OUR CURRICULUM



DESIGN & TECHNOLOGY

PHILOSOPHY & NARRATIVE

Great design is a multi-layered relationship between human life and its

environment.

Naoto Fupasana

OUR PHILOSOPHY

The mastery of crafting, both in terms of knowledge and application, allows progression into creative design and the innovative development of rapidly changing technologies. The practical skills course,

Design and Technology, makes a unique contribution to the development of young people by preparing them to participate in, think about and intervene creatively to improve the quality of their physical environment.

It provides pupils with exciting opportunities to develop their capabilities, combining their designing and making skills with knowledge and understanding, to produce high quality outcomes, ultimately making them informed users of products.

DT study emphasises the importance of rigour and practice in developing students making skills to a critically high standard. Embedding practical knowledge and developing an eye for detail forms the basis for higherlevel skills.

Design is a way of thinking creatively, taking ideas and turning them into practical reality, which is critical for successful innovation.

This is important for the future prosperity and economic health of the UK.

KEY STAGE THREE

KS3 Students are introduced to the three concepts of designing, making and materials through the three crafts of Textiles, Resistant Materials and Food Technology. In Year 9, students specialise in one of the three crafts.

Textile products form a part of everyday life; students develop a variety of making skills including weaving, embroidery and hand stitching; making an open seam, an over-locked seam and creating buttonholes. They broaden their knowledge of a range of techniques, by learning to use a variety of specialist textile equipment. Alongside practical knowledge, students gain a deeper understanding of the World of Textiles through studying the Industrial revolution, and the influence of an historical, local figure - James Hargreaves, on the modern industry.

Deconstructing yarns and using the microscopes to investigate the fibre, from source through to construction, enables students to make comprehensive and creative material choices. The course considers current and relevant issues regarding the environment and the sustainability of fibres and fabrics. Students will explore and examine an historical investigation into fibre dyeing from its inception to the present day, which will encompass research into natural and synthetic fibres.

In year 9 students further develop and apply their mastery of practical knowledge to the design and making process. Through a study of iconic fashion designers: Alexander McQueen, Coco Channel, students design, select materials and make a 1/5th scale fashion item.

Resistant Materials: Forming an understanding of the fundamental principles of materials is essential to the role of designers and engineers. Students explore the properties of different woods, and gain an understanding of how their properties affect the making techniques. Beginning with basic joining techniques and using hand tools, students develop practical expertise. They develop an understanding of one of the forming processes, and create samples using basic machine skills. As well as gaining an understanding of how machinery works, they will develop an understanding of how to maintain machines within the workshop. Practical knowledge and rigorous practice, enable students to develop mastery in producing a variety of wood joints, aspiring to high quality craftsmanship, including expert finishing techniques.

KEY STAGE THREE

Students will become aware of the influence of the Industrial Revolution, which ushered in and paved the way for key innovators such as Brunel. This will also include an examination of influential pioneering architects such as Frank Lloyd Wright.

In year nine, students' rigorous practice and knowledge of joint-making combines with new expertise in laser cutting and electronics to design and create a classic wooden box-lamp inspired by Charles Rennie Mackintosh. Pupils will understand how new designs have evolved over time and will be introduced to the most influential stages in the history of Product Design. Pupils extend their STEM knowledge by conducting a practical investigation creating a scaled wooden hull of a boat, involving: energy stores and transfers, speed, distance and time, mechanisms, averages and range.

Food:Good food mixed with engaging conversation is the bedrock of human social interactions. Food, at its very best, is an eclectic mix of textures and flavours, which engage the human palate, taking the raw materials of basic ingredients and mastering the craft of cookery. During years seven and eight students learn basic skills such as measuring, chopping and preparing ingredients along with the design of basic dishes. They explore combining flavours using different ingredients and consider how taste and texture is created through different making and cooking techniques. Students develop the skills to create a variety of food dishes, setting them up for an independent adult life. In addition students gain an appreciation of the components of a balanced diet, how to prepare food hygienically and the impact of food production on the environment. By the end of year 8 students have mastered the making of a number of different dishes.

In year 9 students consider the impact of a mixture of cultures on the food prepared and eaten in Britain. They consider the influences of human migration, the environment, religion and local traditions on the design of food dishes. Students begin to take risks, using their mastery of techniques to create new combinations of texture and flavour in their dishes. This iterative approach to design demands confidence and knowledge to be successful. The knowledge of the chemistry of food becomes increasingly important as students design investigations into the effect of raising agents, enzymes, gluten, emulsification and gelatinisation.

KEY STAGE FOUR

Design and Technology: Product analysis plays an important role in Design and Technology. We begin by considering the important work of James Dyson as a British Designer who has challenged companies to look more innovatively at designs to make more sustainable products.

From an identified brief, pupils trial ideas through an iterative design process, considering cost, environmental and social factors, culminating in a definitive design. The practical crafting then encompasses a deep understanding and practical application of materials, machinery and making techniques.

Pupils go on to design and make products in one of the crafts: Textiles or Resistant Materials. In year 10, pupils make either an item of children's clothing, or a wooden bird house. Then in year 11, pupils have a choice of design brief from the exam board.

Food: Years seven to nine serve to create a solid foundation upon which students can build during years ten and eleven to show ultimately their creativity in food production from its raw materials. Students will use their knowledge of how to prepare and combine ingredients by experimenting with ingredient types and quantities, designing and evaluating the dishes they make and refining the cooking process.

Students will see that this idea of product improvement is used as a development tool in the food production industry. Increasingly theoretical aspects of food technology are included, such as considering the components of a balanced diet, influenced by the campaign work of Jamie Oliver, the use of food preservatives, flavour enhancers, and the chemical methods used to create different textures.

In year 11, students design and create three dishes using a wide range of skills such as butchery, patisserie and baking.

KEY STAGE FIVE

Students will be required to undertake a small-scale design, make and evaluate the project in response to a realistic contextual challenge. With reference to the context, students are expected to identify a specific task that meets the needs and wants of a user, client or market.

Design & Technology: Fashion & TextilesFashion design is the art of applying design, aesthetics and natural beauty to products and their accessories. It is influenced by cultural, environmental, historical and social attitudes, and has varied over time and place.

Students consider the History of Fashion and iconic designers such as: Alexander McQueen, Coco Chanel, Yves Saint Laurent and Mary Quant. Alongside the increasing depth of technical knowledge and industrial practice, students are also encouraged to develop their passion into a practical career.

In year 12, students expand their repertoire of sewing techniques in preparation for the demands of their final product. In year 13, students have an entirely free reign to consider the context of need in the market to identify a design problem. They then investigate materials and research design solutions and trial elements of the product, leading to making a finished textile product.

Design & technology: Product DesignProduct design is the art of applying design, and structure to products and their uses. It is influenced by architectural, environmental, historical and social attitudes, and has varied over time and place. Students consider influences such as: Wayne Hemingway and Steve Jobs. Alongside the increasing depth of technical knowledge and industrial practice, students are also encouraged to develop their passion into a practical career.

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BUILDING ON THE KNOWLEDGE OF THE PAST TO HELP THE CHILDREN OF TODAY MEET THE CHALLENGES OF TOMORROW