	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4 (Low C)	LEVEL 5 (High C, Low B)	LEVEL 6 (High B)	LEVEL 7 (A)	LEVEL 8 (A*)	LEVEL 9 (A*)
			YEAR 7						
				YEAR 8					
					YEAR 9				
						YEAR 10			
						YEAR 11			
DESIGNING									
Understanding contexts, users and purposes	• work confidently within a range of relevant domestic, local and industrial contexts, such as imaginary, story-based, home, school, gardens playgrounds, local community, industry and the wider environment. • state what products they are designing and making. • say whether their products are for themselves or other users. • describe what their products are for. • say how their products will work. • say how they will make their products suitable for their intended users. • use simple design criteria to help develop their ideas.	• work confidently within a range of relevant domestic, local and industrial contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment. Describe the purposes of products Indicate the design features of their products that will appeal to users Explain how parts of the product work. Carry out research using, surveys, interviews, questionnaires and web – based sources. Identify the needs, wants and preferences of particular individuals and groups.	• work confidently within a range of relevant domestic, local and industrial contexts, such as the home, health, leisure, culture, engineering, manufacturing, construction, food, energy, agriculture and fashion • take creative risks when making design decisions • analyse where human values may conflict and compromise has to be achieved						
			• develop design specifications to guide their thinking • use research to identify and understand user needs • identify and solve their own design problems	• develop detailed design specifications to guide their thinking • use research including the study of different cultures, to identify and understand user needs • identify and solve their own more complex design problems	• develop design specifications that include a wider range of requirements such as environmental, aesthetic, cost, maintenance, quality and safety • research the health and wellbeing, cultural, religious and socio-economic contexts of their intended users • understand how to reformulate design problems given to them	• develop detailed design specifications that include a wider range of requirements such as environmental, aesthetic, cost, maintenance, quality and safety • use a range of methods to research the health and wellbeing, cultural, religious and socio-economic contexts of their intended users • understand how to reformulate design problems in different ways			
Generating, developing, modelling and communicating ideas	• Generate ideas by drawing on their experiences. • Use knowledge of existing products to help come up with ideas. • Develop and communicate ideas by talking and drawing. • Model ideas by exploring materials, components and construction kits and by making templates and mock ups. • Use information and communication technology where appropriate, to develop and communicate ideas.	Share and clarify ideas through discussion Model ideas using prototypes and pattern pieces Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate ideas. Generate realistic ideas, focusing on the needs of the user. Generate innovative ideas, focusing on the needs of the user.	• use 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 bio-mimicry and user-centred design, to generate creative ideas and avoid stereotypical responses • decide which design criteria clash and determine which should take priority • develop and communicate design ideas using annotated sketches • produce 3D models to develop and communicate ideas • use mathematical modelling to indicate likely performance before using physical materials and components, for instance when developing circuits or gearing systems • give oral and digital presentations and use computer-based tools						
			• use 2D packages to model their ideas • produce models of their ideas using CAM	• use 2D and begin to use 3D CAD packages to model their ideas • produce models of their ideas using CAM to test out their ideas	• use 3D CAD to model their ideas • use CAD to validate their designs in advance of manufacture	• use 3D CAD to model, develop and present their ideas • use CAD and related software packages to validate their designs in advance of manufacture			
MAKING									
Planning	• Plan by suggesting what to do next • Select from a range of tools and equipment, explaining their choices. • Select from a range of materials and components according to their characteristics.	Select tools and equipment suitable for the task Select materials and components suitable for the task Explain their choice of materials and components according to functional	• select appropriately from specialist tools, techniques, processes, equipment and machinery, including computer-aided manufacture • select appropriately from a wider, more complex range of materials, components and ingredients, taking into account their properties such as water resistance and stiffness						

		properties and aesthetic qualities.							
					• match and select a limited range of suitable materials considering their fitness for purpose	• match and select suitable materials considering their fitness for purpose			
Practical skills and techniques	• Follow procedures for safety and hygiene • Use a range of materials and components, including construction materials, kits textiles, food ingredients and mechanical components. • Measure, mark out, cut and shape materials and components. Assemble, join and combine materials and components Use finishing techniques, including those from art & design.	Follow procedures for safety and hygiene Use a wider range of materials and components including construction kits, mechanical and electrical components. Measure, mark out, cut and shape materials and components with some accuracy. Assemble, join and combine materials and components with some accuracy Accurately supply a range of finishing techniques Demonstrate resourcefulness when tackling practical problems	• follow procedures for safety and hygiene and understand the process of risk assessment • use a wider, more complex range of materials, components and ingredients, taking into account their properties • use a broad range of manufacturing techniques including handcraft skills and machinery to manufacture products precisely • exploit the use of CAD/CAM equipment to manufacture products, increasing standards of quality, scale of production and precision • apply a range of finishing techniques, including those from art and design, to a broad range of materials including textiles, metals, polymers and woods						
			• make use of a limited range of specialist equipment to mark out materials • use a range of material joining techniques • use CAD to produce surface finishing Techniques. • investigate and develop skills in modifying the appearance of	• make use of specialist equipment to mark out materials • use a broad range of material joining techniques including stitching, mechanical fastenings, heat processes and adhesives • use CAD/CAM to produce and apply surface finishing techniques, for example using dye sublimation • investigate and develop skills in modifying the appearance of materials including textiles and other manufactured materials e.g. dying and applique					
EVALUATING									
Own ideas and products	Pupils should: Talk about their design ideas and what they are making Make simple judgements about their products and ideas against design criteria Suggest how their products could be improved.	Pupils should: Identify the strengths and areas for development in their ideas and products Consider the views of others, including intended users, to improve their work.	Pupils should: Test, evaluate and refine their ideas and products against a specification, taking account of the views of intended users and other interested groups.						
			Evaluate their products against their original specification. Test their products	Evaluate their products against their original specification and identify ways of improving them Actively involve others in testing their products.	Select methods to evaluate their products in use and modify them to improve performance.	Produce short reports, making suggestions for improvements.			
Existing products	What products are Who products are for What products are for How products are used Where products might be used What products are made from What they like and dislike about products	How well products have been designed How well products have been made Why materials have been chosen What methods of construction have been used How well products work How well products achieve their purposes.	Investigate and analyse new and emerging products						
			Disassemble products to determine how they are constructed. The impacts products have on the wider world.	Disassemble products to determine how they are constructed and function. The positive and negative impacts products have on the wider world.	Investigate and analyse: Unfamiliar products Product life cycle	Investigate and analyse: The concept of 'cradle to grave in product development'. Circular economy approaches to product development and construction.			
Key events		Know about inventors, designers, engineers & manufacturers who have	Know about an increasing range of designers, engineers, chefs, technologists and manufacturers and be able to relate their products to their own designing and making.						

and individuals		developed ground breaking products.							
TECHNICAL KNOWLEDGE									
Making products work	Pupils should know: About the simple characteristics of materials and components About the movement of simple mechanisms such as levers, sliders, wheels and axles. How freestanding structures can be made stronger, stiffer and more stable.	Pupils should know: How to use learning from science & maths to help design and make products that work That materials have functional and aesthetic properties Materials can be combined to create more useful characteristics That mechanical and electrical systems have an input, process and output.	• use learning from science to help design and make products that work • use learning from mathematics to help design and make products that work • understand the properties of materials, including smart materials, and how they can be used to advantage • understand the performance of structural elements to achieve functioning solutions • understand how more advanced mechanical systems used in their products enable changes in movement and force						
			• know about the physical properties of materials e.g. grain, brittleness, flexibility, elasticity, malleability and thermal • how electrical and electronic systems can be powered and used in their products • how to use simple electronic circuits	• understand physical properties of materials e.g. grain, brittleness, flexibility, elasticity, malleability and thermal • how more advanced electrical and electronic systems can be powered and used in their products • how to use simple electronic circuits incorporating inputs and outputs	• how to make adjustments to the settings of a limited range of equipment and machinery • how to embed intelligence in products that respond to inputs • make use of sensors in circuits. • how to apply the concepts of feedback in a system • how to control outputs such as motors • how to use programmable components for example, microcontrollers • how to drive mechanical systems	• how to make adjustments to the settings of equipment and machinery such as sewing machines and drilling machines • how to apply computing and use electronics to embed intelligence in products that respond to inputs • make use of sensors to detect heat, light, sound and movement such as thermistors and light dependant resistors • how to apply the concepts of feedback in systems • how to control outputs such as actuators and motors • how to use software and hardware to develop programmes and transfer these to programmable components for example, microcontrollers • how to make use of microcontrollers in products they design and manufacture themselves • how to construct and use simple and compound gear trains to drive mechanical systems from a high revving motor			
Food & Nutrition									
DESIGNING									
Understand and apply principles of nutrition & health.	Should be able to name and sort foods into the 5 food groups as modelled on the" **Eat Well Plate**" Should know that a balanced diet consists of Food and Drinks. Should also be aware that everyone should eat at least 5 portions of fruit and vegetables a day.	Should be able to name and sort foods into the 5 food groups as modelled on the" Eat Well Plate" &" **Eight Tips for Eating Healthy**." Be able to take into account personal preference, socio-economic aspects as well nutritional and health needs.							
	Should have basic knowledge of how energy, nutrients, water and fibre effects diet and health as well as nutritional needs throughout life	Should be fully competent in the knowledge of how energy, nutrients, water and fibre effects diet and health as well as nutritional needs throughout one's life.							
Understand the source, seasonality & characteristics of a broad range ingredients.	Should have basic knowledge of how the seasons may affect the availability of food. Should know that all food is grown, reared and caught and be able to give examples of ingredients.	Should explore the origin and production of food products and ingredients. Should consider how the weather and seasons affect the availability of food.							
	Have the knowledge that food produced is processed into ingredients that can be eaten or used in cooking. E.g. grain is milled to produce flour, oil is pressed from olives, butter is made from milk.	Should consider the functionality, nutritional profile and sensory attributes of ingredients.							
MAKING									
Plan a range of	Plan and prepare a range of dishes in line with the principles of "The Eat Well Plate".	Be able to plan, prepare and make a range of dishes that are in line with the eat well plate and the eight							

predominately savoury dishes to feed themselves and others a healthy and varied diet.	Should be able to make a range of simple dishes without a heat source. E.g. dips, salads, fruit kebabs. Should also be able to make simple dishes using a heat source.	tips for healthy eating. Should be able to use a range of food commodities. E.g. cereals, fruit, vegetables, meat, fish, eggs, fats, oils, milk/diary, meat alternative food products.			
		Be able to adapt/change a recipe to suit the requirements of a vegetarian or a person with a food allergy.			
Be competent in a range of cooking techniques.	Should be taught a variety of techniques; how to peel, chop, slice, grate, mix, knead and to bake.	Should be taught a variety of techniques; how to peel, chop, slice, grate, mix, knead and to bake.			
EVALUATING					
Own Ideas & Products	Be able to evaluate the characteristics of dishes, taking into consideration; taste, texture, aroma, appearance.	Be able to evaluate and analyse the characteristics of one's own dishes, taking into consideration; taste, texture, aroma, appearance.			
		Be able to evaluate and analyse the characteristics of a peer's dishes, taking into consideration; taste, texture, aroma, appearance.			
Existing Products		Should be able to distinguish between homemade meals. Be able to compare and contrast the characteristics of dishes taking into consideration; sensory attributes, nutritional profiling as well as understanding the functions behind the ingredients.			
NUTRITIONAL KNOWLEDGE					
Actively use the principles of nutrition & health	Understand that a variety of food is needed in the diet as different foods contain different substances that are needed for health; nutrients, water and fibre.	Understand that a variety of food is needed in the diet as different foods contain different substances that are needed for health; nutrients, water and fibre.			
		Should be taught about energy, nutrients, water, and fibre, diet and health.			