DESIGN TECHNOLOGY Year 9 Curriculum End Points and Key Vocabulary

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Ethos Links	**Milton Keynes** – Looking at where we can see examples of different cultures through textiles in MK and Watling Academy. Links to local recycling plants and scrap store for recycling plastics. Looking at food waste in Mk and where to buy food with less packaging. **STEM** - Structure and properties of different materials, geometry in design, function of ingredients, careers links. **Character** – Working as part of a design team, peer feedback, using shared equipment. **Sustainability** - Looking at the origins of different fabrics and fibres and their impact on the environment, dying processes. Ocean plastic problems, food miles, food waste and food providence.	**Milton Keynes** - Ethical local suppliers of materials, food Waste in MK. Where to buy food with less packaging. Links to MK Eat Street. **STEM** - Food hygiene and the scientific characteristics and nutritional value of ingredients. Experimental development tasks. Engineering solutions to problems. **Sustainability** - Food provenance, food miles, food waste. Use of different materials, designing with the 6Rs in mind. **Character** – Working as part of a design team, peer feedback, using shared equipment.	**Milton Keynes** - Ethical local suppliers of materials, choosing local materials, food Waste in MK. Where to buy food with less packaging. Links to MK Eat Street. **STEM** – Understanding ergonomics and anthropometrics food hygiene and the scientific characteristics and nutritional value of ingredients. Experimental development tasks. Engineering solutions to a lighting problem. Combining materials. **Sustainability** - Food provenance, food miles, food waste. Use of different materials, designing with the 6Rs in mind. **Character** – Designing with the needs of others in mind, peer	**Milton Keynes** - Using the MK landscape of inspiration in design, food Waste in MK. Where to buy food with less packaging. STEM – electronic circuits, food hygiene and the scientific characteristics and nutritional value of ingredients. Experimental development tasks. Engineering solutions to a lighting problem. Sustainability - food provenance, food miles, food waste. Use of different materials, designing with the 6Rs in mind **Character** – Designing with the needs of others in mind, peer feedback, using shared equipment.	**Milton Keynes** - Using the MK landscape of inspiration in design, food Waste in MK. Where to buy food with less packaging. STEM –engineering and modelling solutions to problems food hygiene and the scientific characteristics and nutritional value of ingredients. Experimental development tasks.. Sustainability - food provenance, food miles, food waste. Designing with the 6Rs in mind **Character** – Designing with the needs of others in mind, peer feedback, using shared equipment.	**Milton Keynes** – Looking at where we can see examples of different cultures through textiles in MK and Watling Academy. Links to local recycling plants and scrap store for recycling plastics. Looking at food waste in Mk and where to buy food with less packaging. **STEM** - structure and properties of different materials, geometry in design, function of ingredients, careers links. **Character** – Working as part of a design team, peer feedback, using shared equipment. **Sustainability** - Looking at the origins of different fabrics and fibres

			feedback, using shared equipment.			and their impact on the environment, dying processes. Ocean plastic problems, food miles, food waste and food providence.
Learning End Points	**Dragons Den Challenges** **Textiles** 'How can different cultures be represented in textile products?' Creating a soft furnishing inspired by Islamic design. By the end of this unit students will know and understand: ➢ How and what to research in terms of the given context. ➢ What a user/stakeholder is and why they must be considered when designing. ➢ The importance of cultural representation in textiles. ➢ The geometry methods used to	**Dragons Den Challenges** **Textiles** 'How can different cultures be represented in textile products?' Creating a soft furnishing inspired by Islamic design. By the end of this unit students will know and understand: ➢ How and what to research in terms of the given context. ➢ What a user/stakeholder is and why they must be considered when designing. ➢ The importance of cultural representation in textiles. ➢ The geometry methods used to	**Textiles and Resistant materials** Design Venture competition. By the end of this unit students will know and understand: ➢ How designers working teams and make individual and group contributions to the design process. ➢ How to investigate the design and business context and why it is important in design. ➢ know what is meant by user centred design.	**Textiles: Spring Samples – But is it textiles?** Challenging perceptions and using non traditional materials. By the end of this unit students will know and understand: ➢ A range of different materials and their working properties including metals and polymers. ➢ How non traditional materials can be used in textiles. ➢ A range of more complex surface design techniques.	**Textiles: Flat to Form** How can we create 3D forms from fabric? 3D textiles techniques. **Calico Challenge** – How can we take inspiration from nature in textiles? Designing and making a garment from calico inspired by nature. By the end of this unit students will know and understand: ➢ A range of different techniques in pattern cutting and fabric selection to create desired 3D forms. ➢ Designers who have been inspired by nature	**Textiles: Calico Challenge** How can we take inspiration from nature in textiles? Designing and making a garment from calico inspired by nature. By the end of this unit students will know and understand: ➢ How to take inspiration from nature in their own designs. ➢ How patterns for garments are created. ➢ How to read pattern instructions and follow them to

	create Islamic art. **Resistant Materials:** 'Can we turn trash to treasure?' Creating products from recycled HDPE. By the end of this unit students will know and understand: ➢ Understand polymers and their properties. ➢ Understand plastic pollution in the sea. ➢ How to work as a design team. **Food preparation and nutrition** 'How can healthy snacks appeal to teenagers? Creating a healthy biscuit. By the end of this unit students will know and understand: ➢ How to conduct first hand research in to the needs of their target market.	create Islamic art. **Resistant Materials:** 'Can we turn trash to treasure?' Creating products from recycled HDPE. By the end of this unit students will know and understand: ➢ Understand polymers and their properties. ➢ Understand plastic pollution in the sea. ➢ How to work as a design team. **Food preparation and nutrition** 'How can healthy snacks appeal to teenagers? Creating a healthy biscuit. By the end of this unit students will know and understand: ➢ How to conduct first hand research in to the needs of their target market.	➢ Understand how to identify research needs and carry out research related to a product idea. ➢ Know how to use research to inform design development. ➢ Understand issues surrounding sustainability, branding and marketing and manufacturing within product design. ➢ Understand how branding is used to market products to a target audience. ➢ understand how design is influenced by the business context for a product understand	**Resistant Materials:** How do we design a light source for a user**?** LED lamp design and make. By the end of this unit students will know and understand: ➢ The importance of anthropometric and ergonomic design. ➢ Different approaches to sketching and rendering when communicating designs. ➢ How use client feedback to continue to develop their design ideas. ➢ Different types of light source and their use in lighting. **Food preparation and nutrition:** Savoury light lunches for teenager. By the end of this unit students will know and understand:	➢ How biomimicry has been used in textiles. ➢ How to create a client profile and use this to inform their designs. **Resistant Materials:** How do we design a light source for a user? LED lamp design and make By the end of this unit students will know and understand: ➢ How to create moveable joints in timber and manufactured boards. ➢ How to test prototypes. ➢ Different properties of selected materials and their use in design. ➢ How to solder a LED light circuit. ➢ How to test and evaluate	construct a garment. ➢ How to apply their knowledge of different surface design techniques into their garment. **Resistant materials:** How can we be innovative in design? Using the design process to be innovative. By the end of this unit students will know and understand: ➢ The nature of design innovation. ➢ Key methods of design research. ➢ How to present research findings effectively. ➢ How to present design

	➢ The negative effects of excess saturated fat. ➢ How to modify a recipe to appeal to the target market whist balancing nutritional needs.	➢ The negative effects of excess saturated fat. ➢ How to modify a recipe to appeal to the target market whist balancing nutritional needs.	how costing and budgeting is related to product planning. ➢ now how to develop business and marketing plans. ➢ Use a number of methods to communicate the final design. ➢ How to plan and deliver a professional pitch. ➢ skills used and learned during the project and how could these could be used in other areas of learning. **Food preparation and nutrition** – Savoury light lunches for teenager. How can we identify dietary and nutritional needs through life and select a suitable starter or savoury light lunch dish to make that	➢ Ingredients and spices used in Thai cuisine. ➢ How food choices are influenced by different cultures and religions. ➢ Micro nutrients – vitamins (fat and water soluble) A, C, B D vitamins. ➢ Gelatinisation and nutritional profile. ➢ How to plan a dish focusing on nutritional content. ➢ 14 main allergens.	their work using client feedback. **Food preparation and nutrition:** Savoury light lunches for teenager and Mini NEA challenges By the end of this unit students will know and understand: ➢ Pupils will enhance their knowledge and understanding of what constitutes a healthy balanced diet and good nutrition. This includes the Eatwell Guide, energy balance and the role of the nutrients in a balanced diet.	solutions effectively. ➢ How to review their own work and the work of others. **Food preparation and Nutrition:** Savoury light lunches for teenager and Mini NEA challenges By the end of this unit students will know and understand: ➢ Food investigation work – in preparation for Task 1 on the NEA. ➢ Foam from different types of egg whites – dried powdered, pasteurised and fresh; Stabilising egg white foam.

			meets guidelines of The eatwell guide, nutritionally balanced and appealing to a teenager? By the end of this unit students will know and understand: ➢ The nutritional needs of a teenager. ➢ Seasonality, sustainable fishing and farming, food miles, organic foods, buying local, food waste, farm assured, environmental impacts linked to food packaging. ➢ Definitions and uses of kilocalorie (kcal), kilojoule (kJ), physical activity level (PAL), dietary reference values (DRV) and basal			➢ Different types of fats in pastry. ➢ Gluten in different types of flour. ➢ Glazes on pastry. ➢ Thickening agents.

			metabolic rate (BMR). ➢ Correct storage for meat. ➢ Vegetarian protein alternatives. ➢ Less familiar grains.			
Key Vocabulary	**Textiles**: Islamic design Design influence Stakeholder Culture Marketing Design iteration Design development SCAMPER Batik Wax resist Construction Prototype Presentation Pitch Client User **Resistant materials:** Marketing Stakeholder Design iteration Design development SCAMPER Polymer HDPE	**Textiles**: Islamic design Design influence Stakeholder Culture Marketing Design iteration Design development SCAMPER Batik Wax resist Construction Prototype Presentation Pitch Client User **Resistant materials:** Marketing Stakeholder Design iteration Design development SCAMPER Polymer HDPE	**Textiles and Resistant materials:** Design process Business context User centred design Research needs Design development Branding Sustainability Target audience Business context Costing Budgeting Pitch **Food preparation and nutrition**: Energy needs Saturated fat Nutritional profile Cross-contamination Hygiene Kilocalorie (kcal) Kilojoule (kJ) Physical activity level (PAL)	**Textiles**: Polymers Timers Fibres Sample Surface design techniques Cutting Burnishing Bleaching Dyeing Wax resist Brusho Embroidery Free motion embroidery Sublimation printing **Resistant materials:** Anthropometrics Ergonomics Rendering Sketching Design communication Light source LED	**Textiles**: Design development iteration Pattern Construction Designer Inspiration Biomimicry 2D/3D Calico Garment Surface design **Resistant Materials:** Pine MDF Joint LED User Testing Feedback Solder Finish Quality control	**Textiles**: Pattern Garment Process Construction Quality control Surface design Context Nature Influence Feedback **Resistant materials:** Innovation Design techniques Design scenarios Product analysis Research Modelling Drawing Design solutions Presentation Feedback

	Recycling Sea plastics Client User Shaping Forming **<u>Food Preparation and Nutrition:</u>** Diet Nutritional Value Energy needs Adaptation Savoury Hygiene Food groups Fats Protein Gluten Sensory analyis	Recycling Sea plastics Client User Shaping Forming **<u>Food Preparation and Nutrition:</u>** Diet Nutritional Value Energy needs Adaptation Savoury Hygiene Food groups Fats Protein Gluten Sensory analyis	Dietary reference values (DRV) Basal Metabolic Rate (BMR) Dietary requirements	**<u>Food preparation and nutrition:</u>** Vegetarian Dietary requirements Seasonality Sustainable fishing and farming Food Miles Organic food Buying local Food waste Farm Assured Environmental impacts	**<u>Food preparation and nutrition:</u>** Saturated fat Creaming method Calcium Micronutrients (water and fat soluble) Gelatinisation	**<u>Food preparation and nutrition:</u>** Modification Adaptation Aeration Gelatinisation Stabilising Hypothesis