

# Sandbach School Design and Technology Curriculum:

Introduce:

## Year 7 Design and Technology Curriculum Sequence

**Intent:** Pupils begin to consider the world around them and develop understanding of how a range of products are developed from inception to completion using a range of materials and technology. The subject embeds literacy skills through analysis and evaluation techniques. Consideration of ethical and moral issues are introduced to encompass all aspects to consider when embarking on design.

Transition Phase

**HT1**  
**Our World**

**HT2**  
**Healthy Food Product**

**HT3**  
**Sustainability**

**HT4**  
**Factors Affecting Food**

**HT5**  
**CAD/Pen Project**

**HT6**  
**CAD/Pen Project**

### Why Our World project and content?

This gives students an opportunity to share their experiences and understanding of technology around them as a foundation on which to build future knowledge and understanding. It ties in with a blended approach to learning in year 7. It involves an introduction to drawing skills, sustainability, local and regional foods.

### Why This Module?

This module is an introduction to food technology and reflects current trends in learning about healthy eating and avoiding obesity in the population. It encourages students to reflect on the food they are eating in relation to nutrition and diet. The module allows students to apply their understanding and knowledge of the Eatwell guide.

### Why This Module?

This module introduces an essential topic that transcends all of the technology curriculum today. It challenges students to think about all aspects of sustainability in relation to the 6 Rrs. It encourages students to think about their social responsibility and the impact that technology can have on the environment. It encourages students to think more broadly about the impact of their designing and decisions they make.

### Why These modules?

This allows students to consider a technology approach to food production and introduces a wide range of topics including the use of our 'senses' and sensory analysis to test food products. The module challenges students to reflect on a range of factors that influence the distribution, use and choice of ingredients such as moral, ethical and dietary needs. This provides a context for students to use and consider when designing or evaluating their own food dishes accordingly.

### Why These modules?

This project introduces the fundamental concepts of CAD/CAM production. It provides a commercial approach to teaching product design that transcends and supports consequent teaching in KS3, 4 & 5. It develops skills in product 'prototyping' and meeting a design brief (aimed at a specific target market), thus providing a context and constraints for students to work within. The project also includes wider concepts and recurrent design themes related to product packaging, graphic design and marketing. While the project helps to embed fundamental skills and knowledge, it allows for a creative and personalised approach that students will need to become independent and able to extend their learning in Year 8 and 9.

### National Curriculum Links - Pupils will:

- develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools
- understand the source, seasonality and characteristics of a broad range of ingredients.
- problems given to them and understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists

### National Curriculum Links - Pupils will:

- understand and apply the principles of nutrition and health
- understand the source, seasonality and characteristics of a broad range of ingredients.

### National Curriculum Links - Pupils will:

- identify and solve their own design problems and understand how to reformulate
- problems given to them and understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists
- investigate new and emerging technologies

### National Curriculum KS3 Links - Pupils will:

- understand and apply the principles of nutrition and health
- understand the source, seasonality and characteristics of a broad range of ingredients

### National Curriculum Links - Pupils will:

- Design** – identify and solve their own design problems and understand how to reformulate problems given to them
- develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situation
- use a variety of approaches [for example, biomimicry and user-centred design] to generate creative ideas and avoid stereotypical responses
- develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations
- Make** - select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture (i.e. Laser Cutting)
- Evaluate** - test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested group
- Technical knowledge** - understand and use the properties of materials and the performance of structural elements to achieve functioning solutions

**Teaching this project supports:** foundation skills in drawing and an introduction to food topics. It covers some underpinning skills and knowledge used by students in further study.

**Teaching this project supports:** the school's health and well being policies e.g. PSHCE mental health and wellbeing modules as well as supporting the governments drive to improve the health and well being of the nation. The module establishes a foundation for future development work and broadening of knowledge in Years 8 and 9.

**Teaching this project supports:** cross curricular knowledge of sustainability topics in science and Geography. It also supports higher achievement in coursework and examinations in KS4 and KS5.

**Teaching this project supports:** the general design and technology curriculum as it develops a technical approach to food tasting and data analysis through star profiling. It also supports our careers provision as it reflects job roles in industry and approaches taken in quality control and testing products. It also ties in with the school's PSHCE programmes related to moral and social responsibility.

### Teaching this project supports:

The teaching of more complex CAD/CAM projects in KS4 and 5. It also supports the careers cross-curricular delivery in making links to CAD job roles and the importance of students developing relevant and up-to-date skills required in Technology related job roles. It helps to broaden the students' ICT and digital presentation skills. It also offers an opportunity for a creative response linked to art and graphic design.

### This project feeds from:

- KS1
- use the basic principles of a healthy and varied diet to prepare dishes and understand where food comes from.
- KS2
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

### This project feeds from KS1 and 2 experiences and requirements of the national curriculum

- Key stage 1
- use the basic principles of a healthy and varied diet to prepare dishes
  - understand where food comes from
- Key stage 2
- understand and apply the principles of a healthy and varied diet
  - understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

### This project feeds from:

This is a new concept for students to investigate. It links to other cross curricular themes in Science and Geography. The topic has become a pressing issue for people to address and so the project builds on the students own awareness and understanding of sustainability and the environmental challenges faced. It also links to the introductory projects covered in Our World

### This project feeds from KS1 and 2 experiences and requirements of the national curriculum

- Key stage 1
- use the basic principles of a healthy and varied diet to prepare dishes
  - understand where food comes from
- Key stage 2
- understand and apply the principles of a healthy and varied diet

### This project feeds from KS2 Design and Technology teaching linked to the National Curriculum e.g.

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design
- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work