Subject overview for: Design Technology (3D Design, Textiles and Food Preparation & Nutrition)

1. Subject overview

The Design Technology curriculum at John Masefield High School focusses on combining traditional practical skills with creative and innovative thinking. It is sequenced for the natural progression of skill development from Key Stage 3 to Key Stage 4 via a mastery approach; sequentially building on skills already learned. Key Stage 3 is structured to embed key manufacturing techniques and a basic introduction to independent designing. Key Stage 4 students are able to explore a real-life design context and draw upon their own conclusions. The current GCSE 3D Design course (J175) is split into two assessed components a) 60% design and make portfolio b) 40% design and make externally-set task. Knowledge and understanding are developed throughout the course. The GCSE food preparation and nutrition course is split by two NEA assessments which is 50% of the grade and a written examination which taken at the end of Year 11 which is also 50%.

2. Key Stage Three summary (Year 7, Year 8, Year 9)

During Key Stage Three there are termly rotations. During the autumn, spring and summer terms, students will study traditional Design Technology which includes traditional woodwork, product design/graphics, electronics, textiles and food technology. These subject specialisms aim to offer a wide range of practical skills with an under-pinning of theory.

Year 7 rotations

- **DT – The Really Useful Box;** Students explore specific engineering and manufacturing details via joinery and material properties, to manufacture a wooden box. Students use typography to design the personalisation of their box. Students will understand how programmable electronics and robotics can be used within engineering and DT and be able to complete some simple programming using microbits.
- **Textiles – Underwater Inspired Cushion;** Students explore different surface decoration techniques to design and manufacture a small cushion. Students will learn about the impact of the textile industry on our environment.
- **Food preparation & nutrition:** Students learn basic key practical skills by cooking or baking 10 different dishes. Students also gain an understanding of food hygiene and safety, nutrition and food waste during their theory lessons.

Year 8 rotations

- **DT – Passive Amp:** Students manufacture an acrylic key ring and a passive amp based on a design movement. Students will increase their ability with a range of tools and machinery and refine and develop their finishing techniques. Students will use CAD and CAM to manufacture a design movement inspired section of their passive amp.
- **Textiles – Dia de los Muertos Inspired Textile Art:** Students will design and make a Dia de los Muertos Inspired Textile Art piece using cultural celebrations and dress. Students will increase their confidence and ability with hand decoration techniques and machine work. Students will understand the importance of recycling and reusing in textiles.

- **Food preparation & nutrition:** Students learn the science behind 'bread making' by baking several different bread styles. Students also explore the idea of simple meals to help build culinary confidence. Theory lessons focus on dietary needs and food provenance.

Year 9 rotations

- **DT – Architecture and Structures:** Studenst will learn about structures and how they are engineered to withstand forces. Students will learn about mechanisms within structures. Students will learn about architecture styles and architects and how some incorporate biomimicry within their work. Students will design and make a sustainable living inspired architecture model incorporating LED lighted circuit.
- **Textiles – Festival Textiles:** Students will create a range of fashion clothing suitable for a specific festival of choice, understanding customer needs. Students will upcycle in groups a range of clothing. Students will look at the use of banners and flags at festivals and in the wider community and design and make their own festival carp kite.
- **Food preparation &nutrition:** Students will learn about food production and sustainability. They will confidently and safely prepare and cook a range of food dishes focussing on hygiene, safety, different methods of cooking and dish finishing techniques.

3. Key Stage Four summary Year 10 and Year 11: GCSE 3D Design/GCSE Food Preparation & Nutrition

GCSE 3D Design

Year 10 is broken into 2 parts, during the first half of this academic year students complete a skills based unit of work, increasing their knowledge and ability within 3D design. During the second half of this academic year, students begin their NEA (non-examined assessment) Portfolio coursework.

- **Skills Unit:** This unit is divided into 5 projects. The projects have been designed to give students the maximum exposure to all areas required within the 3D design NEA. The projects the students will complete are 1) a recap of KS3, 2) Design skills, 3) Prototyping, 4) Designers and design movements, 5) Modelling

- **NEA Portfolio:** This is a design and manufacture coursework project worth 60% of the overall 3D Design qualification. Students explore a design context, set by the teacher, and research their own product to manufacture. Students demonstrate their design and practical workshop manufacturing skills, all documented and submitted as a portfolio.

Year 11 begins with the completion of the NEA Portfolio, started in year 10. Students will complete the manufacturing side of this project, as well as testing and evaluating their products and learning journey.

- **Practical examination**: The remainder 40% of this course is assessed via a 10-hour timed practical examination. Students are given a design context from the exam board; they then follow the same design process as the NEA portfolio but within a 10- hour time limit.

GCSE Food Preparation & Nutrition

Theory: Over the course of year 10 students are taught food preparation and theory through the food commodities. Each commodity looks at the provenance, growing and processing, classification, nutrition, food science, storage, and food hygiene and safety.

Practical: During year 10 students continue developing their practical skills by focussing on a range of higher order skills such as butchery, enriched yeast doughs, pastry, and presentation of dishes.

In year 11 students carry out 2 NEA (non-examination assessments) the first 15% assessment is an investigative task looking at the science behind food processes, and the second 35% assessment is a traditional cooking task based around a given brief, where students will need to plan, prepare and cook 3 separate dishes with accompaniments. The remaining 50% of this qualification is gained via a written examination.

4. Contribution to preparing for life in modern Britain/equalities

It is of real importance to us that Design Technology, Textiles and Food Preparation and Nutrition is appealing, appropriate and accessible to all of our students. As a gender diverse department, we actively encourage females in technology by showing successes of women. We pro-actively consider disability within design work and request that students consider designing inclusively and for a wider and more complete target market. We seek to reflect that, in modern world, designers are drawn from all backgrounds. In addition to developing an aesthetic appreciation, we try to equip our students for the world of work through encouraging a problem-solving approach to the work that they undertake. Through working collaboratively and through looking at industry-standard practice, student become increasingly able to tackle projects in a confident and logical manner.

5. Contribution to careers provision

In a semi-rural area, it is possible that many of our students do not have direct access to, or knowledge of, the local and regional businesses involved in food, design, technology and engineering. Increasingly, we are giving students the opportunity to learn from professionals within these industries. We hope that more opportunities like this, will encourage them to consider a career in these areas, and will enthuse and motivate them in their work in school.