Oughtibridge Primary School
Design and Technology Long Term Plan

	Autumn Term	Spring Term	Summer Term
Foundation Stage	**Autumn 1** Children will learn to... • explore a range of large construction toys to build models Aim: to build models using Duplo, Lego and blocks. Children will learn to... • explore how to use a pair of scissors • hold scissors in their dominant hand Aim: to use scissors appropriately to make snips in paper. Children will learn to... • explore in the making area how to use masking tape, Sellotape and glue • explore how to join two materials together Aim: to join two materials together e.g. boxes, paper, card using glue or tape. Children will learn to... • explore threading of large beads and bobbins Aim: to be able to thread large objects onto laces.	**Spring 1** Children will learn to… • design and draw their own vehicle • label the materials they will choose to use to make the vehicle • join materials using glue and tape to construct a vehicle • evaluate their models and talk about their likes and dislikes Aim: to design, construct and evaluate a 3D vehicle.	**Summer 1** Children will learn to… • design and label their own moveable animal • learn how split pins work Aim: to make a moving animal using card.

Foundation Stage	**Autumn 2** Children will learn to... • explore a range of small construction toys to make models e.g Lego and Kinnex Aims: To build a model using construction materials. To connect construction together to make a model. Children will learn to... • practise using a knife and fork with malleable materials e.g. Playdough • practise using a knife to cut up vegetables Aim: to understand how to use a knife safely. Children will learn to... • design and make their own rocket or telescope Aim: to follow the TASC wheel steps to make a model. Children will learn to... • follow steps of a recipe, with an adult modelling the process • roll out dough and cut a shape to make a biscuit Aim: to be able to follow steps in a recipe to make star biscuits.	**Spring 2** Children will learn to… • explore different materials and their properties and complete investigations, e.g. do materials float or sink? • draw different ideas for the product that is being made • follow their design and material choices • use glue or tape to join the materials • talk about and evaluate their product with a friend Aim: to use a design to make a product and discuss the final product with a friend. Children will learn to... • follow a recipe with adult support • roll out dough and cut a shape to make a biscuit Aim: to be able to follow steps in a recipe to make a gingerbread man.	**Summer 2** Children will learn to… • whittle a stick to use for toasting a marshmallow • use a knife to cut fruits • thread fruits onto a stick Aim: to use a knife safely and independently to make a fruit kebab.

Year 1	Using the TASC wheel, children will learn to… • take inspiration from design throughout history by exploring how objects have been created, identifying likes and dislikes of designs and suggesting improvements to existing designs • identify the task • generate ideas and design products that have a clear purpose and an intended user • decide on a final design, using software to design some products • make a product, refining the design as work progresses • evaluate the product • communicate with others about the product • learn from the experience (e.g. What went well? What could be improved next time?)		
	Materials Children will learn to… ● cut materials safely using tools provided ● demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling) ● demonstrate and use a range of joining techniques (such as gluing or combining materials to strengthen) Aim: to design, make and evaluate a landmark/building for Sheffield using a variety of materials; such as cardboard and paper.	**Mechanics** Children will learn to… • create projects using levers Aim: to design, make and evaluate a moving picture.	**Mechanics** Children will learn to… ● create products using wheels Aim: to design, make and evaluate a model of transport that could reach the poles.

Year 2	Using the TASC wheel, children will learn to… • take inspiration from design throughout history by exploring how objects have been created, identifying likes and dislikes of designs and suggesting improvements to existing designs • identify the task • generate ideas and design products that have a clear purpose and an intended user • decide on a final design, using software to design some products • make a product, refining the design as work progresses • evaluate the product • communicate with others about the product • learn from the experience (e.g. What went well? What could be improved next time?)		
	Constructions Children will learn to... • use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products Aim: to design, make and evaluate a model of a Tudor house with wooden frames, in line with our learning about the Great Fire of London.	**Textiles** Children will learn to… • shape textiles using templates • join textiles using running stitch • colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing) Aim: to design, make and evaluate a puppet of a significant figure.	**Food Technology** Children will learn to... • cut, peel or grate ingredients safely and hygienically • measure or weigh using measuring cups or electronic scales • assemble or cook ingredients • model designs using software Aim: to design, make and evaluate a healthy fruit salad.

Year 3	Using the TASC wheel, children will learn to… • take inspiration from design throughout history by identifying some of the great designers in all areas of the study (including pioneers in horticultural techniques), improving upon existing designs (giving reasons for choices), and by disassembling products to understand how they work • identify the task • generate ideas and design products with purpose by identifying opportunities to design • decide on a final design, using software to design and represent product designs • make a product by working effectively (such as by carefully selecting materials) • make a product, refining work and techniques as work progresses, continually evaluating product designs • evaluate the product • communicate with others about the product • learn from the experience (e.g. What went well? What could be improved next time?)		
	Food Technology Children will learn to... • prepare ingredients hygienically using appropriate utensils • measure ingredients • follow a recipe Aim: to design, make and evaluate flapjack, using a recipe and appropriate ingredients and utensils.	**Materials** Children will learn to... • cut materials safely by selecting appropriate tools • measure and mark out • apply appropriate cutting and shaping techniques • select appropriate joining techniques Aim: to design, make and evaluate a product incorporating a variety of measuring, cutting and joining techniques.	**Construction** Children will learn to... • choose suitable materials to construct products • strengthen materials using suitable techniques Aim: to design, make and evaluate a pyramid, linking to our Ancient Egypt topic.

Year 4	Using the TASC wheel, children will learn to… • take inspiration from design throughout history by identifying some of the great designers in all areas of the study (including pioneers in horticultural techniques), improving upon existing designs (giving reasons for choices), and by disassembling products to understand how they work • identify the task • generate ideas and design products with purpose by identifying opportunities to design • decide on a final design, using software to design and represent product designs • make a product by working effectively (such as by carefully selecting materials) • make a product, refining work and techniques as work progresses, continually evaluating product designs • evaluate the product • communicate with others about the product • learn from the experience (e.g. What went well? What could be improved next time?)		
	Mechanics Children will learn to…. • use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms and pulleys). Aim: to design, make and evaluate a storybook that has moving mechanisms.	**Textiles** Children will learn to... • understand the need for a seam allowances • join textiles with appropriate stitching • select the most appropriate techniques to decorate textiles Aim: to design, make and evaluate a purse by exploring sustainability and using recycled materials.	**Computing** Children will learn to... • control and monitor models using software designed for this purpose Aim: to design, make and evaluate a treasure box, using computer aided design software.

Year 5	Using the TASC wheel, children will learn to… • take inspiration from design throughout history by combining elements of design from a range of inspirational designers throughout history, giving reasons for choice • take inspiration from design throughout history by creating innovative designs that improve upon existing products and by evaluating the design of products so as to suggest improvements to the user experience • identify the task • generate ideas and design products with the user in mind, motivated by the service a product will offer (rather than simply for profit) • decide on a final design, using prototypes, cross-sectional diagrams and computer aided designs to present designs • make products through stages of prototypes, making continual refinements and ensuring products have high-quality finish, using art skills where appropriate • evaluate the product • communicate with others about the product • learn from the experience (e.g. What went well? What could be improved next time?)		
	Mechanics Children will learn to... • convert rotary motion to linear using cams • use innovative combinations of mechanics in product designs Aim: to design, make and evaluate a cam mechanism inspired by the theme of 'Space'.	**Construction and Materials** Children will learn to... • show an understanding of the qualities of materials to choose appropriate tools to cut and shape • cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting) • develop a range of practical skills to create products (including cutting, gluing and sanding) Aim: to design, make and evaluate a wand using a variety of practical skills.	**Construction (including CAD)** Children will learn to... • use computer aided designs to present final designs • develop a range of practical skills to create products (such as drilling and nailing) Aim: to design, make and evaluate a nail art product using a variety of practical skills.

<table>
<tr><td rowspan="2">Year 6</td><td colspan="3">Using the TASC wheel, children will learn to…
take inspiration from design throughout history by combining elements of design from a range of inspirational designers throughout history, giving reasons for choice
take inspiration from design throughout history by creating innovative designs that improve upon existing products and by evaluating the design of products so as to suggest improvements to the user experience
identify the task
generate ideas and design products with the user in mind, motivated by the service a product will offer (rather than simply for profit)
decide on a final design, using prototypes, cross-sectional diagrams and computer aided designs to present designs
make products through stages of prototypes, making continual refinements and ensuring products have high-quality finish, using art skills where appropriate
evaluate the product
communicate with others about the product
learn from the experience (e.g. What went well? What could be improved next time?)</td></tr>
<tr><td><u>Textiles</u>
Children will learn to...
create objects (such as a cushion) that employ a seam allowance
join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration)
use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion)
show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut out paper)
cut materials with precision and refine the finish with appropriate tools (such as a more precise scissor cut after roughly cutting out a shape)
Aim: to design, make and evaluate a product using various stitching skills, linking to our ‘Make Do and Mend’ project.</td><td><u>Food Technology</u>
Children will learn to…
understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms)
measure ingredients accurately and to scale up or down from a recipe
demonstrate a range of baking and cooking techniques
create recipes, including ingredients, methods, cooking times and temperatures
Aim: to design, make and evaluate a crumble (inspired from the text Holes) by using a recipe accurately.</td><td>Design and Technology is not taught this term</td></tr>
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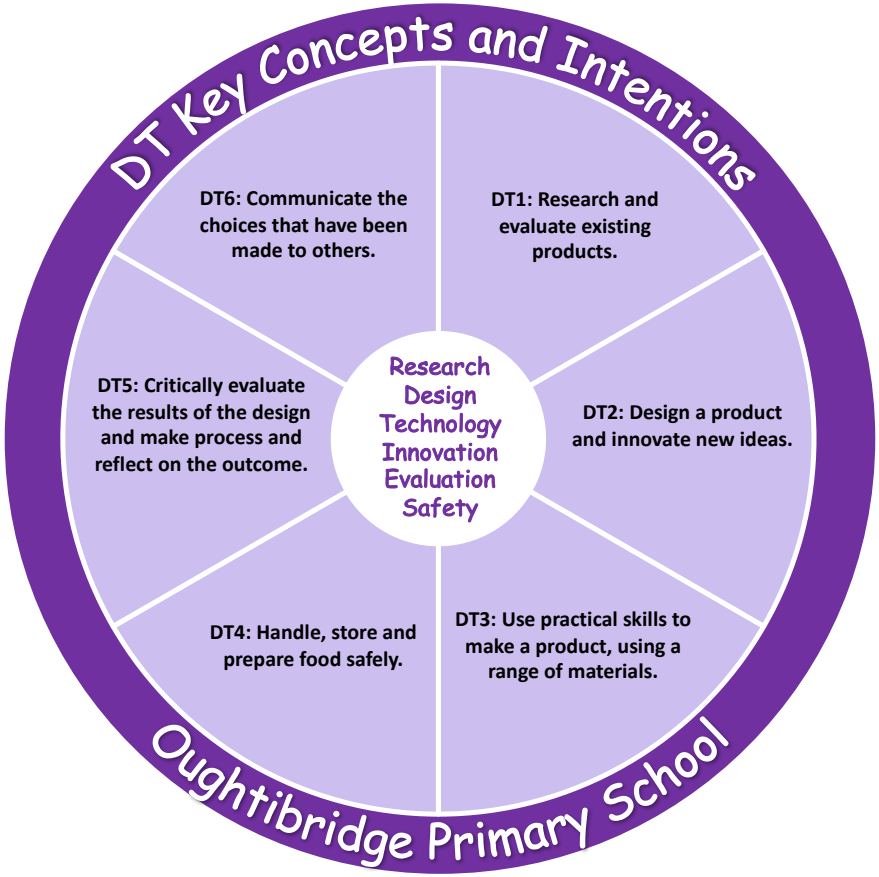

Research – How do designers take inspiration from existing products?

Design – How do designs show the function and look of a product?

Technology – How is Scientific knowledge used to solve problems in different communities?

Innovation – How do people create new concepts and ideas and use these to make improvements to our lives?

Evaluation – How can reflecting on what we do lead to further improvements?

Safety – How can we make sure that we are all safe and why is this important?