



The Harlington and Sundon Academy Trust
Harlington Lower School – Design and Technology Curriculum Overview and Skills Progression



	Terms	ELGs	Skills	Impact by the end of the year
YEAR R	Autumn - Ourselves / Our World in Autumn: Collage, Christmas stockings, decorating biscuits, baking bread, make vegetable soup.	<ul style="list-style-type: none"> Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. 	<ul style="list-style-type: none"> To experiment to create different textures. To understand that different media can be combined to create new effects. To manipulate materials to achieve a planned effect. To construct with a purpose in mind, using a variety of resources. To use simple tools and techniques competently and appropriately. To select appropriate resources and adapt work where necessary. To select tools and techniques needed to shape, assemble and join materials they are using. Maintain attention, concentration and sit quietly during appropriate activity. To use talk to organise, sequence and clarify thinking, ideas, feelings and events. 	Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.
	Spring – Pole to Pole: Polar bear / penguin models, Igloos, Fruit tasting, Chinese dragons, fans.	<ul style="list-style-type: none"> Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. 	<ul style="list-style-type: none"> To experiment to create different textures. To understand that different media can be combined to create new effects. To manipulate materials to achieve a planned effect. To construct with a purpose in mind, using a variety of resources. To use simple tools and techniques competently and appropriately. To select appropriate resources and adapt work where necessary. To select tools and techniques needed to shape, assemble and join materials they are using. Maintain attention, concentration and sit quietly during appropriate activity. To use talk to organise, sequence and clarify thinking, ideas, feelings and events. 	
	Summer – Once Upon a Time / Minibeasts: Castles, Butterfly cakes, Clay Snails, Making spider webs.	<ul style="list-style-type: none"> Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. 	<ul style="list-style-type: none"> To experiment to create different textures. To understand that different media can be combined to create new effects. To manipulate materials to achieve a planned effect. To construct with a purpose in mind, using a variety of resources. To use simple tools and techniques competently and appropriately. To select appropriate resources and adapt work where necessary. To select tools and techniques needed to shape, assemble and join materials they are using. Maintain attention, concentration and sit quietly during appropriate activity. To use talk to organise, sequence and clarify thinking, ideas, feelings and events. 	
	Topics	National Curriculum Objectives	Skills	Impact by the end of the year
Year 1	Autumn - Fabric buntings	<ul style="list-style-type: none"> Design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking; drawing, templates, mock-ups and, where 	<ul style="list-style-type: none"> Begin to select tools and materials; use correct vocabulary to name and describe them. Build structures, exploring how they can be made stronger, stiffer and more stable. With help measure, cut and score with some accuracy. Learn to use hand tools safely and appropriately. 	DT involves learning about the designed and made world and how things work,



Harlington Lower School – Design and Technology Curriculum Overview and Skills Progression

		<p>appropriate, information and communication technology.</p> <ul style="list-style-type: none"> Select from and use a range of tools and equipment to perform practical tasks. Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria. Describing the differences and similarities between different practices and disciplines and making links to their own work. 	<ul style="list-style-type: none"> Start to assemble, join and combine materials in order to make a product Demonstrate how to cut, shape and join fabric to make a simple product. Use basic sewing techniques. Start to choose and use appropriate finishing techniques based on own ideas 	<p>and learning to design and make functional products for particular purposes and users. Children acquire and apply knowledge and understanding of materials, structures, existing products, quality and health and safety.</p>
	Spring - Moving Pictures	<ul style="list-style-type: none"> Describing the differences and similarities between different practices and disciplines and making links to their own work. Use a range of materials creatively to design and make products. Have an understanding of simple mechanisms through designing and making. 	<ul style="list-style-type: none"> Select tools and materials; use correct vocabulary to name and describe them. Build structures, exploring how they can be made stronger, stiffer and more stable. With help measure, cut and score with some accuracy. Learn to use hand tools safely and appropriately. Start to assemble, join and combine materials in order to make a product. Start to choose and use appropriate finishing techniques based on own ideas <p>Start to understand that mechanical systems such as levers</p>	
	Summer - Dips and Dippers	<ul style="list-style-type: none"> Use a range of materials creatively to design and make products. Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from. 	<ul style="list-style-type: none"> Basic food handling, hygienic practices and personal hygiene, including how to control risk by following simple instructions. To use a variety of simple tools and equipment. Know that fruit and vegetables have nutritional value and are an important part of our diet. Understand that food processing can affect appearance, texture, odour and taste. 	

	Topics	National Curriculum Objectives	Skills	Impact by the end of the year
Year 2	Autumn - Fabric faces	<ul style="list-style-type: none"> Use a range of materials creatively to design and make products. Use drawing to develop and share their ideas, experiences and imagination. Develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space. Describing the differences and similarities between different practices and disciplines and making links to their own work. 	<ul style="list-style-type: none"> Begin to select tools and materials; use correct vocabulary to name and describe them. Build structures, exploring how they can be made stronger, stiffer and more stable. With help measure, cut and score with some accuracy. Learn to use hand tools safely and appropriately. Start to assemble, join and combine materials in order to make a product. Start to choose and use appropriate finishing techniques based on own ideas 	<p>DT involves learning about the designed and made world and how things work, and learning to design and make functional products for particular purposes and users. Children continue to develop and apply knowledge and understanding of materials,</p>
	Spring –Vehicles	<ul style="list-style-type: none"> Use a range of materials creatively to design and make products. Use drawing, to develop and share their ideas, experiences and imagination. 	<ul style="list-style-type: none"> Select tools and materials; use correct vocabulary to name and describe them. Build structures, exploring how they can be made stronger, stiffer and more stable. With help measure, cut and score with some accuracy. 	



Harlington Lower School – Design and Technology Curriculum Overview and Skills Progression

	<ul style="list-style-type: none"> Develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space. Describing the differences and similarities between different practices and disciplines and making links to their own work. 	<ul style="list-style-type: none"> Learn to use hand tools safely and appropriately. Start to assemble, join and combine materials in order to make a product. Start to choose and use appropriate finishing techniques based on own ideas Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement. 	<p>mechanisms structures, existing products, quality and health and safety. The skills learned also help with learning across the curriculum. Knowledge about the properties of materials helps in science and the practice of measuring helps in maths.</p>
Summer – sensational salads	<ul style="list-style-type: none"> Use a range of materials creatively to design and make products. Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from. 	<ul style="list-style-type: none"> Basic food handling, hygienic practices and personal hygiene, including how to control risk by following simple instructions. To use a variety of simple tools and equipment. Know that fruit and vegetables have nutritional value and are an important part of our diet. Understand that food processing can affect appearance, texture, odour and taste. 	

	Topics	National Curriculum Objectives	Skills	Impact by the end of the year
Year 3	Autumn – Edible Garden	<ul style="list-style-type: none"> 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. Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups Select from and use a wider range of tools and equipment to perform practical tasks Select from and use a wider range of materials and components, including ingredients, according to their functional properties and aesthetic qualities Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 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 	<ul style="list-style-type: none"> Start to know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing and spreading. Start to understand that a healthy diet is made up from a variety and balance of different food and drink, as depicted in ‘The Eat well plate’ Begin to know that to be active and healthy, food and drink are needed to provide energy for the body. 	<p>Children continue to acquire and apply knowledge and understanding of materials and components, mechanisms, structures, existing products, quality and health and safety. The skills learned in D&T also help with learning across the curriculum. Knowledge about the properties of materials helps in science and the practice of measuring accurately helps in maths. These skills help in IT through the children’s use of computer control and, naturally, in art and design.</p>
	Spring – Photo frames	<ul style="list-style-type: none"> Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and where possible, computer-aided design 	<ul style="list-style-type: none"> Confidently make labelled drawings from different views showing specific features. • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail. Identify the strengths and areas for development in their ideas and products. 	



Harlington Lower School – Design and Technology Curriculum Overview and Skills Progression

		<ul style="list-style-type: none"> Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately Select from and use a wider range of materials and components, including construction materials and textiles according to their functional properties and aesthetic qualities Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 	<ul style="list-style-type: none"> When planning consider the views of others, including intended users, to improve their work. When planning explain their choice of materials and components including function and aesthetics. 	DT helps develop children’s skills through collaborative working and problem-solving, and knowledge in design, materials, structures and mechanisms. They are encouraged to be creative and innovative, and are actively encouraged to think about important issues such as sustainability.
Summer – Fly me a kite		<ul style="list-style-type: none"> Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and where possible, computer-aided design Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately Select from and use a wider range of materials and components, including construction materials and textiles according to their functional properties and aesthetic qualities Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 	<ul style="list-style-type: none"> With growing confidence generate ideas for an item, considering its purpose and the user/s. Start to order the main stages of making a product. Identify a purpose and establish criteria for a successful product. Understand how well products have been designed, made, what materials have been used and the construction technique. Understand how to reinforce and strengthen a 3D framework. Start to measure, tape or pin, cut and join fabric with some accuracy. Now sew using a range of different stitches, to weave and knit 	

	Topics	National Curriculum Objectives	Skills	Impact by the end of the year
Year 4	Autumn – Battery operated lights	<ul style="list-style-type: none"> Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and where possible, computer-aided design Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups 	<ul style="list-style-type: none"> To understand how to form an electrical circuit. To design a product to fit a brief Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. Apply their understanding of how to strengthen, stiffen and reinforce more complex structures Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] 	Children continue to acquire and apply knowledge and understanding of materials and components, mechanisms and control systems, structures, existing products, quality and health and safety. The skills learned in D&T also help with learning across the curriculum. Knowledge about the properties of materials helps in science and the practice of measuring accurately helps in maths. These skills help in IT through the children’s use of computer control and, naturally, in art and design. DT helps develop children’s skills through collaborative working and problem-solving, and knowledge in design, materials, structures, mechanisms and electrical control. They are encouraged to be creative and innovative, and are actively encouraged to think about important issues such as sustainability and enterprise.



The Harlington and Sundon Academy Trust

Harlington Lower School – Design and Technology Curriculum Overview and Skills Progression



Skills	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Developing, planning and communicating ideas	<ul style="list-style-type: none"> Explain what they are making and which materials they are using. Select materials from a limited range that will meet a simple design criteria e.g. shiny. Select and name the tools needed to work the materials e.g. scissors for paper. Explore ideas by rearranging materials. Describe simple models or drawings of ideas and intentions. Discuss their work as it progresses. 	<ul style="list-style-type: none"> Begin to draw on their own experience to help generate ideas and research conducted on criteria. Begin to understand the development of existing products: What they are for, how they work, materials used. Start to suggest ideas and explain what they are going to do. Understand how to identify a target group for what they intend to design and make based on a design criteria. Begin to develop their ideas through talk and drawings. Make templates and mock ups of 	<ul style="list-style-type: none"> Start to generate ideas by drawing on their own and other people's experiences. Begin to develop their design ideas through discussion, observation, drawing and modelling. Identify a purpose for what they intend to design and make. Understand how to identify a target group for what they intend to design and make based on a design criteria. Develop their ideas through talk and drawings and label parts. Make templates and mock ups of their ideas in card and paper or using ICT. 	<ul style="list-style-type: none"> With growing confidence generate ideas for an item, considering its purpose and the user/s. Start to order the main stages of making a product. Identify a purpose and establish criteria for a successful product. Understand how well products have been designed, made, what materials have been used and the construction technique. Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. Start to understand whether products can be 	<ul style="list-style-type: none"> Start to generate ideas, considering the purposes for which they are designing- link with Mathematics and Science. Confidently make labelled drawings from different views showing specific features. Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail. Identify the strengths and areas for development in their ideas and products. When planning consider the views of others, including intended users, to improve their work. Learn about inventors, designers, engineers, chefs and 	<ul style="list-style-type: none"> Start to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD. Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. With growing confidence apply a range of finishing techniques, including those from art and design Draw up a specification for their design- link with 	<ul style="list-style-type: none"> Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and CAD. Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Accurately apply a range of finishing techniques, including those from art and design. Draw up a specification for their design- link with Mathematics and Science. Plan the order of their work, choosing appropriate materials, tools and techniques. Suggest alternative methods of making if the first attempts fail. Identify the strengths and areas for development in their ideas and products. Know how much products cost to make, how



Harlington Lower School – Design and Technology Curriculum Overview and Skills Progression

		<p>their ideas in card and paper or using ICT.</p>		<p>recycled or reused.</p> <ul style="list-style-type: none"> • Know to make drawings with labels when designing. • When planning explain their choice of materials and components including function and aesthetics. 	<p>manufacturers who have developed ground-breaking products.</p> <ul style="list-style-type: none"> • When planning explain their choice of materials and components according to function and aesthetic 	<p>Mathematics and Science.</p> <ul style="list-style-type: none"> • Use results of investigations, information sources, including ICT when developing design ideas. • With growing confidence select appropriate materials, tools and techniques. 	<p>sustainable and innovative they are and the impact products have beyond their intended purpose.</p>
<p>Working with tools, equipment, materials and components to make quality products</p>	<ul style="list-style-type: none"> • Begin to create their design using basic techniques. • Start to build structures, joining components together. • Look at simple hinges, wheels and axles. Use technical vocabulary when appropriate. • Begin to use scissors to cut straight and curved edges and hole pinches to punch holes. • Explore using/ holding basic tools such as a saw or hammer. • Use adhesives to join material. 	<ul style="list-style-type: none"> • Begin to make their design using appropriate techniques. • Begin to build structure exploring how they can be made stronger, stiffer and more stable. • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. • With help measure, mark out, cut and shape a range of materials. • Explore using tools e.g. 	<ul style="list-style-type: none"> • Begin to select tools and materials; use correct vocabulary to name and describe them. • Build structures, exploring how they can be made stronger, stiffer and more stable. • With help measure, cut and score with some accuracy. • Learn to use hand tools safely and appropriately. • Start to assemble, join and combine materials in order to make a product. • Demonstrate how to cut, shape and join fabric to make a simple product. Use 	<ul style="list-style-type: none"> • Select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles, food ingredients, mechanical components and electrical components. • Explain their choice of tools and equipment in relation to the skills and techniques they will be Using. • Start to understand that mechanical and electrical systems have an input, process and output. 	<ul style="list-style-type: none"> • Select a wider range of tools and techniques for making their product safely. • Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. • Start to join and combine materials and components accurately in temporary and permanent ways. • Know how mechanical systems such as cams or pulleys or gears create movement. • Understand how more complex electrical circuits 	<ul style="list-style-type: none"> • Select appropriate materials, tools and techniques e.g. cutting, shaping, joining and finishing, accurately. • Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. • Understand how mechanical systems such as cams or pulleys or gears create movement. 	<ul style="list-style-type: none"> • Confidently select appropriate tools, materials, components and techniques and use them. • Use tools safely and accurately. • Assemble components to make working models. • Aim to make and to achieve a quality product. • With confidence pin, sew and stitch materials together to create a product. • Demonstrate when make modifications as they go along. • Construct products using permanent joining techniques. • Understand how mechanical systems such as cams or pulleys or gears create movement.



Harlington Lower School – Design and Technology Curriculum Overview and Skills Progression

		<p>scissors and a hole punch safely.</p> <ul style="list-style-type: none"> • Begin to assemble join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. • Begin to use simple finishing techniques to improve the appearance of their project 	<p>basic sewing techniques.</p> <ul style="list-style-type: none"> • Start to choose and use appropriate finishing techniques based on own ideas. 	<ul style="list-style-type: none"> • Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement. • Know how simple electrical circuits and components can be used to create functional products. • Measure, mark out, cut, score and assemble components with more accuracy. • Start to work safely and accurately with a range of simple tools. • Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work. • Start to measure, tape or pin, cut and join fabric with some accuracy. 	<p>and components can be used to create functional products.</p> <ul style="list-style-type: none"> • Continue to learn how to program a computer to monitor changes in the environment and control their products. • Understand how to reinforce and strengthen a 3D framework. • Now sew using a range of different stitches, to weave and knit. 	<ul style="list-style-type: none"> • Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. • Understand that mechanical and electrical systems have an input, process and output. • Begin to measure and mark out more accurately. • Demonstrate how to use skills in using different tools and equipment safely and accurately • With growing confidence cut and join with accuracy to ensure a good-quality finish to the product • Weigh and measure accurately (time, dry ingredients, liquids). Use 	<ul style="list-style-type: none"> • Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. • Know how to reinforce and strengthen a 3D framework. • Understand that mechanical and electrical systems have an input, process and output. • Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.
--	--	---	--	--	---	---	--



Harlington Lower School – Design and Technology Curriculum Overview and Skills Progression

						finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT	
Evaluating processes and products	<ul style="list-style-type: none"> Say what they like and do not like about items they have made and attempt to say why. Begin to talk about their designs as they develop and identify good and bad points. Start to talk about changes made during the making process. Discuss how closely their finished products meet their design criteria. 	<ul style="list-style-type: none"> Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria). When looking at existing products explain what they like and dislike about Products and why. Begin to evaluate their products as they are developed identifying strengths and possible changes they might make. 	<ul style="list-style-type: none"> Evaluate their work against their design criteria. Look at a range of existing products explain what they like and dislike about products and why. Start to evaluate their products as they are developed, identifying strengths and possible changes they might make With confidence talk about their ideas, saying what they like and dislike about them. 	<ul style="list-style-type: none"> Start to evaluate their product against original design criteria e.g. how well it meets its intended purpose Begin to disassemble and evaluate familiar products and consider the views of others to improve them. Evaluate the key designs of individuals in design and technology has helped shape the world 	<ul style="list-style-type: none"> Evaluate their products carrying out appropriate tests. Start to their work both during and at the end of the assignment. Be able to disassemble and evaluate familiar products and consider the views of others to improve them. Evaluate the key designs of individuals in design and technology has helped shape the world 	<ul style="list-style-type: none"> Start to evaluate a product against the original design specification and by carrying out tests. Evaluate their work both during and at the end of the assignment. Begin to evaluate it personally and seek evaluation from others. Evaluate the key designs of individuals in design and technology has helped shape the world. 	<ul style="list-style-type: none"> Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. Evaluate their work both during and at the end of the assignment. Record their evaluations using drawings with labels. Evaluate against their original criteria and suggest ways that their product could be improved. Evaluate the key designs of individuals in design and technology has helped shape the world