and amend where necessary) to make their finished product? • Can children choose and use an appropriate sewing stitch to join fabric together? • Can children evaluate their finished product based on the original design criteria?			
Skills:		Y3: Use what they know about the properties of materials Y3: Make the finished product neat and tidy Y3: Can they join textiles of different types in different ways Y3: Can they choose textiles both for their appearance and qualities Y3: Can they begin to use a range of simple stitches Y4: Understand how some properties can be used e.g. flexible, waterproof				

EXTRA UNITS:	Moving Monsters	• To investigate a variety of familiar objects that use air to make them work. • To investigate techniques for making simple pneumatic systems. • To be able to gather ideas for creating moving monsters. • To be able to design a monster including a moving pneumatic system. • To be able to make a monster with a moving pneumatic part. • To be able to evaluate a finished product.	• Can children describe how the objects use air to make them work? • Can children create simple pneumatic systems? • Do children know of different techniques for joining and fixing components? • Can children describe what materials and components they will need to create their monster? • Can children construct an effective pneumatic system to control movement? • Can children identify areas that could be improved upon?		Instructions on how to make Story or playscript involving Monsters Description of monster Explanation of how pneumatics work	Art – Sculptures Spr
Skills:		Y3: apply what they know about mechanisms to create movement when planning and designing Y3: Alter and adapt materials to make them stronger Y3 combine a number of different components together in different ways Y3: Use pneumatic systems Y4: Combine materials for strength and to improve how the product looks				

Year 3 Skills DT	Lighting it Up	Moving Monsters	Story Books	Seasonal food	Photograph Frames	Textiles
Developing, Planning and Communicating Ideas						
Can they plan their design, using accurate diagrams and labels?						
Can they plan the equipment/ tools needed and give reasons why?						
Can they start to order the main stages of making their product?						
Can they identify a design criteria and establish a purpose/ audience for their product?						
How realistic are their plans? e.g. tools, equipment, materials, components?						
DESIGN AND DEVELOP						
Use others to help generate their ideas						
Use what they know about the properties of materials						
Plan their work to include a range of joins						
Ensure that plans are realistic and appropriate for the aim						
Show the order of working in plans						
Use models, pictures and words in designs						
Make increasing use of ICT to plan ideas						
Recognise that designs must meet a range of needs						
Say why something will be useful						
Apply what they know about mechanisms to create movement when planning and designing						
Investigate a range of products to see how they work						
Working with tools, equipment, materials and components to make quality products						
Can they use equipment and tools accurately and safely?						
Can they select the most appropriate materials, tools and techniques to use?						
Can they manipulate materials using a range of tools and equipment?						
Can they measure, cut and assemble with increasing accuracy?						
MAKING						

Measure and cut out using centimetres and weigh in grams						
Choose tools and equipment which are appropriate for the job						
Prepare for work by assembling components together before joining						
Use scoring and folding for precision						
Make holes using a punch and drill						
Work out how to make models stronger						
Alter and adapt materials to make them stronger						
Combine a number of components together in different ways						
Make the finished product neat and tidy						
Begin to select their own ingredients when cooking or baking						
Make good presentation of food						
Evaluating processes and products						
Start to think about their ideas as they make progress and be willing to make changes if this helps them to improve their work?						
Can they assess how well their product works in relation to the purpose?						
Can they explain how they could change their design to make it better?						
PRODUCT AND EVALUATION						
Be clear about their ideas when asked						
Can alter and adapt original plans following discussion and evaluation						
Recognise what has gone well, but suggest further improvements for the finished article						
Suggest which elements they would do better in the future						
Identify where evaluation has led to improvements						
Understand safe food storage						
Textiles						
Can they join textiles of different types in a range of ways?						
Can they choose textiles both for their appearance and also qualities?						
Can they begin to use a range of simple stitches?						
Mechanisms						
Can they make a product which uses mechanical components?						
Can they use a range of components? e.g. levers, linkages and pneumatic systems						

Construction						
Can they join materials effectively to build a product?						
Can they use a range of techniques to shape and mould materials?						
Can they use finishing techniques? e.g. sanding, varnishing, glazing etc						

Year 4 Skills DT	Lighting it Up	Moving Monsters	Story Books	Seasonal Food	Photograph Frames	Textiles
Developing, Planning and communicating ideas						
Can they create a final design for their product based on initial ideas and revisions, based on existing ideas?						

Can they create a detailed plan considering their target audience, design criteria and intended purpose?						
DESIGN AND DEVELOP						
Collect and use information to generate ideas						
Consider the way the product will be used						
Understand designs must meet a range of criteria and constraints						
Take users' views into account						
Understand how some properties can be used – e.g. waterproof						
Think ahead about the order of their work						
Add electricity to create motion or make light						
Produce step by step plans						
Make ongoing sketches and annotations						
Working with tools, equipment, materials and components to make quality products						
Can they use equipment and tools with increased accuracy and safety?						
Can they select the most effective materials, tools and techniques to use?						
Can they manipulate materials effectively using a range of tools and equipment?						
Can they measure, cut and assemble accurately?						
MAKING						
Increasingly model their ideas before making						
Measure accurately to centimetres and grams						
Combine materials for strength and to improve how the product looks						
Use permanent and temporary fastenings to join						
Join with a greater range of techniques – e.g. staples						
Strengthen joins and corners in a variety of ways						
Understand how wheels, axles, turning mechanisms, hinges and levers all work together						
Evaluating processes and products						
Can they think about their ideas as they progress and make changes to improve their work?						

Can they assess how well their product works in relation to the design criteria and the intended purpose?						
Can they explain how they could improve their design and how their improvement would affect the original outcome?						
PRODUCT AND EVALUATION						
Talk about what they like and dislike, giving reasons						
Develop their designs through their own reflection and the evaluation of others						
Carry out tests before making improvements						
Evaluate food by taste, texture, flavour etc						
Textiles						
Can they consider which materials are fit for purpose and join them appropriately?						
Can they devise a template or pattern for their product?						
Electrical and Mechanical Components						
Can they use a simple circuit and add components to it?						
Can they make a product which uses both electrical and mechanical components?						
Construction						
Can they measure accurately to build effective structures?						
Can they use a range of techniques to shape and mould?						
Can they experiment with a range of techniques to increase stability in a structure?						
Can they use finishing techniques, showing an awareness of audience? e.g. sanding, varnishing, glazing etc						

YEAR 5 and 6

	Unit:	Learning objectives:	Assessment:	Key Vocabulary	Opportunities for writing:	Cross curricular links:

Year 1 and 2 Autumn Year 6	Biscuits/ Christmas Fair	• To investigate and compare a variety of biscuits. • To explore the sensory characteristics of biscuits. • To be able to design biscuits for a particular purpose. • To be able to make biscuits that fulfil your design specifications. • To be able to evaluate a finished product.	• Can you carry out research to find out people's preferences? • Can you compare biscuits in terms of appearance, flavour, texture and cost? • Can you generate and develop design ideas? • Can you follow a recipe to make biscuits? • Can you identify ways in which you could improve your finished product?	Year 1: Investigate Evaluate Analyse Characteristics Features Balanced diet Ingredients Product Purpose Brief specifications Weigh Measure Flavour Texture cost pillars beams arches span strengthen suspension criteria prototypes Hand saws, clamps, nails, hammers, hand drills, measuring tape, balsa wood, dowling rods, glue guns and sandpaper.	• Recipe • Magazine review of biscuits	• Literacy • Science – eating, digestion • Geography? Biscuits around the world? When eaten?
Skills:		Y5: Work in a safe and hygienic way Y5: Use proportions when cooking by doubling and halving recipes Y6: Have they considered how their product could be marketed through packaging and advertising Y6: Test and evaluate commercial products, understanding how this information supports their own designs Y6: Can they refine their product after testing it Y6: Keep cost restraints in mind when selecting materials in design				
Year 1 and 2 Autumn Year 5	Bird boxes Builders	• To investigate the purpose and appearance of bird houses. • To investigate the materials and features of bird houses and how to draw diagrams. • To investigate and practise woodwork skills • To be able to design a bird house for a specific bird • To be able to make a bird house by following a plan. • To evaluate, make predictions and promote a completed bird house.	• Can children explain what a bird house is and why people construct them? • Do children understand that different birds require different bird house features? • Can children research, observe and record bird behaviours and their needs? • Can children describe the materials and features bird houses have? • Do children understand what exploded and 3-D diagrams are used for? • Can children draw 3-D diagrams and exploded diagrams? • Can children explain what tools and equipment are needed to make objects with wood? • Can children follow instructions to practise woodwork skills? • Do children understand the importance of safety precautions when working with wood and tools? • Can children design a bird house to suit a specific bird?		Instruction text Information text – nesting habits of birds Safety poster Advert	Literacy – the robot and the bluebird

			• Can children draw diagrams of their bird house design? • Do children know what tools, equipment and safety precautions are needed to make a bird house? • Can children follow a plan to make a bird house? • Can children make amendments to plans to make construction easier? • Can children choose appropriate materials to make specific features. • Can children answer evaluation questions on their completed bird house? • Do children understand why evaluating designs and products is important? • Can children use retail ideas to promote their bird house to a prospective buyer?			
Skills:		• Yr 5: Can they make up a prototype first? • Yr 5: Can they use a range of joining techniques? • Yr 5: Can they devise a template or pattern for their product? • Yr 5: Are their measurements accurate enough to ensure precision? • YR 5: Can they demonstrate that their product is strong and fit for purpose? • Yr 5: Are they motivated to refine and further improve their product?				
Year 1 Spring Year 5 and 6	Building bridges	• To explore ways in which pillars and beams are used to span gaps. • To explore ways in which trusses can be used to strengthen bridges. • To explore ways in which arches are used to strengthen bridges. • To understand how suspension bridges are able to span long distances. • To develop criteria and design a prototype bridge for a purpose. • To analyse and evaluate products according to design criteria..	• Do you understand the impact better bridge design has had on daily life? • Can you apply your knowledge of how to stiffen and strengthen structures? • Can you use technical vocabulary to explain how arch bridges work? • Can you build a model suspension bridge that will support a given weight? • Can you design a prototype model according to design criteria? • Can you evaluate your product according to design criteria?	Year 2: Rotation Electrical motor Circuit Framework Structure Product Pulley	• Explanation – strongest structures • Newspaper article – unveiling of new bridge?	• Literacy • Science – structures • Art – Sculptures • History – bridges over time? Development? • Geography – famous bridges of the worlds?
Skills:		• Y5: Use sketches to show ways of doing things – and then make choices • Y5: Carry out tests to see if their design works				

		• Y5:Make stable and strong joins to stand the test of time • Y5: Can they make a prototype first • Y6: Can they consider culture and society in their designs • Y6: Use their knowledge of e.g. science and art when designing • Y6: Make separate elements of a model before combining into the finished article		Belt Components Balanced diet		
Year 1 and 2 Summer	Year 5: T-shirts Year 6: Fashion show	• To investigate existing fashion products • To explore ways in which different plastic bags can be used to create clothing • To explore the properties of plastic bags as a building material • To investigate how shape and size is significant in creating clothing • To measure, cut and assemble materials accurately • To evaluate and improve products	• Can you investigate and comment on existing products and state preferences? • Can you explore and comment on ways plastic bags can be used to create clothing • Can you identify the properties of different plastic materials • Can you measure, cut and assemble materials accurately • Can you evaluate and suggest ways of improving your product		• Review • Newspaper article of event • Discussion – should we be using plastic?	• Literacy • Geography – traditional dress • Maths - measuring
Skills:		Y5/6: Can they consider the audience when choosing textiles Y5: Can they use a range of joining techniques Y5: Can they devise a template or pattern for their product Y5: Use various sources of information and draw on them in design Y6: Can they consider culture and society in their designs? Y6: Keep cost constraints in mind when selecting materials in design Y6: measure and cut in precise detail and make sure finished products are carefully finished				
Year 2 Year 5 and 6	Fairgrounds	• To look at a range of familiar products that use rotating parts. • To investigate ways of using electrical motors to create rotating parts. • To investigate ways of making a framework for a fairground ride. • To be able to design a fairground ride with a rotating part. • To be able to make a fairground ride following a design. • To be able to evaluate a finished product.	• Can you identify how rotation is used in fairground rides? • Do you understand how pulley and belt systems can be used to transfer movement? • Can you suggest ways in which ideas for frameworks could be developed to ideas for your own fairground ride designs? • Can you design an appropriate electrical circuit for your ride? • Can you work accurately and safely with a variety of tools, materials and electrical components? • Can you suggest ways you could improve your product if you were to make it again?		• Theme park leaflet • Advertising poster • Explanation- how ride works • Review	• Maths • Science – circuits
Fairground skills:		Y5: Make more complex designs to include belts and pulleys, and a combination of other mechanisms Y5: Carry out tests to see if their design works				

		Y5: Increasingly use testing to improve models and finished products Y6: Measure and cut out in precise detail, and make sure that finished products are carefully finished Y6: Make separate elements of a model before combining into the finished article Y6: What would improve it? Would different resources have improved their product? Y6: Can they use different kinds of circuits in their product to improve it? Y6: Can they incorporate a switch into their product?				
EXTRA UNIT	Bread	• To investigate and evaluate bread products according to their characteristics. • To learn how bread products are an important part of a balanced diet and can be eaten in different ways. • To find out which different ingredients are needed to make bread and how ingredients can be altered and mixed to create different effects. • To be able to design a new brand product for a particular purpose or event. • To be able to make bread based on a plan and design. • To be able to evaluate a finished product.	• Can you use appropriate vocabulary to describe bread products? • Can you use a recording sheet to complete a survey? • Can you weigh and measure accurately? • Can you explain how you will make your product? • Can you follow a design accurately? • Can you describe how you could make further improvements to your product if you were to make it again?		• Recipe • Magazine review	• Maths – measuring/ survey • Science – eating and digestion
Skills:		Y5: Work in a safe and hygienic way Y5: Use proportions when cooking by doubling and halving recipes Y6: Have they considered how their product could be marketed through packaging and advertising Y6: Test and evaluate commercial products, understanding how this information supports their own designs Y6: Can they refine their product after testing it Y6: Keep cost restraints in mind when selecting materials in design				

Year 5 Skills DT	Bridges	T-shirts	Fairground	Bread	Bird Box Builders
Developing, Planning and Communicating Ideas					
Can they survey their target audience and use this to generate ideas?					
Can they take a user's view into account when designing?					
Can they produce a detailed step-by-step plan for their design method?					
Can they suggest some alternative designs and compare the benefits and drawbacks to inform the design process and outcome?					
DESIGN AND DEVELOP					
Make more complex designs to include belts and pulleys, and a combination of other mechanisms					

Plan the order of work by thinking ahead					
Use sketches to show other ways of doing things – and then make choices					
Meet an identified need – e.g. a meal for an older person – by selecting ingredients or materials					
Use various sources of information and draw on them in design					
Working with tools, equipment, materials and components to make quality products					
Can they choose appropriate tools and materials to ensure that the final product will appeal to the audience?					
Can they use a range of tools and equipment with good accuracy and effectiveness, within established safety parameters?					
MAKING					
Carry out tests to see if their design works					
Make improvements from design suggestions					
Work in a safe and hygienic way					
Measure and cut precisely to millimetres					
Make stable and strong joins to stand the test of time					
Use proportions when cooking, by doubling and halving recipes					
Evaluating processes and products					
Can they continuously check that their design is effective and fit for purpose?					
Can they assess how well their product works in relation to the design criteria and the intended purpose and suggest improvements?					
Can they evaluate appearance and function against the original design criteria?					
PRODUCT AND EVALUATION					

Identify what is working well and what might be improved – and make choices from several alternatives					
Refine the quality of the finished product, including making annotations on the design					
Clarify ideas through drawing and modelling					
Increasingly use testing to improve models and finished products					
Textiles					
Can they consider the audience when choosing textiles?					
Can they make up a prototype first?					
Can they use a range of joining techniques?					
Can they devise a template or pattern for their product?					
Mechanical Components					
Can they refine their product after testing it?					
Construction					
Are their measurements accurate enough to ensure precision?					
Can they demonstrate that their product is strong and fit for purpose?					
Are they motivated to refine and further improve their product?					

Year 6 Skills DT	Biscuits /Xmas Fair	Bridges	Fashion Show	Fairground	Bread
Developing, Planning and Communicating Ideas					
Can they use a range of information to inform their design?					
Can they use market research to inform plans?					
Can they work within constraints?					
Can they justify their plan to someone else?					
Can they consider culture and society in their designs?					
Have they considered the use of the product when selecting materials?					

Have they thought about how their product could be marketed through packaging and advertising?					
DESIGN AND DEVELOP					
Keep cost constraints in mind when selecting materials in design					
Use their knowledge of –e.g.- science and art when designing					
Be aware of commercial aspects and incorporate these into their designs					
Design including hydraulics and pneumatics when where appropriate					
Draw scaled diagrams with increasing use of ratio Calculate the amount of materials needed use this to estimate cost					
Working with tools, equipment, materials and components to make quality products					
Can they choose appropriate tools and materials to ensure that the final product will appeal to the audience?					
Can they use a range of tools and equipment with good accuracy and effectiveness, within established safety parameters?					
MAKING					
Measure and cut out in precise detail, and make sure that finished products are carefully finished					
Make separate elements of a model before combining into the finished article					
Understand how an article might be mass produced					
Produce a simple instruction manual or handbook for their product					
Evaluating processes and products					
How well do they test and evaluate their final product?					
Is it fit for purpose?					
What would improve it?					
Would different resources have improved their product?					
Would they need more or different information to make it even better?					
Does their product meet all design criteria?					
PRODUCT AND EVALUATION					
Research products using the internet					
Test and evaluate commercial products, understanding how this information supports their own designs					

Evaluate a range of different sources of information such as advertising and handbooks					
Textiles					
Can they consider the audience when choosing textiles?					
Can they make up a prototype first?					
Can they use a range of joining techniques?					
Electrical and Mechanical Components					
Can they use different kinds of circuits in their product to improve it?					
Can they incorporate a switch into their product?					
Can they refine their product after testing it?					
Construction					
Are their measurements accurate enough to ensure precision?					
Can they demonstrate that their product is strong and fit for purpose?					
Are they motivated to refine and further improve their product?					