



Curriculum Content

Technology Rotations –

KS3 –

Year 7	Food – Rotation Project	Textiles – Rotation Project	DT – Rotation Project
	<p>Topic: The Eatwell Guide and Healthy Eating</p> <p>Knowledge: Students will learn about healthy eating and how to work safely and hygienically in a domestic food classroom. Lessons during the first six weeks cover information about bacteria in relation to temperatures, e.g. bacteria multiply in the danger zone. Students will be taught how to store and prepare food safely and how to avoid cross-contamination. Sensory analysis is introduced. Nutrition is linked to each section of the Eatwell Guide (nutrients and their function in the body). Students will learn how to adapt/modify recipes. The functions of ingredients and cake-making methods are all covered in year 7.</p> <p>Skills: Knife techniques (bridge and claw), using the gill, the hob, the oven, boiling, combining ingredients, weighing and measuring, shaping, manipulating sensory properties.</p> <p>Assessment: Practical assessment of fruity buns</p>	<p>Topic – Microbiology / Biomimicry</p> <p>Knowledge Initially, students learn about H&S practices in a Textiles workshop and learn about the safe use of equipment. Students are then introduced to the microbiology project and use a variety of approaches (mind map, image board, observed drawing) to investigate the theme. Students also analyse the work of past and present professionals and others to develop and broaden their understanding of the theme. Students gain an insight into how designing can be inspired by looking at natural form in unconventional ways (biomimicry). They also learn about natural /man-made fibres. Student’s trial a number of decorative textile techniques such as block printing, hand embroidery stitches and embellishment to then inform the development of their final piece. Students are then required to analyse and evaluate their 3D final piece.</p> <p>Skills Scissors techniques (fabric, embroidery), Block printing, hand embroidery, applying embellishments, safe use of heat press, irons</p> <p>Assessment Assessment of research tasks (mind map, observed drawings), sampling of textile techniques and Final Piece Home work: Image Board, Artist report, Block printing research, Final Plan, Evaluation</p>	<p>Knowledge Students research and evaluate the work of others in order to broaden their understanding of the project and its challenges. They learn how to work with wood (MDF) and metal (Aluminium), using specialist tools and equipment. They will study the materials, gaining an understanding of where they come from, how they are produced and the impact using them has on the environment. They then learn to generate creative design ideas using a variety of techniques and present these using annotated sketches. Students will also gain an understanding of the developments in Design and Technology by learning about new and emerging technologies. They will learn to use SolidWorks, a 3D Computer Aided Design programme that is industry standard in the engineering world. This software will allow them to make a component as well as test, evaluate and refine it. They will achieve this by making a 3D, mathematical (computer generated) model of the aluminium hook and then stress testing it in order to check that it is strong enough before it is manufactured.</p> <p>Skills Students will develop design skills, producing a range of different ideas for the wooden backboard. They will develop fine and gross motor skills in the workshop. Pupils will develop their ability</p>

			<p>for self-reflection and peer-assessment and learn how to achieve assessment criteria.</p> <p>Assessment Assessment of design and practical work as well as multiple choice and extended-writing exam style questions.</p>
Vocabulary Links	<p>macronutrients, micronutrients, protein carbohydrates, fats, fibre, vitamins, minerals, food spoilage, bacteria, cross-contamination, danger zone, spores, pathogens, enzymic browning, organoleptic, appearance, aroma, umami, texture, taste, radiation, grilling, dextrinisation, Peak Bone Mass, lactose intolerance, convection, conduction, boiling, baking, aeration, raising agent</p>	<p>Colour, line, texture, form, tone, pattern, shade, hue, positive, negative, space, equal, scale, composition, proportion, repetitive, symmetrical, random, structure, relief, nature, organic, mixed media, rule of thirds(image board), biomorphic, actual texture, visual texture, blocks, printing, impression, bacteria, molecules, virus, atoms, nucleus, nerves,</p>	<p>Analyse, evaluate, product analysis, develop, manufacturer, design, research, create, design fixation, innovative, annotate, sustainability, properties, malleability, finite, modern technologies, coping saw, hack saw, file, centre punch, abrasive paper, box bender, mallet, machine vice, centre punch, hammer, counter-sink, pilot hole, screw, screw driver, MDF, Aluminium.</p>
National Curriculum	<p>Cooking and nutrition As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to:</p> <p>Key stage 3</p> <ul style="list-style-type: none"> ♣ 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 [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different 	<p>Key stage 3 Pupils should be taught to develop their creativity and ideas, and increase proficiency in their execution. They should develop a critical understanding of artists, architects and designers, expressing reasoned judgements that can inform their own work. Pupils should be taught:</p> <ul style="list-style-type: none"> ♣ to use a range of techniques to record their observations in sketchbooks, journals and other media as a basis for exploring their ideas ♣ to use a range of techniques and media, including painting ♣ to increase their proficiency in the handling of different materials ♣ to analyse and evaluate their own work, and that of others, in order to strengthen the visual impact or applications of their work ♣ about the history of art, craft, design and architecture, including periods, styles and 	<p>Design and Technology 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 making. They should work in a range of domestic and local contexts [for example, the home, health, leisure and culture], and industrial contexts [for example, engineering, manufacturing, construction, food, energy, agriculture (including horticulture) and fashion].</p> <p>When designing and making, pupils should be taught to:</p> <p>Design</p> <ul style="list-style-type: none"> ♣ use research and exploration, such as the study of different cultures, to identify and understand user needs

	<p>ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]</p>	<p>major movements from ancient times up to the present day</p> <ul style="list-style-type: none"> ♣ 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, ♣ select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture ♣ select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties <p>analyse the work of past and present professionals and others to develop and broaden their understanding</p> <ul style="list-style-type: none"> ♣ 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 	<ul style="list-style-type: none"> ♣ identify and solve their own design problems and understand how to reformulate problems given to them ♣ 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 <p>Make</p> <ul style="list-style-type: none"> ♣ select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture ♣ select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties <p>Evaluate</p> <ul style="list-style-type: none"> ♣ 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,
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			<p>and the responsibilities of designers, engineers and technologists Design and technology</p> <p>Technical knowledge</p> <ul style="list-style-type: none">♣ understand and use the properties of materials and 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♣ 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 intelligence in products that respond to inputs [for example, sensors], and control outputs [for example, actuators], using programmable components [for example, microcontrollers].
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Year 8	Food – Rotation Project	Textiles – Rotation Project	DT – Rotation Project
	<p>Topic: Food From Around The World</p> <p>Knowledge: Students will revisit the Eatwell guide and healthy eating in order to develop their understanding of the need for a balanced diet and the potential long term effects of a poor diet. Diet related diseases are introduced with a focus on obesity. Students will learn about different ingredients and foods from around the world. Food provenance is re-visited in year 8 in more detail including where food comes from, and how food production has an impact on the environment including seasonality, food miles and Fairtrade. Students will be introduced to special diets and how different religions can affect food choice. Year 8 Food also covers the functions of ingredients in bread, raising agents (yeast) and students will become aware of the wide range of careers that Food and Nutrition links to (chillededucation.org and tastycareers.org.uk).</p> <p>Skills: Students will learn how to safely prepare raw meat, marinade, use fat based cooking methods, make and shape a dough and the melting method. They will revisit skills taught in year 7; Knife skills using the hob and the oven.</p> <p>Assessment: Written assessment</p>	<p>Topic: Identity / Human Form /</p> <p>Knowledge: Students will develop their understanding of the theme of ‘identity’ through a number of research tasks. They will look at what aspects in a persons’ life makes their ‘identity’. Students will have the opportunity to investigate perceptions, family, personal preferences, cultures and perceived views through social media to develop an appreciation of how identity can be understood and portrayed. Students will research both historical and practicing artists who produce work around this theme. As part of their research students will also produce observed drawings of the human form. Throughout this project they will also be introduced to the sewing machine and the textile techniques of applique and sublimation printing (CAD). Students will use their research and skills to develop a creative response in the form of a panel.</p> <p>Skills Use of the sewing machine (free machine embroidery), embroidery hoops and interfacing, Use of drawing packages (illustrator, Coral Draw, 2D Design), Sublimation printer and heat press, bondaweb applique, reverse applique</p>	<p>Topic: Modern Technology</p> <p>Knowledge: Students learn about the impact modern technology has on its user, in particular, the postural problems that occur through the use of mobile phones. This is a serious issue for teenagers in the western cultures. This gives clarity to the purpose of the product they are to design and make. They build on their experience in Year 7, and develop additional skills using modern technologies. This includes further use of the tools within SolidWorks (Mathematical modelling) such as rendering and assembling parts. Students also utilise traditional modelling techniques such as card modelling in order to test, evaluate and refine their ideas. Students research and analyse the work of others in order to develop their ideas. They will also learn how to manufacture using sheet metal (Mild Steel) and plastic (Acrylic). They study these materials, gaining an understanding of where they come from, how they are produced and the impact using them has on the environment. Using this knowledge they can properly understand the properties of the materials and how this impacts on the products performance. Students will also gain an understanding of industry techniques that are used to improve quality and consistency of products by using jigs and formers.</p>

		<p>Assessment: Assessment of research tasks (mind map, observed drawings), sampling of textile techniques and Final Piece Home work: Image Board, Artist report, Sublimation Instructions/technique, Final Plan, Evaluation</p>	<p>Skills 2D Design Tools, laser cutting, line bending, SolidWorks, metal work, shaping and forming. Assessment: Assessment of design and practical work as well as multiple choice and extended-writing exam style questions.</p>
Vocabulary Links	<p>Eatwell Guide, Diet-related diseases, Obesity, Iron deficiency, Anaemia, Cardiovascular disease, Diabetes, Skeletal, Rickets, Osteoporosis, Seasonality, Food miles, Fairtrade, Cross-contamination, Coeliac, Lactose intolerance, Vegetarian, Vegan, Allergy, Marinade, Yeast, Single-celled organisms, Gluten, Kneading, Proving, Carbon dioxide, Kosher, Halal, Haram.</p>	<p>Colour, line, texture, form, tone, shade, hue, positive, negative, space, equal, scale, blend, mix, tint, contour, movement, curve, straight, surface, shadow, highlight, composition, proportion, mixed media, rule of thirds(image board), impression, emotion, mark-making, atmosphere, psychological, figure, features, expression, life-drawing, collage, figurative art, identity, individual, diversity, nationality, personality, anatomy, cultural, stereotypes, foreground, background, gestural, portrait.</p>	<p>Modern technologies, laser cutting, steel, acrylic, forming, shaping, fabricating, fixings, box bender, tin snips, rotary sheet metal cutter, guillotine, metal hole punch, centre punch, dip coating, extrude, fillet, chamfer, radius.</p>
National Curriculum	<p>Cooking and Nutrition As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to: Key stage 3 ♣ 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 [for example, selecting</p>	<p>Key Stage 3 Pupils should be taught to develop their creativity and ideas, and increase proficiency in their execution. They should develop a critical understanding of artists, architects and designers, expressing reasoned judgements that can inform their own work. Pupils should be taught: ♣ to use a range of techniques to record their observations in sketchbooks, journals and other media as a basis for exploring their ideas ♣ to use a range of techniques and media, including painting ♣ to increase their proficiency in the handling of different materials ♣ to analyse and evaluate their own work, and that of others, in order to strengthen the visual impact or applications of their work</p>	<p>Design and Technology 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 making. They should work in a range of domestic and local contexts [for example, the home, health, leisure and culture], and industrial contexts [for example, engineering, manufacturing, construction, food, energy, agriculture (including horticulture) and fashion]. When designing and making, pupils should be taught to: Design ♣ use research and exploration, such as the study of different cultures, to identify and understand user needs</p>

	<p>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]</p>	<ul style="list-style-type: none"> ♣ about the history of art, craft, design and architecture, including periods, styles and major movements from ancient times up to the present day ♣ 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, ♣ select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture ♣ select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties ♣ analyse the work of past and present professionals and others to develop and broaden their understanding ♣ investigate new and emerging technologies ♣ understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists 	<ul style="list-style-type: none"> ♣ identify and solve their own design problems and understand how to reformulate problems given to them ♣ 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 <p>Make</p> <ul style="list-style-type: none"> ♣ select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture ♣ select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties <p>Evaluate</p> <ul style="list-style-type: none"> ♣ 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
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