



2022-2023 Key Stage 3 Curriculum Map – Design Technology

Vision Statement

DT

WCA's Design Technology curriculum seeks to promote an educational culture which is scientific, technological and vocational.

We endeavour to provide pupils with a curriculum that has creativity at its core, enabling pupils to investigate, experiment and produce innovative solutions. Pupils will acquire knowledge that gives them a strong understanding of design and embrace changes in new technology and its impact on the wider world. Using a range of materials including, Resistant Materials, Electronics and Systems, Food, Textiles and Graphics and draw upon wider disciplines such as STEAM subjects and Humanities.

We encourage pupils to be self - motivated and confident learners, who can work independently and as part of a team. Pupils are encouraged to be responsible in their learning environment, health and safety and sustainable design. Our priority is for pupils to be resilient problem solvers who are not afraid of making mistakes.

We build the cultural capital of our pupils by ensuring that they gain an understanding of both past and present British and International designers and multicultural cuisine in the food curriculum. Learning of modern technology and manufacturing aims to give pupils an insight into how products are made and an awareness of any environmental impact.

Food – To instil a love of cooking and gain a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

KS3 Curriculum sequence

The curriculum is designed to build on theory concepts and practical skills. SOW reflect an increase in complexity of concepts and challenging practical skills. Students are encouraged work with increasing level of independence and build on knowledge in readiness for KS4 GCSE curriculum. Core elements of the design process focal to each project in KS3 across different material areas. These concepts are extended throughout KS3 to allow for more extensive research, more critical analysis and evaluation and development of designing, including use of CAD. Mathematical skills are integrated into KS3 in preparation for the demands of KS4.

Year 7 DT – Health and Safety, designing for users needs, introduction to working with a range of materials in DT and 2D design

The Year 7 curriculum is designed to give pupils an aspirational start to Design Technology.

Textiles – Introduces pupils to the concept of biomimicry in design. Pupils will learn surface decoration techniques and apply to Biomimicry chair design. They will also develop patterns for biomimicry design, using 2D design which is revisited in the DT module to embed these skills.

Food – practical work is selected around dishes will enable to fed themselves healthy meals, Healthy eating and Nutrition is underpinned and reenforced in all practical lessons

DT – Land Yacht – using mathematical skills for designing and making. Introduction to using tools and equipment in the workshop

Plastics – Tealight and ball bearing game – introduces properties of plastics with practical elements linked to cultural Tealight design and make.

Year 8 – Design process and building on knowledge of sustainability, developing ICT and control systems. Pupils work in Electronics and revisit the workshop through wood and metals bottle openers project.

Year 9 – Designing for others- Sustainable dwelling. 2D and practical modelling making in preparation for KS4

In Food, the curriculum is sequenced to deliver the core elements of the Food NC; Nutrition, healthy eating, food preparation, hygiene, cooking techniques and sensory characteristics of food. The curriculum is structured to deliver knowledge and understanding of these key concepts, which is applied through developing skills and processes in practical lesson.

Year 7 – Introduction to healthy eating and nutrition, hygiene and safety, knife skills and recipes using different parts of the cooker.

Year 8 – Introduction to factors affecting food choice, including dietary needs, cost, culture. More complex dishes and processes. Macro and micronutrients and application to different dietary needs. Practical tasks require pupils to demonstrate multiply techniques and allow pupils to apply recipe adaptations.

Year 9 – Revisiting food choice and menu planning. Practical work focuses on multicultural research and dishes.

Rotation plan

Year 7 – 2 lesson Induction followed by 8/9 weeks each in RM, DT Textiles and Food. Pupils taught by one member of staff for half year.

Year 8 – 12/13 week each rotation in, Product Design, Food and Electronics

Year 9 – 8/9 weeks



Year 7 Curriculum Map		FOOD	Design Textiles	RM Land Yacht	DT Plastics
Subject	Curriculum Content inc Knowledge & Skills	Hygiene Theory of fruit Fruit salad practical Eatwell Guide Scone pizza pinwheels Scones and sensory analysis Introduction to nutrition Dipper dish Labelling information Pasta sauce practical	Textiles industry/ Introduction to fibres/ fabrics. Sustainable design Biomimicry Surface decoration/ tie dye/ marbling/ fabric paint 2D Designing Designing for users needs Chair design Evaluation	Sustainability – solar and wind power/ renewable energy Sustainable forests Analysis if brief/ development of ideas Symmetrical designing Drawing to scale – technical drawing skills and annotation Health and safety Hard/ soft woods Measuring/ marking out/ sawing and assembly. Wheel mechanisms/ sail Testing and evaluating	Thermoplastics Thermoforming and thermosetting Recycling of plastics Ball bearings game – use of 2d design/ vacuum forming Tealight – link to cultures/ religions and festivals. Tea light using 2d design Modelling tealight Plastic bending
1 hr per week	Assessment	Healthy eating Assessment Practical Assessment End of rotation Test	Chair design with of surface decoration techniques Practical technique assessment End of rotation Test	Symmetry design Landt Yacht practical outcome End of rotation Test	Ball bearing practical outcome Tea light design End of rotation Test
	Literacy Links	Reading recipes. Key vocab Evaluating dishes	Key vocab Evaluating techniques	Terminology linked to sustainability	Terminology linked to sustainability/ plastics
	Curriculum Links	PE and Science – links to healthy eating Maths – metric measurements	Art and Textiles Geography – sustainability ICT	Geography - sustainability Maths – symmetry/ measurements	PHSE / RE ICT Art
	Outside of the Curriculum	Home Cooking	Designing, sewing	Application of Reduce, reuse, recycle	Application of Reduce, reuse, recycle
	How can I support my child?	Promote healthy eating, cooking at home, reducing food waste and reusing left over food Visits to food markets	Encourage your child to identify different fabrics on clothing and textile based products.	Watch videos on Land Yacht BBC bite size on sustainability	Opportunities to research cultures/ religious symbolism



Year 8 Curriculum Map		Rotation 1 Food	Rotation 3 Product	Rotation 3 DT ELECTRONICS
	Curriculum Content inc Knowledge & Skills	4c's Conditions for bacteria to multiply. Demo Fajitas and evaluating Food choice Nutrition and healthy eating Wheat processing and types of flour. Functions of bread ingredients and demo Pizza Energy balance Nutrition and healthy eating Nutritional value of mince and alternative proteins Mince practical Pasta labelling and sauce making Food allergies/ intolerance Macaroni cheese Cheesecake Functions of ingredient in pastry and cake making Bakewell tarts	<u>BOTTLE OPENER</u> Wood and manufactured boards Ferris and non ferris metals Designers and existing products Ergonomics and anthropometrics Mind map and specification Design ideas and rendering Modelling Drilling and safety Countersinking, riveting and shaping Shaping and applying finish Evaluation	Sketching techniques Rendering and two point perspective Flow diagram Programming flowall Concepts of electricity Resistors and resistance components in the LDR circuit Current, Voltage and resistance. Soldering Testing and evaluating
1 hr per week	Assessment	Macaroni cheese planning and practical assessment End of rotation Test	Design ideas assessment Practical Assessment End of rotation Test	Two point perspective Circuit practical assessment End of rotation Test
	Literacy Links	Reading recipes/ news articles linked to food		Reading instructions. Terminology. Evaluating
	Curriculum Links	Science, Maths. PE. PHSE	Art Geography	Science, Maths, ICT Art
	Outside of the Curriculum	Home Cooking, food shopping choices, eating out	Looking at design of new products	Energy/ electricity in the news
	How can I support my child?	Promote healthy eating, discussing nutritional value of meals, cooking at home, reducing food waste and reusing left over food Visits to food markets	Opportunities to visit museum to look at designers – Think Tank, Herbert Art gallery/ exhibitions.	



Year 9 Curriculum Map		Hosp and Catering	Design Technology
	Curriculum Content inc Knowledge & Skills	Diet through life and Nutrients Swiss Roll Menu planning Sweet and sour Multicultural research Lasagne Tiramisu Menu planning assessment. Curry demo Curry and Naan	Design brief – sustainable dwelling for homeless people Designing for need/ others Maslow’s hierarchy of need Sustainability and green design Develop specification Development of design ideas- free hand Revisit 6 RS Working to scale – making a scale model of sustainable dwelling. Modelling using 2D Design Modelling making tools and equipment Evaluating Project 2 Bridge making Structures Mechanical systems
1 hr per week	Assessment	Practical assessment Menu planning assessment End of rotation Test	Practical modelling assessment Design idea assessment End of rotation Test
	Literacy Links	Reading recipes/ news articles linked to food	Terminology, evaluating, annotation
	Curriculum Links	Science, Maths. PE. PHSE	Art, Maths, Geography, PSHE
	Outside of the Curriculum	Home cooking, food shopping choices, eating out	Visits to local bridges. Looking at school new build and other new build developments
	How can I support my child?	Promote healthy eating, discussing nutritional value of meals, cooking at home, reducing food waste and reusing leftovers. Opportunities to try food from different cultures/ look at cultural foods in supermarkets. Visits to food markets	Opportunities to visit museum to look at designers – Think Tank, Herbert Art gallery/ exhibitions. Visits / researching bridges Watch TV programmes such as Grand Design