

## **Department: Design & Technology**

### **Intent:**

Our vision in the Design and Technology (D&T) department is that all learners develop the skills, confidence and competence to become designers and makers through a curriculum that is inspiring, rigorous and practical. One that encourages children to learn to think and intervene creatively to solve problems, both as individuals and as members of a team. We encourage children to use their creativity and imagination, to design and make products that are fit for purpose within a variety of contexts, using a wide range of materials including food, whilst promoting sustainable design and manufacture across all areas. We also aim to make links to designs and designers throughout history, providing opportunities for children to reflect upon and evaluate their designs. We aim to, wherever possible, link work to other disciplines such as mathematics, science, computing and art and learn about nutrition, product design and textiles technology.

### **Implementation:**

The Design and Technology Department endeavours to make learning fun and meaningful, providing students with many opportunities for both collaboration and independent work.

The D&T curriculum is collaboratively and coherently planned and sequenced across Key Stage 3 to ensure that pupils are stretched and challenged.

Each Key Stage 3 pupil is engaged in Design and Technology for two lessons per week. The department does not operate a carousel system. Each pupil will spend half the year completing D&T projects through 1 hour lessons in Food and Nutrition and 1 hour lessons using a range of fabrics and components alongside decorative surface methods and construction. Pupils also have 1 hour D&T lessons which use a wider range of materials and processes such as polymers, timbers, electronics and CAD CAM for example.

We intend our pupils to:

- develop design and designing skills with an increasing awareness of iterative design processes through modelling and to be able to design and create useful products for a range of users in a range of contexts;
- develop confidence in building independence and resilience to take risks and develop creativity, innovation and problem solving skills when designing and making products that are fit for purpose and be able to work individually and within a group in a variety of contexts;
- develop making skills in using a range of hand tools, equipment and machinery including CAD CAM and electronics as appropriate;
- develop technical knowledge and understanding of materials, ingredients, manufacturing and technical processes and theory;
- learn the principles of nutrition, healthy eating and how to cook;
- develop knowledge and awareness of sustainability and health and safety within their own projects and working;

- evaluate their own design work and made outcomes in increasing detail taking into consideration function, form, material use and impact on users and the environment;
- encourage and inspire students who wish to take on further study from selecting this as an option at GCSE, A level, University and the world of work;
- equip students with the knowledge and skills to go into adult life both at work and leisure with a sound understanding of practical applications to enhance their lifestyles and the joy of learning.

To further enrich the Design and Technology curriculum and to help develop a love and enthusiasm for our pupils and enhance the cultural capital of students, the D&T team provides a wide range of extra-curricular opportunities which include;

- Cooking and nutrition based clubs for KS3
- Textiles making clubs for KS3
- Workshop based making clubs for KS3
- Arkwright Scholarship Club for Year 10-11

**Impact:**

We have designed our curriculum to ensure that every student has the opportunity to make outstanding progress in Design and Technology. We intend for every pupil to develop design and technology capability in being equipped with a wide range of skills including problem solving, communication, resilience and an improved knowledge of the ever developing technological world and its impact on society and the environment.

**Possible careers and opportunities:**

Design and Technology and Food and Nutrition gives pupils a wide and varied learning experience and whilst it can give excellent insight and inspiration into future careers for pupils such as; engineering, product design, the fashion and textiles industry and the food, catering and food science sector it also equips pupils with the generic skills relevant to the modern and future workplace regardless of chosen pathway or career. These being, resilience, independent learning, research, problem solving, communication, time management, critical and constructive evaluation for example.

**Facilities:** The Design and Technology Department is housed in specialist rooms as outlined below.

G1 & G10	Specialist room for Textiles Technology containing sewing machines, overlockers etc.
G2	Workshop containing work benches, hand tools, drilling machine, scroll saw, mini band saw, large band saw, wood turning lathe and provision for soldering of electrical PCBs
G3	Workshop containing work benches, hand tools, drilling machine,

	scroll saw, mini band saw, large band saw, CNC router, laser cutter and plastic forming machines. Laptops for pupil use.
G11	General design room containing 12 fixed PCs and Laptops for pupils use. Two 3D printers, A4 B&W laser printer and A3 Colour printer.

**Support:** All areas provide extra support to KS3, KS4 and KS5 pupils in their chosen course of study as appropriate and this is in addition to the schools intervention programme which is also actively supported by the department.

**Year 7 Curriculum:**

- Design and make projects to include: Fidget Widget; Roll Round Toy.
- Hobby Apron
- Introduction to food and nutrition through a series of focused tasks

**Year 8 Curriculum:**

- Design and make projects to include: Aminator; Game and Electronic Dice
- Small Storage
- School Meal Deal that shows knowledge, understanding and application of food and nutrition

**Year 9 Curriculum:**

- Design and make projects to include: Illumination project including the use of programmable components, Small Container project, Picture Frame and Chocolate Novelties.
- Skirt Project
- Multicultural Festival that shows knowledge, understanding and application of food and nutrition