

YEAR 7 DESIGN TECHNOLOGY CURRICULUM PROGRESSION OVERVIEW

Subject Curriculum Intent

Design and Technology is an inspiring and practical subject. Using creativity and technical knowledge, students design and make products for real life situations. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Students will learn how to take risks and problem solve, encouraging them to become more resourceful, innovative and creative. They will study designers, manufacturers and products and through the analysis and knowledge of these, they develop a critical understanding of design and technology and its importance within the industry.

Within Food and Nutrition, students will cover a wide and varied curriculum based on food preparation and building practical skills. Students will study an array of food commodities and investigate their properties and functions within recipes, thus building a solid understanding of the dishes and ingredients they have used. Throughout KS3, students will acquire a sound knowledge of nutritional principles which allow the learner to make informed choices in diet as well as provide a smooth progression in knowledge into KS4. Alongside this, the curriculum offers essential knowledge of economic, ethical and environmental education surrounding this subject area. KS3 Food and Nutrition provides a solid foundation for progression to KS4 courses whilst delivering key knowledge and understanding of the entire food industry for students' future careers.

The Design Technology department at Huntcliff offer a fully inclusive and supportive working environment where all students can access all areas of the subject equally.

Pupil premium students will be provided with all ingredients for any recipes required for Food and Nutrition lessons, they will also be provided with any design materials for both Graphics and Engineering. We recognise that students may need extra help and intervention and the Design and Technology department offer full support to ensure that all students regardless of background or ability achieve and exceed their potential. SEND students are offered alternative resources based on their individual needs. We work closely with the SEND inclusion provision within the school to ensure that they receive any extra support and the correct education depending on their needs.

We aim to stretch and challenge student's personal development by including topics designed to educate them on relevant and intriguing concepts. We focus on themes such as nutrition and maintaining healthy balanced diets and looking after their health. Students will examine how industries such as design, engineering and food effect the environment and be proactive in suggesting ways that these can be reduced. In food and Nutrition, students will study other cultures, religion and dietary needs and apply their knowledge by adapting recipes to cater for others besides themselves. Students will develop key life skills such as problem solving, team work and empathy as well as leadership and self-belief.

Year 7 is an important year in DT. It allows students to take knowledge and skills from their studies of DT at KS2.

As Design Technology is taught on a termly rotation, all Year 7 students will get the opportunity to experience each subject area and develop technical knowledge and a growing practical skill set in each one.

Autumn Term 1

Autumn Term 2

Spring Term 1

Spring Term 2

Summer Term 1

Summer Term 2

Topic	Food & Nutrition	Food & Nutrition	Graphic Communication	Graphic Communication	Materials Technology	Materials Technology
Core Knowledge/ Threshold Concept	Health Safety & Hygiene Kitchen Safety Use of equipment Basic Food Hygiene Basic knife safety Basic Nutritional Principles Eat Well Guide Food Groups Functions of nutrients Maintaining a balanced diet Practical Skills Fruit Smoothies Vegetable soup Cakes	Food Provenance Farm to Fork Seasonality Mass production – bread Farming methods Practical Skills Fruit crumble Bread Pasta & Ragu sauce	Colour theory Rendering Design – Focus around chosen artist/illustrator Axel Scheffler Cutting skills – Safety with craft knives and scissors Adhesives	Tech soft 2D design Industrial processes Design process Design transfer	Health and Safety Design Brief Research Design Development Product Manufacture Evaluation Materials, components and processes focus on woods and their properties. Initial design using existing product Materials Making a Final design Solution	
Why this learning now?	<p>In Year 7 Food and Nutrition, students receive a wide curriculum based on KS3 National Curriculum requirements.</p> <p>In the first half term of Year 7, students will begin their studies in Food by focussing on basic food hygiene and health and safety in the kitchen. It is imperative that the students are fully aware of the dangers in the food room and how to ensure they are safe by using the equipment correctly as it is unlikely they will have worked in an environment similar in Primary. It is also important that within the first term students understand food hygiene and how to prepare and cook their recipes safely. This is a reoccurring theme throughout the first term of Food and Nutrition and is built upon in each practical lesson. The other main theme of the first term of Year 7 is eating a healthy balanced diet and food groups and their basic functions. This draws upon their prior learning of the Eat Well Guide at KS2. To further this, students study the functions of main nutrients and they are essential in a</p>		<p>Graphics begins in Year 7 with the students going back to basics. Although art and design is part of the KS2 national curriculum, students receive very little of it at primary as time is taken up with SATS. Therefore, it is essential that the first half term in Graphics is spent teaching the basics.</p> <p>The students begin their time in Graphics by focusing on colour and colour theory. Here they will learn primary, secondary and tertiary colours and how they can be mixed, what colours complement each other and which ones will clash. This then leads to applying this theory by learning techniques of placing colour on surfaces and rendering correctly. There is a heavy focus on terminology in order to expand student's technical vocabulary.</p> <p>Following this, students will continue their studies into graphic design by completing contextual research on a graphic artist. This will begin to build their portfolio of knowledge of graphic artists which will be integral to</p>		<p>Year 7 studies in Engineering are aimed to build on prior learning undertaken in primary school in KS2. Students in KS2 should have some experience of designing and making products, as well as basic knowledge of materials used in everyday products such as wood, plastic and metal. Students will not, however, have had experience in a real engineering classroom. Therefore, it is essential that the first priority for year 7 students is to understand and practice health and safety when in the engineering classroom. Due to the nature of the equipment that they will be using it is very important that the teacher is able to trust that the student will use the equipment safely and sensibly and knows how to use it correctly to prevent injury. Safety in the workshop and training of use of equipment is a reoccurring theme that runs throughout KS3 so ensure that students can access KS4 fully equipped with the knowledge and skills to use equipment correctly, safely and independently.</p>	

'balanced diet'. This is designed to be included in this part of the curriculum as it will enable them to understand the nutritional value of the dishes they create in their practical lessons.

In the second half term students expand their knowledge of food by studying various areas of food provenance. Here they initially focus on seasonality and the impact of food miles. This complies with the National Curriculum requirements that students are aware of where food comes from and seasonality of food. Students move on to study methods of growing, rearing and catching food and how food goes from farm to fork. From this, the students will examine concepts of mass production and how food is manufactured for the general public. They will then discuss and debate methods of farming and its impact on the environment. They then progress to ethical food choices such as free range/caged methods of egg farming.

Practical Outcomes

The first practical lesson students complete is a Fruit Smoothie, here they practice knife skills, preparation of a safe workspace and use of a blender.

Students will then refine their knife skills by preparing vegetables for a vegetable soup. They also learn how to use the hob safely.

The students then bake cakes, using new equipment such as electric whisks and weighing scales. They also focus on oven safety and how to use it correctly.

Following on from their lesson in seasonality, students select a seasonal fruit and produce a fruit crumble. This tests their ability to combine different components of dishes and equipment.

The next practical the students produce is bread, this follows from their theory lesson on mass production of bread. They will learn new skills such as kneading and proving, as well as gain knowledge of the ingredients and their functions. Here they will also compare the processes of mass production and home baking.

The final practical the students produce is pasta with a ragu sauce. This practical combines all processes that the students have used over the term and they will need to prepare the dish independently. This will provide their final practical assessment

their studies in KS4. This also provides valuable inspiration for their designs.

Leading from this, the students next lesson will be to practice cutting skills. As previously mentioned, students have limited experience of these types of activities in primary school and therefore will require full health and safety and training of all types of cutting techniques. Students will experience techniques using scissors and craft knives. They will also understand why graphic designers and manufacturers use craft knives over scissors and how to use them accurately. Students will also gain experience and knowledge in adhesives and how to use them.

All of these aspects of the projects are used when the students design their product which is a door hanger. They will learn basic methods of design and use hand drawings to develop and refine their ideas.

Having selected their design, they will make their final product followed by their product evaluation.

All of these stages will be repeated throughout KS3 in preparation of KS4.

In the second half term, students will undertake a second project – a photo frame. Here the students will begin by being introduced to 2D design. 2D design is a program that is used throughout KS4 and is essential to its implementation. Students will acquire skills in drawing on a CAD program whilst gaining knowledge on the advantages of using CAD over hand drawn designs.

Following this, students will explore the use of CAM. They will focus on industrial processes and use their 2D design drawings and watch them being transferred and cut out using the laser cutter. Here the students will also have to opportunity to expand personal development by analysing the use of plastics and the impacts and advantages of mass production.

Students will then be directed to some independent graphic artist research – a skills they will require when progressing to KS4.

Again, students will then utilise their new knowledge and building skills to begin some initial design ideas for their photo frames. These designs will be peer assessed to help the students select the most successful. Ideas will then be transferred to 2D design, building on their CAD drawing skills and knowledge. Their final designs will then be cut out using the laser cutter. These final outcomes will then be evaluated, thus completing the full design process.

The students will then follow this training with an introduction to the design process. The design process is essentially the same as the one followed at KS4, however, throughout KS3 it will build in difficulty and new skills and knowledge will develop.

Students in Year 7 will begin by being posed with a design problem and a brief. They will then produce initial designs and design development – here they will be instructed on how to complete technical design drawings and learn technical vocabulary through use of materials, equipment and processes.

Practical skills will be assessed and students will be introduced to processes in product construction and use of materials such as wood.

		All graphics classwork is accessible to all abilities of all students. Templates and additional/alternative resources are available for any student who requires more support, whereas students have opportunities to stretch and challenge themselves with independent study and infinite design possibilities. SEND students are provided with individual learning plans depending on their needs.				
Assessment Opportunities:	<p>Every lesson has:</p> <ul style="list-style-type: none"> - A recall starter - Self-assessment opportunities (set against ARE's) these are visible to the students and act as success criteria. - Formative assessment from teachers (set against ARE's) - Food and nutrition practical work is reflective with mark scheme that mirrors KS4 techniques and skills. <p>End of Unit Assessments</p> <ul style="list-style-type: none"> - Each subject has both a theoretical assessment (teacher assessed) based on learning of each term - Each subject has a practical assessment based on either the final product outcome (MT/GC) or a targeted practical (FN) 					
Learning at Home	Homework will be set and teacher assessed once per topic (minimum).					
Key Vocabulary	Hygiene Nutrition Nutrients Contamination	Seasonal Sustainability Ethical				
Spiritual, Moral, Social and Cultural concepts covered	<p>The Design Technology curriculum provides students with the opportunity to learn about and discuss current issues in the design and manufacturing industry as well as food production.</p> <p>More specifically, concepts covered are:</p> <p>Spiritual – Food and religions, analysing artists/designers work.</p> <p>Moral - Ethics in food provenance, recycling materials, sustainability.</p> <p>Social – impact of food choice and influences. Social influences into design. Examining social factors of products and why they are successful.</p> <p>Cultural – farming in different countries. Use of materials in other cultures. Designers and artists cultural links.</p>					
Links to careers and	Strong links to careers in each subject – discussions on food industry careers beyond the 'chef role'. Links with engineering industry – investigating different types of engineering and their roles. Teaching professional skills and techniques.					

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