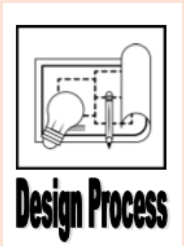
Skill Progression

Subject: Design Technology

Subject Leader: Kim Lambert

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	KS3 NC Objectives
Autumn Project	**Topics:** Me and My Family Celebrations What's the weather? Growing/Farm Adventures Colour, Colour Everywhere	Moving Mechanisms	Textiles	Textiles	Moving Mechanisms	Electrical Systems	Textiles	Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and makingThey should work on a range of domestic, local and industrial contexts.
Spring Project		Cooking and Nutrition	Cooking and Nutrition	Cooking and Nutrition	Cooking and Nutrition	Cooking and Nutrition	Cooking and Nutrition	
Summer Project		Structures	Moving Mechanisms	Structures	Electrical Systems	Structures	Mechanical Systems	
Developing, planning and communicating ideas.  	**Physical Development** Begin to show accuracy and care when drawing.	Draw on their own experiences to help generate ideas and research.	Identify a purpose for what they intend to design and make.	Identify a purpose and establish criteria for a successful product.	Identify a purpose and establish criteria for a successful product.	Use results of investigations, information sources, including ICT when developing a criteria. .	Develop a design specification.	Use research and exploration, such as the study of different cultures, to identify and understand user needs. Identify and solve their own design problems and understand how to reformulate problems given to them.

	Communication and Language Participate in small group, class and one- to one discussions, offering their own ideas, using recently introduced vocabulary.	Suggest ideas and discuss what they are going to do.		Generate ideas by considering its purpose and the users.	Develop a clear idea of what has to be done, planning how to use materials, equipment and processes	Produce a detailed step-by-step plan	Use market research to inform plans	Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations. Use a variety of approaches [for example, biomimicry and user-centred design], to generate creative ideas and avoid stereotypical responses. Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.
		Develop their design ideas applying their earlier research to create simple models, including sketches and mock ups.	Generate ideas by drawing on their own and other people's experiences	Start to order the main stages of making a product.	Consider the views of others (including intended users) to improve their work.	Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways.	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.	
		Explain how they intend to fix simple materials.	Identify simple design criteria	Explore, develop and communicate design proposals by modelling ideas.	Consider how to present their product in an interesting way.	Explain how their product will appeal to the audience.	Show consideration to culture, sustainability and society in design.	
			Develop their design ideas through discussion, drawing and modelling.	Communicate ideas through annotated sketches and computer aided designs	Build on designing techniques to use cross- sectional and exploded diagrams.	Explore a range of design techniques for example, prototypes, computer aided design, pattern pieces, cross-sectional designs and exploded diagrams.	Select appropriate design strategies, for example, prototypes, computer aided design, pattern pieces, cross-sectional designs and exploded diagrams.	
	Personal, Social and Emotional Development Be confident to try new activities and show independence,	Begin to select tools and materials to create their design.	Make their design using appropriate tools and techniques – use vocabulary to name and describe them.	Select from a wider range of tools to perform practical tasks.	Select from a wide range of tools to perform practical tasks.	Select from a wide range of tools to perform practical task, for example, cutting, shaping, joining and finishing accurately	Confidently select appropriate materials to make their products.	Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture

Working with tools, equipment, materials and components to make quality products.  	resilience and perseverance in the face of challenge. Work and play cooperatively and take turns with others.			Explore how to strengthen, stiffen and reinforce structures. . Explore how computing can programme products – explore through computing.			Understand how mechanical systems (cams, gears and pulleys) create movement.	Select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions.
		Assemble, join and combine materials together using a variety of temporary methods, e.g glue and tape.	Assemble, join and combine materials and components together using a variety of methodsFor example, glue, tape, running stitch.	Understand how to reinforce and strengthen a 3D framework.	Start to join and combine materials and components accurately in temporary and permanent ways.	Measurement, cut and join accurately to ensure that everything is precise.	Analyse the effectiveness of mechanical and electrical systems in their products and alter where necessary.	Understand how more advanced mechanical systems used in their products enable changes in movement and force. Understand how more advanced electrical and electronic systems can be powered and used in their products [for example, circuits with heat, light, sound and movement as inputs and outputs] Apply computing and use electronics to embed
		With support, measure, cut and shape a range of materials.	Use simple mechanisms in their products (wheels and axles).	Accurately measure to cut and make holes.	Understand how electrical circuits and components can be used to create functional products.	Know how more complex electrical circuits and components can be used to create functional products.	Apply their understanding of computer programming to monitor and control their products.	

	Expressive Arts and Design Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	Identify how structures can be made stronger, stiffer and more stable.	Use simple sewing techniques, e.g running stitch. .	Use a range of stitches to weave and sew.	Understand how electrical circuits and components can be used to create functional products.	Incorporate switches to turn on and off models made.	Use a wide range of sewing techniques.	intelligence in products that respond to inputs
	Physical Development Negotiate space and obstacles safely, with consideration for themselves and others. Use a range of small tools, including scissors. Begin to show accuracy and care when drawing. Demonstrate strength, balance and coordination when playing.	Explore how simple mechanisms are used in products (levers and sliders).	With support, measure, cut and shape with some accuracy.	Tape, pin, cut and join fabric with some accuracy.	Include simple mechanical systems in products (levers, linkages or pneumatic systems) to create movement.	Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.	With confidence pin, sew and stitch materials together to create a product.	

Evaluating processes and products  	**Self-Regulation** Give focused attention to what the teacher says, show ability to follow instructions involving several ides and actions.	Begin to understand the development of existing products, - how they work, what materials are used.	State what they like and dislike about familiar products.	Evaluate their product against original design criteria e.ghow well it meets its intended purpose.	Develop and evaluate their design criteria on an intended purpose and design criteria. .	Develop and evaluate their design criteria on an intended purpose and design criteria. Justify and explain products in relation to the audience and purpose	Analyse the effectiveness of their product and design specification in relation to the audience and purpose. .	Analyse the work of past and present professionals and others to develop and broaden their understanding Investigate new and emerging technologies Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.
		Evaluate their product by discussing how well it works in relation to the purpose.	Evaluate against their design criteria.	Investigate similar products to support devise a design criteria.	Evaluate their product against their design criteria.	Evaluate their product against their design criteria.	Evaluate their product by conducting tests linked to the design specification.	
	Listening, Attention and Understanding Listen attentively and respond to what they hear with relevant questions, comments and actions when read to and during class discussions and small group interactions. Make comments about what they have heard and ask questions to clarify their understanding	Evaluate their products as they are developed, identifying strengths and possible changes they might make.	Evaluate their products as they are developed, identifying strengths and possible changes they might make.		Evaluate familiar products and implement changes to their design.	Implement changes based on other people's suggestions.	Disassemble and evaluate familiar products implementing changes to their design.	

	Expressive Arts and Design Share their creations, explaining the process they have used.	Evaluate their product by answering questions about what they have made and how they have gone about it.	Talk about their ideas, saying what they like and dislike about them, suggesting how it could be improved.	Explore how key events and individuals in DT have helped shape the world.	Explore how key events and individuals in DT have helped shape the world.	Understand how events and key individuals have shaped the world.	Evaluate how the key designs of individuals in design and technology have helped shape the world.	
Cooking and Nutrition  	**Understanding the World** Explore the world around them, making observations and drawing pictures of animals and plants. Understand some important processes and changes in the natural world around them, including the seasons and the changing states of matter.	Understand that fruits and vegetables are grown from plants.	Know that food has to be farmed, grown elsewhere (e.g home).	Begin to know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish).	Know about a range of fresh and processed ingredients appropriate to project and whether they caught, grown or reared.	Understand about seasonality in relation to food products and transportation of food across the UK, Europe and the wider world.	Understand Fairtrade links can affect society.	Understand the source, seasonality and characteristics of a broad range of ingredients Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]. Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet. Understand and apply the principles of nutrition and health
	Physical Development Use a range of small tools, including scissors, paintbrushes and cutlery.	Begin to develop peeling and chopping, grating skills.	Begin to use techniques such as cutting, chopping peeling, grating.	Develop skills including mixing, kneading and baking.	Be able to use a range of technique such as peeling, chopping (bridge technique), slicing, grating, kneading and baking.	Begin to select appropriate techniques for products including grating, peeling, chopping (bridge and claw technique) and cooking.	Select appropriate techniques including peeling, chopping, slicing, grating, mixing/whisking, kneading and baking.	

	Personal Social and Emotional Development Manage their own basic hygiene and personal needs, understanding the importance of healthy food choices.	Identify healthy and unhealthy foods.	Name and sort foods into the five groups in 'The Eat Well plate.'	Understand the importance of a balanced diet using 'The Eat Well Plate'.	Plan and make a savoury dish using principles of 'The Eat Well Plate'.	Know how processed and fresh food can positively and negatively impact health.	Make informed choices about ingredients based on knowledge of a healthy diet.	