Key Stage 3 Curriculum Journey: Design and Technology

Through a variety of creative and practical activities, the curriculum in design technology will teach pupils the knowledge, understanding and skills needed to engage in an iterative process of designing and making.
The curriculum in Food Preparation and Nutrition will teach pupils good knowledge of **food**, **food preparation** and cooking to achieve and maintain a healthy, balanced **diet**.

YEAR 7 CURRICULUM JOURNEY

	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6
Topic					 	
	Graphics/ Monster Project	Timber – Monster Project	Timber – Monster Project	Introduction to Food Preparation	Food Around the World	Fair Trade
Key Knowledge, Skills & Understanding	**Knowledge** ➢ Health & Safety ➢ Colour Theory ➢ Layout design ➢ Textures **Skills** ➢ Design strategies ➢ Rendering & tonal shading ➢ Model making	**Knowledge** ➢ ➢ Categories of timbers - hardwoods, softwoods and manmade boards ➢ Properties of timber and their uses ➢ Sustainable impact of timbers ➢ Names of tools and processes for working with timber **Skills** ➢ Coping saw ➢ Tenon saw ➢ Pillar drill ➢ Band facer	**Knowledge** ➢ Timber finishes ➢ Names of tools and processes for finishing plastics ➢ 6 R's ➢ Evaluation **Skills** ➢ Strip heater ➢ Cross and Draw Filing ➢ Painting	**Knowledge** ➢ The importance of a healthy and varied diet as depicted in the eat well plate and eight tips for healthy eating ➢ Health and safety in the kitchen when preparing food. **Skills** ➢ Select and prepare ingredients ➢ Use utensils ➢ Apply heat in different ways	**Knowledge** ➢ Where different food comes from around the world and the impact of importing foods (food miles) **Skills** ➢ Select and prepare ingredients ➢ Use utensils ➢ Apply heat in different ways	**Knowledge** ➢ How food is processed and sold in different ways, e.g. fair trade ➢ How to store, prepare and cook food safely and hygienically **Skills** ➢ Select and prepare ingredients ➢ Use utensils ➢ Apply heat in different ways ➢ Evaluate the food they have produced sensory analysis.
KS3 National Curriculum Links	➢ Develop and communicate design ideas using annotated sketches	➢ Use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture. ➢ Use a wider, more complex range of materials and components considering their properties.	➢ Use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture. ➢ Use a wider, more complex range of materials and components considering their properties.	➢ Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet	➢ Understand the source, seasonality and characteristics of a broad range of ingredients. ➢ Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet	➢ cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet
MAPs	1 x MAP per half term. Graphics MAP	1 x MAP per half term. Categories and uses of timber MAP	1 x MAP per half term. Practical MAP	1 x MAP per half term. Health & Safety MAP	1 x MAP per half term. Practical MAP – Bolognaise	1 x MAP per half term. Carbon Footprint and Food Miles MAP

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HIGH SCHOOL

Key Stage 3 Curriculum Journey: Design and Technology

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YEAR 8 CURRICULUM JOURNEY

	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6
Topic	  Design Technology - Textiles	  Design Technology – Papers & Boards	  Design Technology – Designer Inspired Product	 Food Preparation & Nutrition - Macronutrients	 Food Preparation & Nutrition – Food & the Environment	 Food Preparation & Nutrition – British Cuisine
Key Knowledge, Skills & Understanding	**Knowledge** ☐ Categories of textiles - manmade and natural textiles ☐ Different weaves are applied to fabrics. ☐ Properties of natural and synthetic fabrics SMART and Modern Materials Product Analysis – using ACCESS FM Introduction to modern designers. **Skills** ☐ Stitching techniques	**Knowledge** ➢ How paper is made ➢ The different types of paper & board and their uses. ➢ Research and exploration, such as the study of different cultures, to identify and understand user needs ➢ The work of Others as inspiration - Aljoud Lootah,The Singh Twins, Karim Rashid, Yinka Llori ➢ **Skills** ➢ Cutting and scoring ➢ Model making	**Knowledge** ➢ Designers and design movements and their influence on art, design and technology. ➢ Timber finishes ➢ Names of tools and processes for finishing plastics **Skills** ☐ Coping saw ☐ Tenon saw ☐ Pillar drill ☐ Band facer ☐ Painting	**Knowledge** ➢ That food provides energy and nutrients in different amounts; that they have important functions in the body; and that people require different amounts during their life. ➢ How to taste and cook a broader range of ingredients and healthy recipes, accounting for a range of needs, wants and values. **Skills** ➢ Adapt and use their own recipes. ➢ Cook a range of dishes. ➢ Select and prepare a larger range of ingredients	**Knowledge** ➢ Students should know that food is processed and sold in different ways, e.g. conventional and organic farming. ➢ How to taste and cook a broader range of ingredients and healthy recipes, accounting for a range of needs, wants and values. **Skills** ➢ Use a wider range of utensils and electrical equipment ➢ How to apply heat in different ways ➢ Use taste, texture and smell to decide how to season dishes	**Knowledge** ➢ That people choose different type of food that may be influenced by availability, season, cost, where the food is produced, culture and religion. ➢ How to taste and cook a broader range of ingredients and healthy recipes, accounting for a range of needs, wants and values. **Skills** ➢ How to apply heat in different ways ➢ How to use taste, texture and smell to decide how to season dishes and combine ingredients.
KS3 National Curriculum Links	➢ Investigate new and emerging technologies	➢ Analyse the work of past and present professionals and others to develop and broaden their understanding ➢ Use a wider, more complex range of materials and components considering their properties.	➢ Use specialist tools, techniques, processes, equipment and machinery precisely ➢ Analyse the work of past and present professionals and others to develop and broaden understanding ➢ Use a wider, more complex range of materials and components, considering their properties	➢ 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	➢ Understand the source, seasonality and characteristics of a broad range of ingredients. ➢ Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet	➢ Understand the source, seasonality and characteristics of a broad range of ingredients.
MAPs	1 x MAP per half term. Textiles Theory	1 x MAP per half term. Paper and Board Theory	1 x MAP per half term. Practical MAP	1 x MAP per half term. Macronutrients MAP	1 x MAP per half term. Food & the Environment MAP	1 x MAP per half term. Practical MAP – Sausage Casserole

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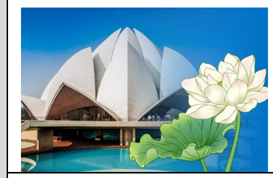
YEAR 9 CURRICULUM JOURNEY

	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6
Topic	 Design Technology - Design and Model	 Design Technology – Mechanisms & Electronics/Programming	 Design Technology - CAD	 FPN - Microorganisms and Micronutrients	 FPN – Nutritional Needs Food Spoilage	 FPN – International Cuisine
Key Knowledge, Skills & Understanding	**Knowledge** ➢ Categories of plastics - be able to describe thermoplastics and thermosetting plastics ➢ Sustainable impact of plastics ➢ Use ACCESS FM to write a specification **Skills** ➢ Develop and communicate design ideas using annotated sketches and biomimicry as inspiration ➢ Produce 3D models	**Knowledge** ➢ Use learning from maths and science to help design and make products that work. ➢ Understand how more advanced mechanical systems used in their products enable changes in movement and force. ➢ Using CRUMBLE technology to program microcontrollers. ➢ Learn about input/process/output **Skills** ➢ Communication and teamworking	**Knowledge** ➢ Learn about the industry standard computer aided design program to create professionally finished concepts ➢ Learn about the impact of AI on design and technology and society **Skills** ➢ Use CAD to design and products, increasing standards of quality, scale of production and precision.	**Knowledge** ➢ The principles of cleaning, preventing cross-contamination, chilling, cooking food thoroughly and reheating food until it is steaming hot **Skills** ➢ How to use a broader range of preparation techniques and methods when cooking, e.g. stir-frying, steaming, and blending. ➢ How to modify recipes and cook dishes that promote current healthy eating messages.	**Knowledge** ➢ The importance of energy balance and the implications of dietary excess or deficiency, e.g. malnutrition, maintenance of a healthy weight. (micronutrients) **Skills** ➢ How to use a broader range of preparation techniques and methods when cooking, e.g. stir-frying, steaming, and blending. ➢ How to evaluate the food they have produced using a range of sensory analysis techniques.	**Knowledge** ➢ How to use nutrition information and allergy advice panels on food labels to help make informed food choices. ➢ Students should know how to compare the cost of food when planning to eat out or cook at home. **Skills** ➢ How to competently use a range of cooking techniques for example, selecting and preparing ingredients; using utensils and electrical equipment.
KS3 National Curriculum Links	➢ use a variety of to generate creative ideas and avoid stereotypical responses. Identify and solve design problems ➢ develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling ➢ understand and use the properties of materials and the performance of structural elements to achieve functioning solutions	➢ Understand how more advanced electrical and electronic systems can be powered and used in their products ➢ Apply computing and use electronics to embed intelligence in products that respond to inputs using programmable components	➢ Use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided design ➢ Identify and solve design problems and understand how to reformulate problems ➢ understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists	➢ Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet ➢ Become competent in a range of cooking techniques ➢ understand and apply the principles of nutrition and health	➢ Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet ➢ Become competent in a range of cooking techniques ➢ Understand and apply the principles of nutrition and health	➢ Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet ➢ Understand the source, seasonality and characteristics of a broad range of ingredients.
MAPs	1 x MAP per half term. Plastics MAP	1 x MAP per half term. CAM's MAP	1 x MAP per half term. Design MAP	1 x MAP per half term. Micronutrients MAP	1 x MAP per half term. Carbohydrates MAP	1 x MAP per half term. Practical MAP – Students choice to showcase skills